Child Marriage Acceptability Index (CMAI): South and Central Sulawesi, Indonesia

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Research

Keywords: CMAI, child marriage, child marriage acceptability index

DOI: https://doi.org/10.21203/rs.3.rs-695967/v1

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Abstract

Objectives

This study aims to assess child marriage acceptability in the two locations in Indonesia by gender inequality, financial security, education rates, legal frameworks, dowry, sexual and gender-based violence (SGBV).

Methods

This study used a quantitative approach with a cross sectional study design. A total of 1,000 respondents consisting of 500 households in Bone District, South Sulawesi and 500 households in Palu, Sigi, Donggala District in Central Sulawesi participated in the study. Data analyses were conducted based on the Acceptability Child Marriage Index (ACMI) by using the bivariate correlation, ANOVA (analysis of variance) and logistic regression.

Results

This study found several significant factors contributed to child marriage acceptance in Central and South Sulawesi: household financial security (p=0.016), dowry (p=0.000) and legal frameworks (p=0.017) based on ANOVA analysis. After conducting bivariate correlation, dowry (p=0.000) and sexual and gender-based violence (p=0.000) remain significant factors. Dowry (p=0.000, with expected B=0.122), and sexual and gender-based violence (p=0.001, with expected B=0.064) remains significant after the linear regression analysis.

Conclusions

Dowry practice and sexual and gender-based violence were the most significant factors contributing to the child marriage acceptance in Central and South Sulawesi. There is a need to conduct interventions to prevent child marriage including providing sexual and reproductive health education.

1. Introduction

Child marriage remains an important social issue worldwide and it is a violation of human rights. Girls are more vulnerable for child marriage compared to boys. UNICEF reported that there has been a decline in the global prevalence of child marriage in the last decade. However, there are still around 12 million girls who experience child marriage per year. The highest prevalence of child marriage is in sub-Saharan Africa and South Asia, where an estimated 38% and 30% of girls marry before 18 years, respectively [1]. Countries and societies with high gender inequality (e.g. laws and customs that exclude girls from decision-making or economic and political rights) are more likely to feature a high prevalence of child marriage.

Child marriage remains an important social issue in Indonesia. UNICEF data ranks Indonesia eight in the world and second highest in Southeast Asia in terms of the percentage of marriages in which at least one of the spouses is under 18 years [2]. Child marriage in Indonesia has decreased slowly in Indonesia, from 14.67% in 2008 to 10.82% in 2019. However, 22 out 34 provinces in Indonesia still had high child marriage rates above the national average in 2019. South Kalimantan had the highest rate (21.2%) followed by Central Kalimantan (20.2%) and West Sulawesi (19.2%). On the other hand, the Indonesia government has a target to decrease the child marriage prevalence to 8.74% in 2024 as part of its national development strategy [3].

A number of studies have explored the contributing factors to child marriage in Indonesia which include socio-economic factors such as poverty, cultural norms, and low educational opportunities [4–6]. Those living in poverty were more likely to marry early. In many cases, parents marry off their children to lessen their economic burden [7]. Those dropping out of school were also more likely to marry early [8]. Unwanted pregnancy also played a significant contributing factor to child marriage.
Child marriage is assumed to be a way to prevent risky sexual behavior between girls and boys (to avoid sin or *zinah*) [9]. UNICEF also reported that those living in rural areas were more likely to marry early compared to those in urban areas [3].

In several countries, families practice dowry, transfer of assets and goods from the bride to the groom's family at the time of marriage, or practice bride wealth, payment by the groom or his family to the bride's parents [10]. In Indonesia, bride price is called “Mas Kawin” or “Mahar” which is compulsory for marriage in Islamic belief. *Mahr* is a mandatory gift from a prospective husband to his future wife. The Presidential Instruction No.1 in 1991 concerning The Dissemination of the Compilation of the Islamic Law stated that *mahr* can be in the form of goods, money, or services that are not against the Islamic Law (article 1) and the groom has an obligation to pay *mahr* to the bride with agreement from both parties. There are several types of *Mahr*: money, jewelry, animals or religion-related assets such as Al-Quran and other worship equipment. *Mahr* in etymology means dowry. It was stated in the Surat An-Nisa (chapter four): “*Dan berikanlah maskawin (mahar) kepada perempuan (yang kamu nikahi) sebagai pemberian yang penuh kerelaan* ("Give a dowry or (dowry) to a woman (whom you marry) as a gift full of willingness"). Men have an obligation to pay *mas-kawin or mahr* and it is a compulsory bride price [11]. The bride price practice may be different in each area in Indonesia including its amount. It is influenced by the prospective bride's social status, education level and occupation.

Gender-based violence is also a contributing factor of child marriage and negative impact of child marriage. A study in 34 countries found that women who married as children were more likely to report physical and/or sexual violence from their parents compared with those who married as adults [12]. In 2019, at the Nairobi Summit on ICPD25, Indonesia committed to implement strategic policies and campaigns and increase the national and sub-national budgets to end gender-based violence and harmful practices, and to revise the Marriage Law 1974, by increasing the age of first marriage to at least 19 years for both boys and girls [13]. Previously, according to the Marriage Law No.1/1974, the legal age for girls in Indonesia to get married with parental consent is 16 years old. However, the Marriage Law was amended in September 2019, increasing the legal age for girls to get married to 19 years old, the same age as boys [15].

The focus areas of the study were Bone District in South Sulawesi, and Palu, Sigi and Donggala District in Central Sulawesi. There has been a decrease of child marriage cases in Central Sulawesi since 2016. However, the child marriage rate in Central Sulawesi (15.8%) was still higher than the national average (11.2%) in 2018, which remained high after the earthquake and tsunami disaster in the same year. In 2019, the prevalence of child marriage in Central Sulawesi was 16.3% (an increase of 0.5% compared to 2018), still higher than the national rate (10.82%). The child marriage prevalence in South Sulawesi in 2018 was 14.1%, higher than the national level (11.2%), and in 2019, the prevalence was 12.1%, still higher than the national rate (10.82%) [10].

In September 2018, a 7.4 magnitude earthquake hit several areas of the Central Sulawesi area that negatively impacted the lives of over 675,000 people. Soon after the evening earthquake, a large wave of water hit the shoreline, sweeping away many people and buildings. Several areas of Central Sulawesi were hit by massive landslides following the earthquake and subsequent tsunami. The three most affected districts were Palu, Sigi and Donggala. This affected 375,000 residents in Palu and another 300,000 in and around Donggala. The government announced that 2,086 people died, 4,438 were injured, 206,524 were displaced, and 1,309 are unaccounted for as result of this natural disaster. It has been estimated that nearly 69,000 homes, places of worship, stores, school, and office buildings were damaged by the quake [11]. This study aims to assess child marriage acceptability in the two locations in Indonesia by gender inequality, financial security, education rates, legal frameworks, dowry, sexual and gender-based violence (SGBV).

### 2. Methods

#### 2.1. Methodology

The study used a cross-sectional design, with researchers making observations of variables at certain times. The participants consisted of parents in households with children aged 13–15 years in two locations, Central Sulawesi and South Sulawesi.
The minimum number of participants was calculated based on Hulley et al (2013) (p.57) method, where \( N \) (sample) = 16: (standardized size effect)\(^2\). The standardized size effect to be used is 0.3, with a confidence interval of 95%, and power (\( \beta \)) of 80%. From the number of samples that have been calculated, researchers add an additional sample up to 10% of the total including adding samples in the control area. So that the number of samples becomes 500 for each location. The total sample that participated in this study was 1000 respondents (500 respondents from Bone, South Sulawesi and 500 respondents from Palu, Sigi, Donggala, Central Sulawesi).

### 2.2. Data collection

Respondents aged 30 years and over from 8 villages in Bone, South Sulawesi and 19 villages in Palu, Sigi and Donggala in Central Sulawesi who have children aged 13–15 years were recruited. With the help of the village leaders, we mapped the houses and determined which respondents were visited by using random techniques, for example with the distance of every 10 houses, and if there were no families with children aged 13–15 years, we visited the house next door. The data collection used the mWater Surveyor App on tablets and smart handphones. The survey took approximately 50–60 minutes to complete. The data that has been collected is stored by Tulodo Indonesia. Only UNICEF Indonesia and Tulodo Indonesia have full access to the set data. If the set data want accessed by an outside party, they must ask UNICEF Indonesia for approval to use the data.

This research has received ethical approval from the Ethics Commission for Research and Community Health Service, Faculty of Public Health, University of Indonesia (No.256 / UN2.F10 / PPM.00.02 / 2019) from the Provincial Government of South and Central Sulawesi. Respondents in this study signed an informed consent which contained information about the length of the interview, the confidentiality of the data provided, voluntary participation of the respondents, no potential hazards generated after the research, and the research results would not be used by anyone other than researchers and interested parties.

### 2.3. Data analysis

To analyse the quantitative data, the SPSS 25.0 for PC was used. Descriptive statistics were used to analyse demographic data, such as gender, age, income, and education status. To answer the research question, inferential statistics were used. The questionnaires were developed based on the Child Marriage Acceptability Index (CMAI) developed by Asia Child Marriage Initiative (ACMI) from Plan International.

The CMAI is comprised of a set of indicators (and associated variables) that explain the presence of environmental factors associated with the acceptability of child marriage. The main indicators for the CMAI included household financial security, education level, legal framework, dowry and sexual and gender-based violence. This study used 21 questions on attitudes and perceptions that relate to various elements of acceptability of child marriage based on the CMAI questionnaire developed by Plan International and ACMI. Each question has its own score, for example the ideal age for marriage, disparity in ideal age for marriage for girls compared to boys, and so on. For the perception of child marriage, the responses were arranged along a 7-level Likert scale consisting of: strongly disagree, disagree, slightly disagree, neither disagree nor agree, slightly agree, agree, and strongly agree. For testing of each question from CMAI, there are two types of statistical tests used: the validity test uses the Corrected Item-Total Correlation, while the reliability test uses Cronbach's Alpha (0.693).
| CMAI questions                                                                 | Validity test | Reliability test | Cronbach's Alpha if Item Deleted |
|-------------------------------------------------------------------------------|---------------|------------------|---------------------------------|
|                                                                               | Pearson       | Sig              |                                 |
| Ideal age of marriage for girls*                                              | 0.277         | 0.000            | 0.693                           |
| Disparity in ideal age of marriage for girls compared to boys*                | 0.083         | 0.009            | 0.697                           |
| Lowest acceptable age of marriage for girls*                                  | 0.346         | 0.000            | 0.685                           |
| Highest acceptable age of marriage for girls*                                 | 0.162         | 0.000            | 0.692                           |
| A girl is ready for marriage once she starts menstruating*                    | 0.526         | 0.000            | 0.673                           |
| There are advantages to marriage of girls under 18 years*                     | 0.589         | 0.000            | 0.672                           |
| There are disadvantages for girls getting married under 18 years*              | 0.072         | 0.044            | 0.702                           |
| Marrying girls can help protect family honour/reputation*                      | 0.609         | 0.000            | 0.668                           |
| Girls who give birth between 15–18 years are more likely to have a healthy pregnancy/baby (compared to girls over 18)* | 0.520 | 0.000 | 0.675 |
| Marrying girl young can help resolve financial problems in the family*        | 0.626         | 0.000            | 0.669                           |
| Marrying young girls can help provide them security*                          | 0.659         | 0.000            | 0.666                           |
| Early marriage of girls can help prevent sexual violence, assault, and harassment* | 0.657 | 0.000 | 0.665 |
| Early marriage of boys can help prevent sexual violence, assault, and harassment* | 0.655 | 0.000 | 0.665 |
| Marrying under 18 years is likely to have a negative impact on a girl's education* | 0.361 | 0.000 | 0.683 |
| Marrying a young girl is preferable because younger brides are more obedient and respectful of their husbands* | 0.359 | 0.000 | 0.682 |
| Even if a girl does not want to be married, she should honor the decisions/wishes of her family* | 0.254 | 0.000 | 0.688 |
| Younger brides require a lower dowry than older brides*                       | 0.185         | 0.000            | 0.693                           |
| A girl should never be forced or compelled into marriage*                      | 0.135         | 0.000            | 0.693                           |
| It is sometimes okay to beat or punish a girl when he dishonor her family*    | 0.127         | 0.000            | 0.693                           |
| A wife should be subservient to her husband.                                  | 0.167         | 0.000            | 0.692                           |
| Men should be the heads of their household*                                   | 0.140         | 0.000            | 0.693                           |

*Valid and reliable. If the value of Sig < 0.005 and value r count > r table (r count > 0.062) in Pearson Correlation and Cronbach's Alpha test.
For the household financial security indicator, the household income was categorized into six groups: those whose income is in top 10% of national average; 4th quintile (top 60–80%), 3rd quintile (40–60%), 2nd quintile (bottom 20–40%) and 1st quintile (bottom 20%) and those living below poverty line. It also measured whether households had sufficient food, clothes, medicines and school items; then the responses were classified into always, most of the time, sometimes and never. The education indicator was measured by classifying households’ education into having formal/mainstream education, basic education/madrassa, and no education. The legal framework was measured by asking whether households have correct knowledge of the marriage law including whether they register their marriage and own identity documents. The dowry variable was measured by exploring whether marriage involves dowry practices and whether younger brides or grooms require lower dowry price. The last indicator, the sexual and gender-based violence (SGBV) measures the acceptance of sexual violence against women/girls and male control over marriage, and the belief that child marriage prevents sexual harassment.

After calculating the acceptability scores of each variable, a series of statistical tests, including bivariate correlation, ANOVA and regression analysis were conducted to test the associations between the independent variable and the child marriage acceptability scores.

3. Results

A total of 1000 respondents (parents/caregivers) participated in the survey, 500 respondents (50.0%) from South Sulawesi and 500 respondents from Central Sulawesi. Most of the respondents were female (83.2%, 168 people) whilst 16.8% were male (168 people). Most of the respondents had income between IDR 500,000–1,000,000 (53.2%, 532 people) whilst 20.2%
(202 people) had income less than IDR 500,000; income between IDR 2,000,000–3,000,000 (13.0%, 130 people), income between 1,000,001–2,000,000 (6.0%, 60 people).

Table 3
Education of family member (n = 1000)

| Education of family member                          | n  | %   |
|-----------------------------------------------------|----|-----|
| **Education of Father**                             |    |     |
| No School/Out of school                             | 27 | 2.7 |
| Graduated from Islamic Elementary School            | 1  | 0.1 |
| Graduated from Islamic Junior High School           | 13 | 1.3 |
| Graduated from Islamic Senior High School           | 11 | 1.1 |
| Graduated from Elementary School                    | 334| 33.4|
| Graduated from Junior High School                   | 196| 19.6|
| Graduated from Senior High School                   | 236| 23.6|
| Not complete Islamic Elementary School              | 2  | 0.2 |
| Not complete Islamic Junior High School             | 1  | 0.1 |
| Not complete Islamic Senior High School             | 3  | 0.3 |
| Not complete Elementary School                      | 72 | 7.2 |
| Not complete Junior High School                     | 25 | 2.5 |
| Not complete Senior High School                     | 21 | 2.1 |
| University or College                               | 58 | 5.8 |

| **Education of Mother**                             |    |     |
|-----------------------------------------------------|----|-----|
| No School/Out of school                             | 18 | 1.8 |
| Graduated from Islamic Elementary School            | 1  | 0.1 |
| Graduated from Islamic Junior High School           | 21 | 2.1 |
| Graduated from Islamic Senior High School           | 7  | 0.7 |
| Graduated from Elementary School                    | 315| 31.5|
| Graduated from Junior High School                   | 233| 23.3|
| Graduated from Senior High School                   | 234| 23.4|
| Not complete Islamic Elementary School              | 2  | 0.2 |
| Not complete Islamic Junior High School             | 2  | 0.2 |
| Not complete Islamic Senior High School             | 1  | 0.1 |
| Not complete Elementary School                      | 53 | 5.3 |
| Not complete Junior High School                     | 25 | 2.5 |
| Not complete Senior High School                     | 18 | 1.8 |
| University or College                               | 70 | 7.0 |
For education, the index is divided into two questions: father’s education and mother’s education. For father’s education, 33.4% (334 people) had completed elementary school, 23.6% (236 people) graduated from senior high school, and 19.6% (196 people) completed junior high school. For mother’s education, 31.5% (315 people) completed elementary school, 23.4% (234 people) graduated from high school, and 23.3% (233 people) graduated from junior high school.
### Table 4
Frequency table of Child Marriage Acceptability Index (n = 1000)

| Child Marriage Acceptability Index | n   | %   |
|-----------------------------------|-----|-----|
| **Ideal age of marriage of girls** |     |     |
| > 25 years                        | 74  | 7.4 |
| 23–25 years                      | 287 | 28.7|
| 21–22 years                      | 266 | 26.6|
| 19–20 years                      | 311 | 31.1|
| 18 years                         | 46  | 4.6 |
| 17 years                         | 11  | 1.1 |
| ≤ 17 years                       | 5   | 0.5 |

| **Disparity in ideal age of marriage for girls compared to boys** |     |     |
|-----------------------------------------------------------------|-----|-----|
| 0 year                                                          | 39  | 3.9 |
| 1 year                                                          | 65  | 6.5 |
| 2 years                                                         | 201 | 20.1|
| 3 years                                                         | 370 | 37.0|
| 4 years                                                         | 116 | 11.6|
| 5 years                                                         | 269 | 26.9|
| > 5 years                                                       | 40  | 4.0 |

| **Lowest acceptable age of marriage for girls**                 |     |     |
|                                                               |     |     |
| 18 years or more                                               | 647 | 64.7|
| 17 years                                                       | 206 | 20.6|
| 16 years                                                       | 47  | 4.7 |
| 15 years                                                       | 54  | 5.4 |
| 14 years                                                       | 21  | 2.1 |
| 13 years                                                       | 22  | 2.2 |
| 12 years or below                                              | 3   | 0.3 |

| **Highest acceptable age of marriage for girls**               |     |     |
|                                                               |     |     |
| No upper limit                                                 | 74  | 7.4 |
| > 40 years                                                     | 112 | 11.2|
| 30–40 years                                                    | 395 | 39.5|
| 25–29 years                                                    | 273 | 27.3|
| 21–24 years                                                    | 111 | 11.1|
| 19–20 years                                                    | 35  | 3.5 |
| 18 years or lower                                              | 0   | 0.0 |
In total, there are twenty questions comprising the Child Marriage Acceptability Index (CMAI). Table 3 showed the ideal age of marriage for girls, the disparity in the ideal age of marriage for girls compared to boys, lowest and highest acceptable age of marriage for girls. Most respondents said ideal marriage was between 19–20 years (31.1%, 311 people), whilst a high number reported 23–25 years (28.7%, 287 people) and 21–22 years (26.6%, 266 people). Most respondents said the disparity in the ideal age of marriage for girls compared to boys was 3 years (37.0%, 370 people), then 2 years (20.1%, 201 people) and 5 years (26.9%, 269 people). Most respondents said the lowest acceptable age of marriage for girls was 18 years or more (64.7%, 647 people), whilst 17 years (20.6%, 206 people) and 15 years (5.4%, 54 people). Most respondents said the highest acceptable age of marriage for girls was 30–40 years (39.5%, 395 people), then 25–29 years (27.3%, 273 people) and above 40 years (11.2%, 112 people).
| Statements                                                                 | STA n | STA % | A n  | A %  | SLA n | SLA % | N n  | N %  | SLD n | SLD % | D n  | D %  | STD n | STD % |
|----------------------------------------------------------------------------|-------|-------|------|------|-------|-------|------|------|-------|-------|------|------|-------|-------|
| A girl is ready for marriage once she starts menstruating                  | 10    | 1.0   | 153  | 15.3 | 34    | 3.4   | 43   | 4.3  | 65    | 6.5   | 612  | 61.2 | 83    | 8.3   |
| There are advantages to marriage of girls under 18 years                   | 9     | 0.9   | 91   | 9.1  | 46    | 4.6   | 43   | 4.3  | 72    | 7.2   | 658  | 65.8 | 81    | 8.1   |
| There are disadvantages for girls getting married under 18 years           | 163   | 16.3  | 598  | 59.8 | 48    | 4.8   | 35   | 3.5  | 50    | 5.0   | 88   | 8.8  | 18    | 1.8   |
| Marrying girls can help protect family honour/reputation                   | 12    | 1.2   | 174  | 17.4 | 76    | 7.6   | 46   | 4.6  | 111   | 11.1  | 526  | 52.6 | 55    | 5.5   |
| Girls who give birth between 15–18 years are more likely to have a healthy pregnancy/baby (compared to girls over 18) | 10    | 1.0   | 119  | 11.9 | 47    | 4.7   | 106  | 10.6 | 115   | 11.5  | 521  | 52.1 | 82    | 8.2   |
| Marrying girl young can help resolve financial problems in the family      | 13    | 1.3   | 102  | 10.2 | 62    | 6.2   | 41   | 4.1  | 101   | 10.1  | 610  | 61.0 | 71    | 7.1   |
| Marrying young girls can help provide them security                        | 10    | 1.0   | 138  | 13.8 | 85    | 8.5   | 42   | 4.2  | 121   | 12.1  | 551  | 55.1 | 53    | 5.3   |
| Early marriage of girls can help prevent sexual violence, assault, and harassment | 9     | 0.9   | 157  | 15.7 | 103   | 10.3  | 54   | 5.4  | 129   | 12.9  | 495  | 49.5 | 53    | 5.3   |
| Early marriage of boys can help prevent sexual violence, assault, and harassment | 13    | 1.3   | 167  | 16.7 | 88    | 8.8   | 53   | 5.3  | 48    | 4.8   | 508  | 50.8 | 48    | 4.8   |
| Marrying under 18 years is likely to have a negative impact on a girls education | 224   | 22.4  | 612  | 61.2 | 32    | 3.2   | 28   | 2.8  | 33    | 3.3   | 70   | 7.0  | 1     | 0.1   |

STA: Strongly Agree, A: Agree, SLA: Slightly Agree, N: Neither disagree nor agree (neutral), SLD: Slightly Disagree, D: Disagree, STD: Strongly Disagree
The Child Marriage Acceptability Index (CMAI) also explored the perception of household members around child marriage using sixteen statements. A total of 76.0% (760 people) respondents disagreed with the statement that a girl was ready for marriage once she started menstruating whilst 19.7% (197 people) agreed. A total of 81.1% (811 people) respondents disagreed with the statement that there are advantages to marriage of girls under 18 years whilst 14.6%, (146 people) agreed. A total of 80.9% (809 people) agreed with the statement that there are disadvantages for girls getting married under 18 years whilst 15.6% (156 people) disagreed. A total of 69.2% (692 people) disagreed with the statement that marrying girls can help protect family honours/reputation whilst 26.2% (262 people) agreed. A total of 71.8% (718 people) disagreed with the statement that girls who give birth between 15–18 years are more likely to have a healthy pregnancy/baby (compared to girls over 18) whilst agreed (17.6%, 176 people). A total of 78.2% (782 people) disagreed with the statement that marrying young girls can help resolve financial problems in the family whilst agreed (17.7%, 177 people). A total of 72.5% (725 people) disagreed with the statement that marrying young girls can help provide them security whilst agreed (23.3%, 233 people). A total of 67.7% (677 people) disagreed with the statement that early marriage of girls can help prevent sexual violence, assault, and harassment whilst agreed (26.9%, 269 people). A total of 60.4% (604 people) disagreed with the statement that early marriage of boys can help prevent sexual violence, assault, and harassment whilst agreed (26.8%, 268 people).
A total of 86.8% (868 people) agreed with the statement that marrying under 18 years is likely to have a negative impact on a girl's education whilst disagreed (10.4%, 104 people). A total of 68.1% (681 people) disagreed with the statement that marrying a young girl is preferable because younger brides are more obedient and respectful of their husbands whilst agreed (23.4%, 234 people). A total of 60.8% (608 people) disagreed with the statement that even if a girl does not want to be married, she should honor the decisions/wishes of her family whilst agreed (33.6, 336 people). A total of 87.1% (871 people) agreed with the statement that a girl should never be forced or compelled into marriage whilst (10.0%, 100 people). A total of 66.2% (662 people) disagreed with the statement that it is sometimes okay to beat or punish a girl when he dishonors her family whilst agreed (30.1%, 301 people). A total of 93.1% (931 people) agreed with the statement that men should be the heads of their household whilst they disagreed (3.8%, n = 38).

Table 5 shows the results of ANOVA analysis for the following variables: gender, household financial security, education, legal framework, dowry, sexual-based violence and gender which were statistically significant when tested with the CMAI indicators. ANOVA statistical tests showed results that household financial security ($p = 0.016, F = 1.126$), legal frameworks
(p = 0.017, F = 1.421), and dowry (p = 0.000, F = 1.189) were significant as contributing factors with the CMAI. The statistical test results showed that financial security, legal frameworks, and dowry was the contributing factors to the Child Marriage Acceptability Index (CMAI) in South and Central Sulawesi.

Table 7  
Bivariate Correlation (Pearson Correlation)

| Variable                     | Pearson Correlation (r) | Sig. (2-tailed) |
|------------------------------|-------------------------|-----------------|
| Gender                       | 0.005                   | 0.879           |
| Household financial security | -0.056                  | 0.079           |
| Education                    | -0.036                  | 0.262           |
| Legal frameworks             | 0.032                   | 0.312           |
| Dowry*                       | 0.216                   | 0.000*          |
| Sexual and gender-based violence* | 0.111               | 0.000*          |

*Significant. If value of Sig < 0.005 and value r count > r table (r count > 0.062)

Furthermore, Table 6 used bivariate correlation tests (Pearson Correlation) statistical tests with the same variables. Pearson correlation statistical tests showed results that dowry and SGBV (sexual and gender-based violence) significantly have an impact on the CMAI indicators. The bivariate correlation (Pearson Correlation) statistical tests showed results that dowry (p = 0.000, r = 0.216) and SGBV (p = 0.000, r = 0.111) were significant as contributing factors with the CMAI. The statistical test results showed that dowry and sexual and gender based violence (SGBV) was the contributing factors with the Child Marriage Acceptability Index (CMAI) in South and Central Sulawesi.

Table 8  
Regression linear

| Variable                                | Standardized Coefficients Beta (B) | t       | Sig.     | 95% Confidence Interval |
|-----------------------------------------|------------------------------------|---------|----------|-------------------------|
|                                         |                                    |         |          | Lower limit          | Upper limit  |
| Gender                                  | 0.000                              | 0.006   | 0.995    | -0.012                | 0.012        |
| Household financial security            | -0.054                             | -1.725  | 0.085    | -0.047                | 0.003        |
| Education                               | -0.028                             | -0.892  | 0.373    | -0.047                | 0.003        |
| Legal frameworks                        | 0.028                              | 0.893   | 0.372    | -0.013                | 0.035        |
| Dowry*                                  | 0.209                              | 6.763   | 0.000*   | 0.086                 | 0.157        |
| Sexual and gender-based violence*       | 0.101                              | 3.254   | 0.001*   | 0.025                 | 0.100        |

*Significant. If value of Sig < 0.05 and value t count > t Table 2-side (t count > 1.96)

From the statistical test results in Tables 5 and 6, variables that are statistically significant or p value < 0.005 will be entered into the linear regression analysis. Table 7 shows the results of statistical tests using linear regression analysis which show the most significant variables with the CMAI index. The regression linear statistical analysis showed that dowry (p = 0.000, B = 0.209) and SGBV (sexual and gender-based violence (p = 0.001, B = 0.101) remained significant contributing factors with the CMAI.
4. Discussion

4.1. Dowry

This study found that dowry practices have significant contributing factors to child marriage in Indonesia particularly in Central and South Sulawesi. A number of studies showed that financial transactions around marriage may also contribute to the practice of child marriage, especially in contexts of poverty and vulnerability. In communities where the groom or his family pays a bride price at the time of marriage, which is often the case in parts of Africa, parents may benefit from marrying their daughters early if waiting increases bride prices. By contrast, in communities where the bride brings resources at the time of marriage (dowry, which is more prevalent in South Asia), the required dowry to be paid by parents may be lower if the bride is younger. Marrying a daughter at a younger age also reduces the investments that a family has to make in her education, without necessarily curtailing future returns to those investments if those returns benefit mostly the groom's family. This may lead parents to reap immediate benefits from an early marriage even if this is not in the long term interest of the girl marrying early [17].

Nonetheless as a result of the mounting pressure to control girls' behavior and marry them early, the practice of dowry is widespread and demands are increasing, a view supported by participants in this research. As one older participant in research notes: "When I got married, there was no thought of the groom getting a single dime. Rather the groom had to pay 100 Bangladesh taka (USD1.18) to bring the wife along with him. And that money had to be paid to the father of the bride. The groom had to pay the cost of the ceremony. Now, it's the other way around. If you go to any girl or the girl's father, they ask for money or things. (Older man, Gaibandha)" and "Now it is quite impossible to marry without dowry. The amount is 10,000 taka (USD 118), 20,000 taka (USD 236) and 30,000 taka (USD 354) and more... now it is quite impossible. Most are not married without dowry. There is a great demand [on the family for] money, though they forget to know the name of the girl but not forget about dowry. It is very funny, the cow that is given as dowry, firstly they wanted to see it. Their curiosity is about how nice the cow is. It is like a market of dowry, they take [marry] a little girl but do not take her without dowry. (Older man Gaibandha)"[18].

In India where dowry payments are common, shocks may reduce the probability of child marriage, possibly, because a girl's or a boy's family is unable to meet the dowry requirements. Cultural norms also heavily influence child marriage. In societies where bride price payment is practiced (i.e. the groom's family provides assets to the bride's family in exchange for marriage), the bride's family may reap immediate financial benefits from marrying their daughter. In other context a younger bride is more desirable as she has more time to commit to her new family and bear more children. Thus, where a bride price is paid, the bride's family may gain greater benefit the younger their daughter is, which may motivate parents to marry their daughter early. Similarly, in circumstances where dowry payment is practiced, a smaller dowry may be required for a younger bride, so parents may be incentivised to marry their daughter at a young age to avoid the increasing cost [19].

In Bugis culture, the most dominant ethnic in South Sulawesi and some in Central Sulawesi, there is a form of a bridewealth practice named uang panai. A study from South Sulawesi reported that bridewealth practice (uang panai) was determined by the women's social status, age, education level, and pride of the bride and her family. Uang panai is paid by the groom to the bride and her family to conduct the wedding ceremony [20]. As uang panai has social value in Bugis culture, it may explain our findings that bridewealth/dowry practices were widely accepted by the community.

A study in Donggala in Central Sulawesi province reported that virginity was also considered a main factor in determining the amount of dowry besides level of education, employment status, religion, and behavior and beauty. It can be measured whether the girls are already pregnant (kawin kecelakaan) or still virgin (kawin adat). Those that are kawin adat will have a higher dowry amount compared to those who experienced kawin kecelakaan (kawin lari, getting pregnant, and marriage because of being caught red-handed by a traditional leader). The amount of money and dowry brought by the prospective groom is determined by the results of the family deliberations of the prospective husband and wife. Study shows the level of socio-economic status of the woman's family whom she intends to marry also greatly determines the size of the marriage...
fee. This status is usually measured by virginity, level of education, employment status, religion, and behavior and beauty. A community leader in Tanjung Batu stated the following: “If a woman who wants to get married has a high social status (the woman is still a virgin, works as a civil servant, bachelor, religion, physical appearance), then the dowry for this is at least 30 million rupiahs (USD 2,100). But if they just graduated from high school..., only 10–20 million (USD700-1,400).” [21]

### 4.2. Household financial security

This study also found that financial security including income also contributed to the acceptability of child marriage in Central and South Sulawesi. High prevalence of child marriage in Indonesia is related to poverty. A study in Indonesia reported that child marriage especially for girls has a tendency limit their income generation capacity so they can have a higher standard of living. In this study, women’s economic conditions by age group were classified into five categories: lowest 20%, lowest 20%-40%, lowest 40%-60%, lowest 60%-80%, and highest 20%. The lowest 20% and lowest 20–40% welfare status reflects poor economic conditions. Using logistic regression, it was found that there is a negative correlation between child marriage and income per capita [22]. The findings support our study as there was also a negative correlation between household financial security or income with child marriage acceptability.

A number of studies also have explored that poverty and the lack of viable income-generating options for girls and young women are important factors contributing to high child marriage rates. Skills and financial incentives are sometimes linked to investing in education in girls and/or on the condition that they do not marry until the age of 18 [23]. Child marriage leads women to have children earlier and more children over their lifetime than if they had married later. It affects girls’ educational attainment and literacy negatively, thereby curtailing future opportunities for them to compete for well-paying jobs [17].

A lack of their own income and financial planning skills has the potential to reduce bargaining power for women within the household as well as investment in their children, affecting future generations and contributing to girls getting married at an early age. Similarly, early marriage is also likely to limit the earning capacity of women by reducing their education, work experience before marriage, and ability to work outside the home while married. Even if women who experience child marriage, later contribute more to household income, the improvement in income alone may not always ensure good health outcomes for them. They and their family members (e.g., their babies) will still be more likely to experience stunting, physical disabilities, and risk of degenerative diseases in the future [23].

Child marriage is often considered a way out to lessen the economic burden on the family. Supporting household economic security may provide an acceptable alternative to marriage and increase the value and contribution of the children, particularly girls to her family, for example, having a higher income. The intervention can be conducted by providing scholarships or support for children to access education and conducting livelihood programs.

### 4.3. Knowledge of legal framework

This study found that the knowledge of the legal framework is a significant contributing factor to the acceptability of child marriage in Central and South Sulawesi by using ANOVA, even though it did not remain significant after the regression linear analysis. The legal framework was measured by asking whether households have to correct knowledge of the marriage law including whether they register their marriage and own identity documents.

Knowledge of the legal framework of marriage in Indonesia may contribute to child marriage prevention. Indonesia has made progress by increasing the legal minimum of marriage for girls. Previously, according to Marriage Law No.1/1974, Indonesia allowed girls aged 16 years and below to marry. The Marriage Law was amended in September 2019 and it increased the age that girls can be married from 16 to 19 years, the same age as boys. The legal framework is an enabling environment factor for child marriage prevention, even though some studies reported that it is not sufficient to create lasting change [17].

Field data from West Bengal reveal that the PCMA (types of legal law codes in India) had success in reducing the number of such marriages or punishing its practitioners. Thus, the state had only six registered police cases of child marriage in 2008. Data for the year 2009 are not yet available. The district of Malda did not register a single case of child marriage until
September 2010. The district has state-imposed any injunction to prohibit child marriage in recent times. This reveals that the new law has motivated the relevant persons to implement the law. Conversely, the existing DSWOs and CMPOs (types of legal aid agencies in India) need to wait for changes in social attitudes to enable them to initiate any real action against the violators of the law [24].

4.4. Sexual and gender-based violence

This study found that SGBV (sexual and gender-based violence) was a significant contributing factor to the acceptability of child marriage in Central and South Sulawesi using ANOVA analysis and linear regression analysis. The sexual and gender-based violence (SGBV) measure explored the acceptance of sexual violence against women/girls and male control over marriage as well as the belief that child marriage prevents sexual harassment.

Child marriage is a manifestation of gender-based violence and a violation of the fundamental human rights of women as many girls are forced into marriage against their freewill and consent. It is harmful to children as it robs them of their childhood innocence and turns them into “adults” prematurely. For girls, the age in which they are married renders them unable to negotiate safe sex and are therefore vulnerable to sexually transmitted diseases and domestic violence. The child brides are forced into sexual intercourse with their spouses as soon as they are married resulting in very early pregnancy and resulting in vesico vaginal fistula (VVF) obstetric fistula, when such girls give birth eventually at very tender ages [25].

In societies where gender norms devalue girls’ position, girls are more likely to experience violence within marriages. They are also more likely to experience physical and sexual abuse than those who marry later. Girls not only experience abuse from their husband, but also from other family members. As girls enter into marriage, they may be forced to have a marital sex earlier than they are ready. Furthermore, it may lead to adolescent pregnancy with a high risk of complications during birth and negative impact on the young mother and the baby. Gender-based violence can also harm children's mental and physical health, and increase the perception of violence as acceptable. Children who witness violence are also more likely to perpetrate violence as adults. Various studies reveal that there was a strong likelihood that violent or child abuse will become a continuing cycle of violence. The rates of abuse are higher among women whose husbands were abused as children or who saw their mothers being abused [26].

Gender-based-power relations between young wives and husbands, parents and in-laws are not equal. The unequal gender-based power relations in female child marriage practices in poor families are related to limitation of knowledge and reproduction of power [27]. Unequal gender relations are continuously reproduced through the imposition of negative social labeling on girls. The prevention of female child marriage requires a comprehensive approach by addressing the social and cultural values, especially promoting equal gender relations. One of the solutions is empowerment based on equal gender perspective [28].

Limitations

As the study used the cross-sectional study design, it assessed the independent and dependent simultaneously (capturing in one single time). The limitation of the study is that we cannot draw the causal relationship between the independent and dependent variable. The association between the variables are predictive in nature as we measured the respondents’ knowledge, attitudes and perceptions toward child marriage issues. The further study will be needed to analyze the relationship between these two variables, for example, to analyze the determinant of child marriage with focusing more on the sample from populations who experienced child marriage.

5. Conclusions

Overall this study concluded that based on CMAI, there were some respondents that have positive perceptions toward child marriage. This study also found that in areas with dowry practices, child marriage is more likely to be accepted by the society as the amount of dowry is also determined by factors such as age, education level, girls’ status, and so on. Dowry practices
will continue as it is part of the culture in South Sulawesi, however there is a need to change the community perception towards dowry practices in order to address child marriage and gender inequality. For examples whether younger girls will have lower “uang panai” compared to those aged more than 18 years. Sexual and gender-based violence was also a significant contributing factor to the acceptability of child marriage. In societies where girls are not valued the same as boys, violence and abuse is more likely. On the other hand, SGBV is also a negative impact of child marriage. Women who were married as children were more likely to experience violence and abuse compared to those married as adults.

To protect children’ rights particularly girls, there is a need to combat child marriage by developing interventions and policies to prevent children from marrying and protect those who do marry early from violence and abuse. There is also a need to ensure that all women have the resources and support to leave abusive relationships. Sexual and reproductive health education is also needed for parents and adolescents to increase their knowledge on the issues and improve their behaviors. As Indonesia has increased the minimum age of marriage for women, it could support the child marriage prevention program in national and subnational level.

Declarations

Acknowledgements

We thank to Tulodo team (Muslimah Nur Islami, Juliati Ng, Dimas B. Prasetyo, Dwi Wahyuni, Ajrina Zienitta Bakhri) and UNICEF Indonesia (Reza Hendrawan, Annisa Elok Budiyani, Amelia Tristiana, Hendriyadi Daeng Sila, Hengky Widjaja, and Amanda Bissex), enumerators, local government, LPP Bone, Yayasan Karampuang, Yayasan LIBU Perempuan, community leaders, religious leaders, religious organisations, NGOs, other UNICEF partners, and all study participants in Bone, South Sulawesi.

Authors’ contributions

The first authors drafted the report, which all authors reviewed and approved. All contributions, including research plans, data analysis, and research reports, were made by Tulodo Indonesia. Heribertus Rinto Wibowo and Nicholas J. Goodwin designed the study. Emilie Minnick, Derry Fahrizal Ulum, and Tanti Kosmiyati Kostaman supervised the study. Ridwan, Ratnakanya N. Hadyani, Ade Ayu Kartika Sari Rezki, Muliani Ratnaningsih collected and organized data. Muliani Ratnaningsih analyzed and interpreted the results. Sitti Nur Faizah analyzed validity and reliability test. Heribertus R. Wibowo and Muliani Ratnaningsih wrote the draft. All authors read and approved the final manuscript.

Funding

This project was supported by UNICEF and UNFPA in partnership with the Indonesian Government, and the Canadian Government launched the BERANI (Better Reproductive Health and Rights for All in Indonesia) in 2018. UNICEF and Tulodo have commercial contracts (Contract Number: 43270477).

Supplementary Information

The online version contains supplementary material for calculation and scoring data of Child Marriage Acceptability Index in this study available at [http://bit.ly/Calculation-CMAI-Tulodo](http://bit.ly/Calculation-CMAI-Tulodo)

Ethics approval and consent to participate

Study design and data analysis have been reviewed and approved by the University of Indonesia (Ethical approval number: 256/UN.2.F10/PPM.00.02/2019)

Consent for publication

Not applicable.
Competing interests

The authors declare that they have no competing interests. The authors whose names are listed immediately below certify that they have no affiliations with or involvement in any organisation or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript. Nicholas J. Goodwin has a commercial contract between UNICEF and Tulodo.

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