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THE PRACTICE OF CHILD MARRIAGE: A PROFILE AND POLICY ADVOCACY FOR INDONESIAN GOVERNMENT

Praktyka małżeństw wśród dzieci: profil i polityka rządu Indonezji

Abstract: Child marriage is one of the more frequent social problems in developing countries, especially in Indonesia; the government is hardly concerned about this and relates it to population control. This has the potential to escalate into a serious problem that will symmetrically affect the economy if the number of child marriages continues to increase. This study aimed to apply a profile analysis approach to measure the significant difference and to understand the characteristics of child marriages in each Indonesian province. The country is divided into four regions based on the main development area over 4 years from 2016 to 2019. The findings from the parallel hypothetical test suggest that the child marriage profile from each region is not parallel, and each region has its unique characteristics. Therefore, appropriate policies should be introduced separately for each region, such as enhanced education quality, social assistance and protection programs for children, social participation models, and collaborative governance-based city/village programs. The most important conclusions: policy advocacy to reduce the practice of child marriage for governments everywhere, including Indonesia is carried out through good planning and implementation of child marriage prevention policies will increase children's productivity for their future lives.

Key words: Child Marriage, Profile, Multivariate of Variance, Policy Advocacy, Good Planning and Implementation

INTRODUCTION

Child marriage is a social problem that still occurs in Indonesia. Child marriage in the change and development of official regulations in Indonesia, child marriage in question is, children under the age of 19 years marrying (Tabroni *et al.* 2021). Child marriage occurs at the intersection of two hierarchies: gender and age. Women are always in the position of the least power; In the worst-case scenario, they are without power and generally have to surrender to men. On the other hand, in the age hierarchy as teenagers, they must obey their parents and family or older members of society (Grijns, Horii 2018). R.B. Vogelstein (2013) states that cases of child marriage also indicate one of the slowdowns in the economic growth in a region. Child marriage has a negative impact on education levels, and in the long-term is a risk to children's health (predominantly females) (Jensen, Thornton 2003). M. Arthur *et al.* (2017) stated in their empirical research that the high rate of child marriage in many countries indicates various views on the definition of childhood, and that the number of underage girls who are forced to marry is much higher than that of boys.

UNICEF (2020) data report that several factors are related closely to the practice of child marriage, including level of income, culture, health, education, social protection, and employment. Several of these factors simultaneously act as the driving force and as a protection against the practice of child marriage, as long as several factors are used with the right approach.

This research consist in mapping child marriages with regards to profile analysis based on priority areas of development planning in Indonesia. The development of main regions is one of the ways in which the government can achieve a successful implementation of a development program. Based on the Ministry of National Development Planning (2018), Regional development priorities are aimed at economic growth and equitable distribution of development activities themselves.

The analysis profile based on the division of this area hopes to identify the characteristics of child marriage in each development planning area, so that policy recommendations can be specific to each region. In addition, statistical analyses to map characteristic profiles with multiple groups can apply multivariate analysis of variance (MANOVA) (Huberty, Olejnik 2005; Johnson, Wichern 2002; Morrison 1976; Timm 2002). R.C. Da Silva *et al.* (2015) used MANOVA to analyze the characteristics of two population groups: the millennial generation and the X generation. They found that the personalities between the two groups of students differed significantly. Furthermore, P.A. Lowe *et al.* (2003) found a significant difference between profile variations for performance on memory tests by gender; in particular, they revealed relative strengths for women on verbal tasks and men on spatial tasks.

METHOD AND PROCEDURES

To conduct profile analysis, we applied some procedures before identifying possible similarities within the treatment effects. Some assumptions had to be satisfied before conducting profile analysis. First, GEP Box (1949) was introduced through Box's M test to check the homogeneity assumption of variance–covariance matrices. The null hypothesis was rejected if the data from all groups had common variance–covariance matrices, called as heterogeneous. The null hypothesis is as follows:

$$H_0 = \Sigma_1 = \Sigma_2 = \Sigma_3 = 0$$

The next step was to check the data distribution, of which the multivariate data had to be distributed normally for each group, by using the Shapiro-Wilk's test for univariate normality and Mardia's skewness and kurtosis test for multivariate normality. The null hypothesis is given as follows:

$$H_0 = \epsilon \sim N_4(0, \Sigma)$$

Assuming that compound symmetry was not met, the repeated measurement of MANOVA was then applied (Timm 1975). It was naturally chosen as it was the most appropriate to design the sort of complete random data across time-dependent and multiple dependent variables (Tabachnick, Fidell 2019). In this study, we assumed E_{abc}, $a = 1,2, \ldots, r$; $b = 1,2, \ldots, p_i$; $c = 1,2, \ldots, y$ as the response in a repeated measurement, where a is the main development region in Indonesia; b is the number of provinces included in each region; c is the dependent variable of the year; r represents the four main development regions; p_i = the total number of provinces in the b-th region; and y = four year-groups.

Provided a subject is in the a-th region and b-th province, and in the y-th year-group, its mean response is:

$$E_{abc]} = [e_{ab1}, e_{ab2}, \ldots, e_{aby}] \tag{1}$$

Equation (1) implies the response vector for the b-th province within the a-th region, and

$$\bar{E}_{abc} = [\bar{e}_{a1}, \bar{e}_{a2}, \ldots, \bar{e}_{ay}] \tag{2}$$

Equation (2) implies the mean response vector for the a-th region group. T.W. Anderson (2017) argued that profile analysis provides tests that have more specific hypothesis than the standard hypothesis of

$$H_0 = \mu_1 = \mu_2 = \mu_g$$

This is because it can be developed by considering the *c x 1* mean vector as the profile for each group. M. Usman *et al.*. (2013) stated that for a greater understanding in profile analysis, some hypothetical tests must be constructed with the condition of accepted hypothesis from the previous hypothesis before conducting the next hypothesis. A.G. Sabbag (2019) specified three main basic questions that should be asked for profile analysis in groups, which are as follows:
1. Are the groups parallel?
2. Are the groups coincidental?
3. Are the groups horizontal?

Should any of these questions have "no" as an answer, there would be a significant effect. Therefore, we can develop three hypotheses from these questions, as follows.
- H_{01} = The r region profile is in parallel form.

Parallel form means that each profile has significant similarities among groups, and it is considered as the main test in profile analysis. The subtraction of the segment matrix from the group mean for each individual results in the within-group variance, whereas the subtraction of each group mean segment matrix from the grand mean segment matrix results in the between-group variance. If the null hypothesis is not rejected, then it can go through to the second hypothesis.
- H_{02} = The profiles have equal levels, with the condition of a parallel profile.

This is simply mathematically by measuring the relative contributions between groups and within groups to the sum of squared residuals. If the group levels are significantly different, then the coincident null hypothesis is rejected.
- H_{03} = The profiles experience flatness.

The horizontal null hypothesis is measured if the multiple segments in the profile are zero; hence, the slope is zero and the profile is flat. If the line is not flat, each segment varies significantly then there is a main effect in the group.

In their empirical study, R. Khattree and D.N. Naik (2000) argued that at least four multivariate tests can be applied to test parallel, coincident, and horizontal profiles, which are Wilks' lambda, Pillai's trace, Hotelling–Lawley trace, and Roy's greatest root. We rejected the null hypothesis if the probability values of all the tests were less than the alpha level of 5%, or if the F statistics exceed the

critical value. If only the first hypothesis is the region of rejection, then the last two hypothetical tests were not conducted as they were considered meaningless (Usman *et al.* 2013).

RESULTS AND DISCUSSION

Data Analyses and Results

Data on child marriages in Indonesia over the last 4 years were gathered from Badan Perencanaan Pembangunan Nasional (BAPPENAS). Data were obtained from 34 provinces, divided into four regions based on the main development area. Region A consists of five provinces including Aceh, North Sumatra, West Sumatra, Riau and Kepulauan Riau; region B has 11 provinces: Jambi, South Sumatra, Bengkulu, Kepulauan Bangka Belitung, Lampung, Banten, Jakarta, West Java, Central Java, Yogyakarta and West Kalimantan; region C includes six provinces of East Java, Bali, Central Kalimantan, North Kalimantan, East Kalimantan and South Kalimantan; and region D consists of 12 provinces: West Nusa Tenggara, East Nusa Tenggara, West Sulawesi, South Sulawesi, Southeast Sulawesi, Central Sulawesi, Gorontalo, North Sulawesi, Maluku, North Maluku, Papua and West Papua. The under-age-marriage population is divided into four year-groups: year 1 (2016), year 2 (2017), year 3 (2018), and year 4 (2019).

Using SAS 9.4 software, we first conducted the test of MANOVA criteria to measure any differences among the dependent variables, as shown in Table 1.

Table 1. MANOVA Test Criteria
Tabela 1. MANOVA – wartości współczynników

Statistic / Statystyka	Value / Wartość	F-value / Wartość F	Num DF / Efekt DF	Den DF/ Błąd DF	P-value / poziom istotności
Wilks' lambda / Lambda Wilksa	0.24154796	4.25	12	71.727	<.0001
Pillai's trace / Ślad Pillai	0.91363424	3.17	12	87	.0009
Hotelling-Lawley trace / Ślad Hotelling-Lawley	2.51056700	5.48	12	43.121	<.0001
Roy's greatest root / Największy pierwiastek Roya	2.23774099	16.22	4	29	<.0001

Source: authors' elaboration
Źródło: opracowanie własne

Table 1 measures statistically that all four dependent variables in a group have to reject the null hypothesis as they have a probability value less than 0.05. In other words, there are one or more differences among the four mean vectors for the four groups.

With the significant difference in mean vectors for all the multivariate groups, the next procedure was to ensure homogeneity assumption. The discriminant procedure is shown in Table 2 as follows.

As the chi-squared probability is 0.4187, which is more than the significant value of 5%, Box's M test can be said to have a common variance–covariance matrix for all groups; hence, the assumption is not violated.

The next procedure to be satisfied was the normality test. Table 3 shows the Shapiro-Wilk and Mardia skewness and kurtosis tests to check the normal distribution among the groups.

Table 3 indicates that for univariate normality tests shown in the test statistics of the Shapiro-Wilk W for equations r1 to r4, the data are normally distributed. In addition, for multivariate normality

Table 2. Test Homogeneity of the Within-Covariance Matrix
Tabela 2. Test jednorodności macierzy kowariancji

Chi-square / Chi-kwadrat	DF	P-value / poziom istotności
30.932852	30	0.4187

Source: authors' elaboration
Źródło: opracowanie własne

Table 3. Normality Test
Tabela 3. Testy normalności rozkładu

Equation / Równanie	Test statistic / Test	Value / Wartość	Prob / Prawdop.
r1	Shapiro-Wilk W	0.96	0.3082
r2	Shapiro-Wilk W	0.96	0.2077
r3	Shapiro-Wilk W	0.97	0.6108
r4	Shapiro-Wilk W	0.96	0.2372
System	Mardia skewness / test skośności Mardia	20.98	0.3981
	Mardia kurtosis / test kurtozy Mardia	−0.77	0.4399
	Henze-Zirkler T	0.64	0.8027

Source: authors' elaboration
Źródło: opracowanie własne

tests, indicated by Mardia's skewness and kurtosis tests as well as the Henze-Zirkler T-test statistic, the data are normally distributed. To confirm this statistical test, the multivariate normality can be assessed graphically.

Figure 1 indicates that each pair of residual vectors for the bivariate normality test has a strong positive relationship, or if one residual vector increases, another residual vector will increase. The further graphical measurement considered the histogram of each vector of the residuals along with its corresponding QQ-plot.

Figure 2 shows clearly that all four residual vectors have a normal distribution and a strong correlation in normal quantiles.

Furthermore, once the assumptions were satisfied, we tested the overall treatment effect. The output of the MANOVA test criteria in Table 1, with an average overall test, showed a p-value of 0.001, and was used to test the null hypothesis of $H_0 = \mu_1 = \mu_2 = \mu_g$; it referred to rejection, and thus indicated that at least one of the four regions has a significant impact on child marriage.

After several procedural tests were carried out using MANOVA, it would be necessary to deepen the profile analysis, therefore the main question needs to be answered: whether the groups in the group are equal or not. Table 4 shows that the four statistical measurement tests have a significance value of less than 0.05; therefore, we reject the null hypothesis and conclude that the early marriage profile does not have a parallel profile in the year region group. Figure 3 supports the statistical results, as the plots for the cohort profiles of early marriage at 4 years for the four regions are not parallel.

Figure 3 reveals that region C, shown by the red line, has the highest mean rate of early marriages over the years, whereas region A, shown by the green line, has the lowest mean value. Meanwhile, regions B and D have the second and third mean rates, respectively.
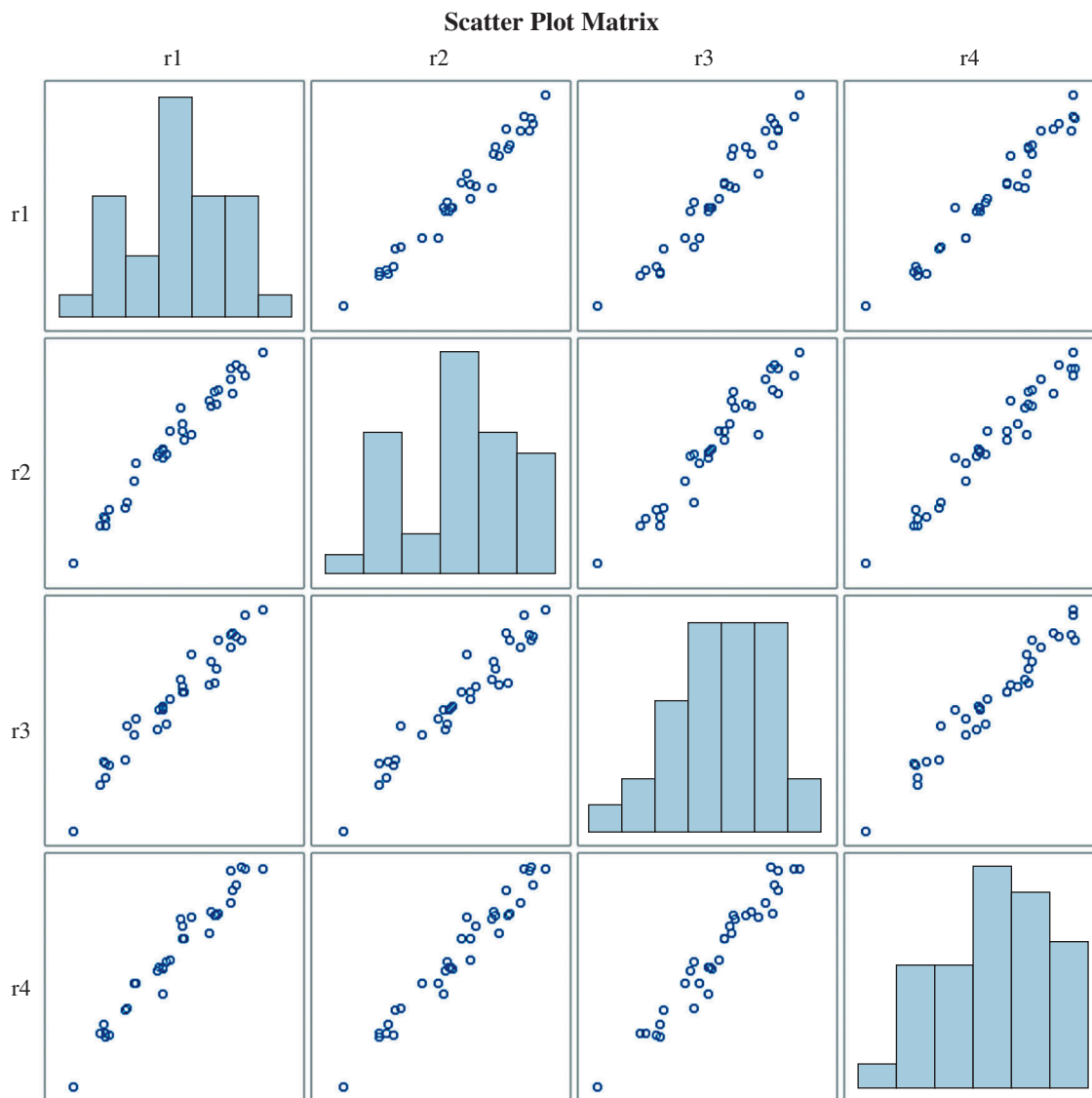
Scatter Plot Matrix

Fig. **1**. Scatter Plots for Pairs of Residual Vectors
Source: authors' elaboration
Ryc. **1**. Histogramy i wykresy rozrzutu reszt cząstkowych
Źródło: opracowanie własne

DISCUSSION

The results of data processing in general show that each region has a significant difference or different characteristics. The differences in these characteristics indicate the need for specific treatments of policy proposals for each region. The development of main regions is used as an approach to accelerate growth and regional equity, by dividing 4 regional cluster areas in Indonesia, based on the location of the region as a collection of smaller parts of the region with all the root causes and their respective potentials. Different policy defenses are designed to accommodate the diversity of achievements of regional groupings, this ensures that regional activities have adequate leverage to reduce child marriage rates (Ministry of National Development Planning 2018; Keban 2019).
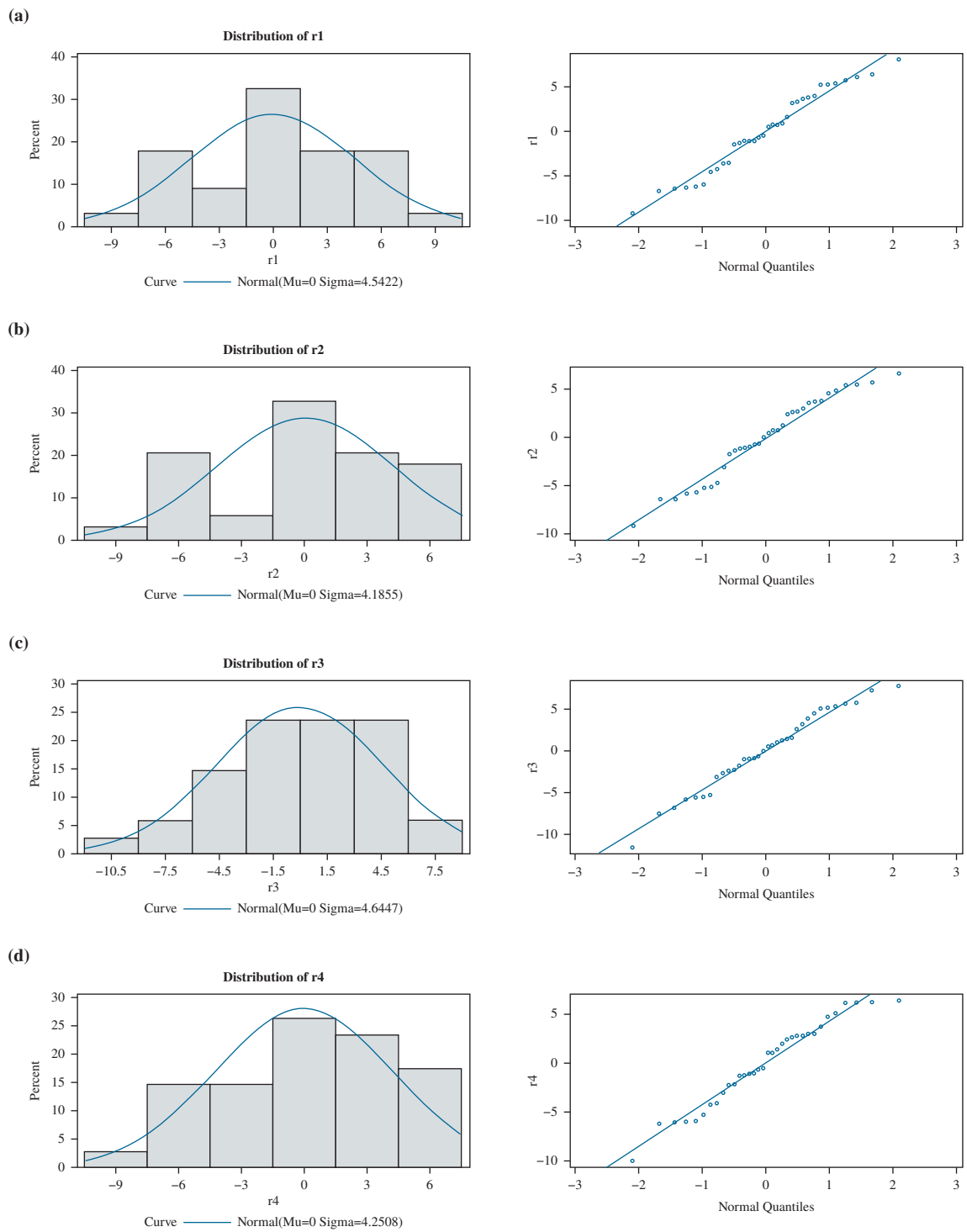
Fig. **2**. Distribution Histogram and Probability Plots for (a) r1; (b) r2; (c) r3; and (d) r4
Source: authors' elaboration
Ryc. **2**. Histogramy i wykresy prawdopodobieństwa dla (a) r1; (b) r2; (c) r3; i (d) r4
Źródło: opracowanie własne

**Table 4**. Parallel Profile Tests
Tabela 4. Testy równoległe

Statistic / Statystyka	Value / Wartość	F-value / Wartość F	Num DF / Efekt DF	Den DF / Błąd DF	Pr > F
Wilks' lambda / Lambda Wilksa	0.28688953	5.09	9	68.295	<.0001
Pillai's trace / Ślad Pillai	0.76752225	3.44	9	90	.0011
Hotelling-Lawley trace / Ślad Hotelling-Lawley	2.29601400	6.97	9	40.933	<.0001
Roy's greatest root / Największy pierwiastek Roya	2.21021718	22.10	3	30	<.0001

Note: The F statistics for Roy's greatest root is an upper bound.
Uwaga: Wartość F dla największego pierwiastka Roya to górna granica.

Source: authors' elaboration
Źródło: opracowanie własne
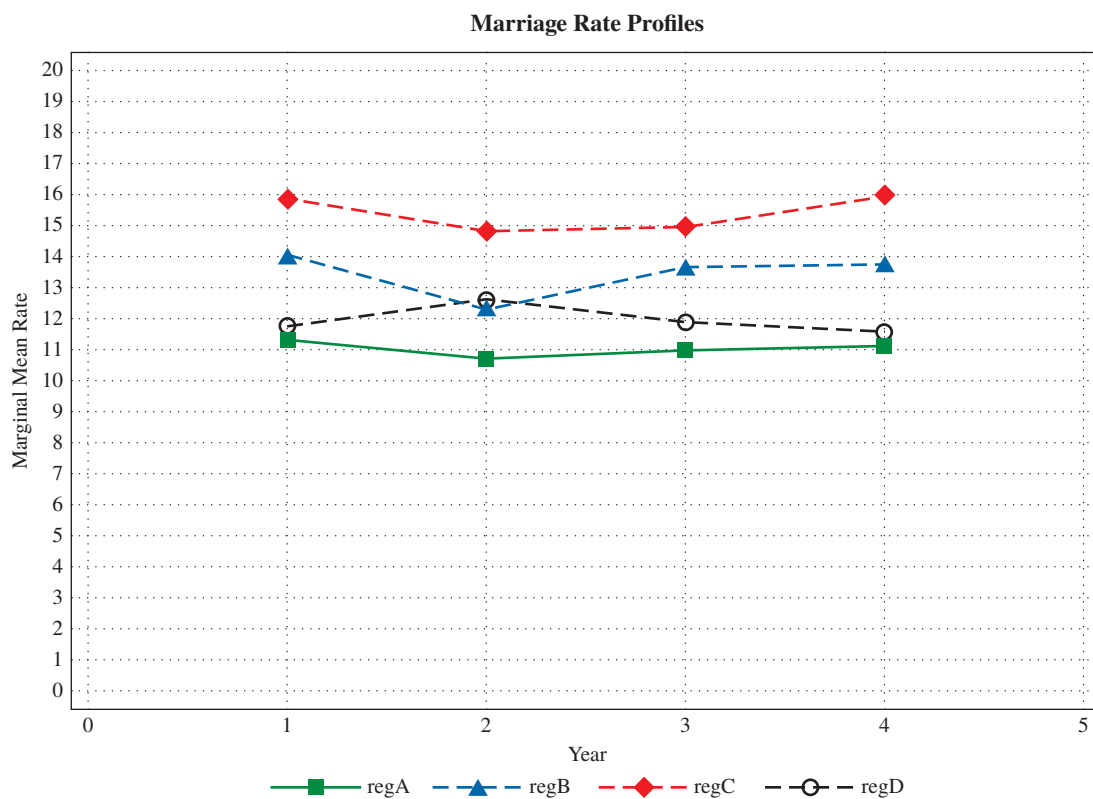
Fig. 3. Region Group Profiles for Marriage Rate Profiles
Source: authors' elaboration
Ryc. 3. Charakterystyki regionów dla wskaźników zawierania małżeństw
Źródło: opracowanie własne

Figure 3 reveals the order of child marriage cases according to the division of main development programs as follows: region C has the highest average number of cases, followed by regions B, D, and A. The trend of cases in each region seems to be unique. The trend fluctuated in region C over the

years. Meanwhile, trends in regions B and D converged only at the second year; however, for the rest of the years, the trends were as in the initial year of data. The trend in region A showed that the cases that occurred every year had an average value that was relatively the same as the highest number of child marriage cases. The presumption of the root of the problem was first used before proposing policies to deal with child marriage cases, as L. Akoglu *et al.* (2015) argued that mapping with suspicion will provide an anomaly of accuracy in the analyses results.

Several studies describe the presumption of the root of the problem of child marriage, including the education factors (Mim 2017; Gaston 2018), economic factors (Mitra *et al.* 2020), cultural/traditional and religious factors (Ogbonna *et al.* 2021), factors of residence and disaster situation (Dewi, Dartanto 2018). Another study strengthens the impact of child marriage on education, health and labor participation (Parsons *et al.* 2015; Delprato *et al.* 2017; Alfred *et al.* 2020; Iustitiani, Ajisuksmo 2018).

In Region C, which has the highest average number of cases of child marriage, is suspected that the root cause of the large number of child marriages is the low access to education services, in particular educational services that support knowledge of sexual and reproductive health. Several relevant studies were carried out, including: A.A. Ramly *et al.* (2020) has conducted a survey based on several regions in Region C, found the fact that 59% of respondents did not know the policies/regulations related to child marriage, especially with regard to the formal age of a child at least 19 years old who are allowed to marry, such as Law Number 16 of 2019 concerning Marriage, and consider marriage children as something that is commonly done. L. Rumble *et al.* (2018) and C.C. Ogbonna *et al.* (2021) illustrates that cultural, religious and economic factors tend to be more dominant in many cases found in some Region C areas, for example to avoid adultery, the occurrence of child and adolescent pregnancies, or to protect the family's good name. D. Candraningrum *et al.* (2016) found that some of the factors driving child marriage are discussion and socialization of sexuality knowledge from parents and society in general to children is considered a taboo subject. Parents and the community tend to be conservative, so that they consider the discussion of social health and reproductive rights (SHRR) an act that violates social norms. The study of M. Irani and R.L. Roudsari (2019), explained his findings that reproductive health services for children and adolescents were found to still have challenges due to limited access to contraception for the unmarried as stated in 2 regulations in Indonesia, namely Law Number 52 of 2009 concerning Population Development and Family Development and Law Number 36 of 2009 concerning Health. All children and adolescents need to have guaranteed information and access to contraception. The Health Law has guaranteed the right of children to obtain information on sexual and reproductive health, but it has not been used properly by parents and the community, so that children and adolescents are less able to access and have minimal information about health and reproduction. M.E. Greene and E. Stiefvater (2019) stated that stated that during education they often did not discuss gender norms, human rights, and power relations in these relationships. As it is now it is "the problems" that condition reflects the systemic problems of education, information dissemination and policy socialization that need to be improved. Rarely, the coverage of quality education services is also very important at the age of children.

Region B areas consists of 11 provinces as said before. It was found that the root of the problem was the high poverty rate. Some of the studies conducted, e.g. Q.T. Wodon *et al.* (2017) see the link between child marriage and economic status which can be seen in housing conditions and distribution of household expenditures. there are several studies that become reinforcement carried out, including L.P.R.K. Dewi and T. Dartanto (2018) identified several previous studies conducted by UNFPA in 2012, UNICEF and UNFPA in 2018, showing that poverty is the main driver of child marriage among women in developing countries, including Indonesia. Child marriages often occur with parents who want to improve the family's economic welfare. For poor households, most girls are considered an economic burden and marriage is considered a solution to escape poverty. The research from P. Paul (2019) and J. Parsons *et al.* (2015) shows that poverty is one of the drivers of child marriage, but not the only cause. Child marriage often occurs due to several reasons, such as poverty, poor access to formal

education and lack of parenting capacity. Previously, these situations were seen as separate matters and therefore the program was not implemented comprehensively. The proposed policy solution for region B is to increase the capacity of primary caregivers for children, and efforts to strengthen the child welfare system are also important, for example, social assistance and protection programs. The impacts of child marriage will be experienced not only by the children who are married off early but also by children born of such marriages, and this has the potential to create intergenerational poverty.

In Region D consists of 12 provinces, the probability of the root of the problem is low health awareness level.

The results of research conducted in region D show that most of the causes of child marriage practices are due to low knowledge about reproductive health and dating styles which have a high risk of teenage pregnancy. The studies conducted by L. Rumble *et al.* (2018) and D. Candraningrum *et al.* (2016) explained that after finding out that their child was having a teenage pregnancy, most parents chose to marry off their child. Child marriage is carried out for the following reasons: (1) a form of request for moral responsibility from the child's spouse, and (2) saving the dignity of the family.

The proposed recommendation is to implement a social participation model for all age levels through community forums, strengthen health awareness and prevent child marriage by means of minimum age of marriage is 19 years or more in the future (Duadji, Tresiana 2018a; Ogbonna *et al.* 2021). Several best practices carried out both in Indonesia and other countries in the form of knowledge sharing programs and public awareness campaigns in collaboration with the media, community activists, children, young people, and local governments are priority recommendations (Plan Indonesia 2021; Rumble *et al.* 2018; Ogbonna *et al.* 2021). Forming child protection groups down to the village level can be done by strengthening the capacity of social change agents, by providing life skills, education and information regarding delaying the age of child marriage, which is at least 19 years of age, has implications for reducing the number of child marriages, and strengthening the role of their peer group (Duadji, Tresiana 2021).

Lastly, in region A, the number of cases tends to average every year, and strengthening the policy of the laws and regulations is highly recommended. As N. Duadji and N. Tresiana's (2018b) empirical study showed, This means that the collaborative government-based city program is the right policy and can be developed as an anticipatory measure to reduce the number of child marriages.

In general, The policy proposals are the policy implementation of (1) Law No. 16/2019 concerning amendments to Law No. 1/1974, about marriage, which states that the minimum age of marriage for women be increased from 16 to 19 years; (2) Regulation of the Supreme Court Number 1 of 2019 concerning the Guidelines for adjudicating applications for marriage dispensation; and (3) the role of parents and the community is regulated in the Child Protection Act Law No. 35 of 2014, which stipulates that parents and the community are obliged to prevent child marriages.

N. Duadji and N. Tresiana's (2018b) empirical study showed several national policy initiatives and the synergy of regional development planning in reducing the practice of child marriage that are also part of the policy proposals including: the Indonesian National Development Planning Agency, which strengthens national development planning, the Indonesian Ministry of Women's Empowerment and Child Protection through the integration of child marriage issues into program indicators, Child Friendly City initiated a national campaign to stop child marriage, the Supreme Court tightened requirements for child marriage through national regulations, at the regional level in the form of various regulations in the form of regional head regulations and circulars, to the village level in the form of Village Regulations.

Thus, the implementation and planning of good child marriage prevention policies can increase their knowledge of reproductive health, sexual understanding and productivity for a better life and future.

CONCLUSION

Child marriage has been a major issue in the world, including in Indonesia. As a developing country, Indonesia finds this issue as one of priorities to be solved because it can affect the country's economic growth. The Indonesian government has determined the four main regions of development planning to enhance not only the economy but also social welfare. This study aimed to classify and analyze the characteristic profiles of each region for their respective number of child marriages by implementing a profile analysis approach. The results of the hypothesis test show that there are significant differences in child marriage in each region because the regions are not parallel.

Referring to the results of hypothesis testing about the differences in cases of child marriage in each region, the handling of it certainly requires different approaches and actions as a form of implementation of the national regulation on child marriage. Each region has a different root cause, of course requiring different actions. In region C, with the highest mean number of child marriages, enhancing the quality of education is needed the most. Social assistance and protection programs for children are proposed in region B, whereas a social participation model to increase the health awareness of the community, particularly reproductive health, is recommended in region C. Finally, in region D, a collaborative governance-based city program is suggested to strengthen the communities' knowledge of health (reproductive health) regulations.

Some levels for the effectiveness of policy advocacy to reduce the practice of child marriage for the government are: (a) children need to get education, knowledge and socialization about reproductive health, sex and parental access and openness can change mindsets of reproductive health rights (SRHR), gender equality and youth participation. This can be done through: interventions from the family, community, and government in changing social norms to support gender equality and reject child marriage; socialization to change the mindset of SRHR; strengthening regional and community based child protection groups; introduction of comprehensive and inclusive sexual and reproductive health education from an early age; children's participation in campaigns and advocacy; (b) quality education and health services for all children, especially for children who are more vulnerable. This is done through: Strengthening the 12-Year Minimum Learning Program for Children so that they have greater opportunities to develop themselves and find the skills needed to get a decent job; promotion of lifelong learning education and support for sound decision making; inclusive health and education services for all children; (c) integrating child protection approaches, strengthening the capacity of primary caregivers for children, and strengthening the child welfare system in social assistance and protection programs; (d) encouraging the implementation of Amendments to Law No. 1 of 1974 by ensuring that the implementation of policies is carried out properly, especially increasing the minimum age of marriage from 16 to 19 years.

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