



## **Determinant Factors Of Contraceptive Method Choice In Central Java (Analysis of 2017 IDHS Data)**

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### **Abstract**

The variable contributing to an increase in the maternal mortality rate (MMR) is 4T, which stands for too old, too young, too near, and too many. By using contraceptives, the family planning program may be able to avoid 33% of MMR if it is properly run. The goal of this study is to identify the determinants (mother's age, level of education, economic status, number of children, site of living, and health insurance) that affect women's decision to use contraceptives, particularly in Central Java. This observational study, which employed data from the 2017 IDHS, was conducted. Cross-sectional data collection and Pearson product-moment bivariate test. The research sample was taken from the study population using the total sampling, a total of 3,645 data. The study's findings indicate that there is a relationship between a mother's age, education level, type of home, ownership of health insurance, and the form of contraception she chooses for herself and her children in the Central Java Province. Economic position is the one that has the most influence, and health insurance ownership is the factor that has the least impact.

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### **Introduction**

The risk of 4 is one of the elements influencing the rise in the rate of maternal mortality. The risk of 4 consists of too many (more than two) children, too young to give birth (under the age of 21), too elderly to give birth (above 35), and too close a birth interval of less than three years. According to data showed that 33% of all maternal deaths are caused by moms who were under 20 or over 35 when they gave birth; therefore, if the family planning program is effectively administered, it may be able to prevent 33% of maternal deaths by using contraception. According to BKKBN, 67.6% of couples of reproductive age participated actively in family planning in 2020. Using information from the 2019 Indonesian Family Profile, we can see that this amount has increased by 63.31% since 2019. In Central Java, 64.9% of moms achieved contraceptive participation in 2020. This percentage still falls short of Indonesia's average contraceptive use rate of 67.6% of participants (Kemenkes RI., 2021). If everyone had access to reliable family planning methods, 54 million unintended births, 79,000 maternal deaths, and 1.2 million cases of child mortality might have been avoided. (Ajayi et al., 2018).

Family planning is an attempt to control the number of children born, the spacing between them, the best age for having kids, and pregnancy through the promotion, protection, and support of reproductive

rights to achieve a quality family (UU Republik Indonesia Nomor 52 Tahun 2009 Tentang Perkembangan Kependudukan Dan Pembangunan Keluarga, 2009). In addition, family planning aims to improve the quality of communication, information, education, counseling, and services for those in need. It also aims to increase the participation and responsibility of men in family planning practices as well as the prevalence of breastfeeding to prevent pregnancy. The first of these alternatives is modern family planning, which includes procedures like tubectomy, vasectomy, implants, IUDs, pills, emergency contraception, male and female condoms, and intravaginal. There are other conventional family planning techniques, such as traditional family planning. Coitus interruptus, the calendar method or periodic abstinence, the standard day method, or the wearing of cycle bead bracelets are some of these techniques (Wijayanti, 2021).

In 2020, the majority of those who accepted the method of contraception picked the injectable technique (71.9%), followed by the pill method (19.4%). Both kinds of contraceptives are regarded as short-term procedures because of their efficiency. Consequently, it is less efficient than other forms of contraception at preventing conception and alternative forms of birth control. Every year, people follow this pattern, favoring short-acting contraceptive methods over long-acting ones. Compared to long-acting treatments (IUD, implant, MOW), short-acting approaches are more effective. (MOP, MOW, IUD, and implants) (Kemenkes RI., 2021) Research has been done to identify the variables that influence the choice and application of different contraceptive techniques. The variables used were age, employment position, education of women of childbearing age, number of children, participation in health insurance, and environmental factors, such as spouse support and social milieu. (Aryati et al., 2019; Ibad et al., 2021; Kaafi & Nurwahyuni, 2021). Researchers used six determining factors in this investigation, including maternal age, education level, family income, number of children, residence, and use of health insurance. Using data from the 2017 IDHS, this study intends to identify the factors that affect women's choice of contraceptive methods, particularly in Central Java.

## Methods

This observational study made use of information from the most recent Indonesian Demographic Health Survey (DHS) Program, which took place in 2017. After completing the processes outlined on the website, the data can be accessed on the DHS Program website. This survey, which is usually carried out once every five years, has the latest data available from 2017. A cross-sectional study approach was employed in this survey. Data for the SDKI was gathered door-to-door through direct interviews with respondents. Five thousand two hundred thirty-one citizens from the province of Central Java were included in the study.

The sampling technique employed in this study was total random sampling, which entails selecting a research sample from the complete population of data. Female respondents who used any form of contraception and who lived in Central Java were required to meet the inclusion criteria. Respondents who did not use birth control and had incomplete data were excluded from the study. Following the application of the inclusion and exclusion criteria, 3,645 appropriate data were collected. The sample consisted of 3,645 data in total.

The number of children, economic status, age, level of education, site of living, and use of health insurance are the independent variables in this study. The choice of contraception is the dependent variable. In this study, the Pearson Product Moment test was utilized for bivariate analysis and the frequency test for univariate analysis. The strength of the correlation between the variables in this study was assessed using the Pearson Product Moment test.

## Results

The findings of the univariate data analysis for the independent variables, including the economic status, number of children, mother's age, level of education, site of living, and use of health insurance, are shown in the following table. In addition to the outcomes of the univariate data analysis for the dependent variable, which is the choice of contraceptives:

**Table 1. Univariate Data Analysis**

Variable	f	%	Min	Max	Mean	Median
<b>Economic status</b>						
Poorest	369	10.8				
Poorer	826	22.7	Poorest	Richest	3.17	3.00
Middle	839	23.0				

Variable	f	%	Min	Max	Mean	Median
Richer	928	25.5				
Richest	656	18.0				
<b>Number of children</b>						
0 children	1	0.01				
1 children	444	12.2				
2 children	1672	45.9				
3 children	984	27.0	0	7	2.51	2.00
4 children	397	10.9				
5 children	87	2.4				
6 children	46	1.3				
7 children	14	0.4				
<b>Mother's age (y.o)</b>						
17-21	52	1.4				
22-26	227	6.2				
27-31	415	11.4				
32-36	712	19.6	17	49	38.10	39.00
37-41	891	24.5				
42-46	887	24.3				
47-51	461	12.6				
<b>Level of education</b>						
No education	37	1.0				
Incomplete primary	297	8.1				
Complete primary	1267	34.8	No	Higher	2.81	3.00
Incomplete Secondary	1062	29.1	education			
Complete secondary	699	19.2				
Higher	283	7.8				
<b>Site of living</b>						
Urban	1839	50.4	Urban	Rural	1.50	1.00
Rural	1806	49.6				
<b>Health assurance</b>						
No	1498	41.1	No	Yes	0.59	1.00
Yes	2147	58.9				
<b>Contraceptive choice</b>						
Traditional method	384	10.5	Traditional	Modern	2.89	3.00
Modern method	3261	89.5				

Table 1 shows that respondents' average economic status is middle-class, that respondents generally have three children, that respondents are usually around 38 years old, that respondents generally have health insurance, that respondents generally reside in rural areas, that respondents generally have not completed their secondary schooling, and that respondents generally use modern contraception. The following table shows the findings of the bivariate data analysis between the dependent variable and the six independent variables:

**Table 2. Bivariate Data Analysis**

Variables	Statistic Test	Result
Economic status with choice of contraceptives	Pearson Correlation	-0.114
	Sig. (2 Tailed)	0.000
	N	3654
Number of children with choice of contraceptives	Pearson Correlation	-0.073
	Sig. (2 Tailed)	0.000
	N	3654
Mother's age with choice of contraceptives	Pearson Correlation	-0.084
	Sig. (2 Tailed)	0.000
	N	3654
Level of education with choice of contraceptives	Pearson Correlation	-0.104
	Sig. (2 Tailed)	0.000
	N	3654

Variables	Statistic Test	Result
Site of living with choice of contraceptives	Pearson Correlation	0.090
	Sig. (2 Tailed)	0.000
	N	3654
Health assurance with choice of contraceptives	Pearson Correlation	0.049
	Sig. (2 Tailed)	0.003
	N	3654

With a p-value of 0.000 and a correlation value of 0.114, the findings of the bivariate test in Table 2 demonstrate that there is a relationship between economic status and the choice of contraceptives. Additionally, a substantial connection (0.073) and a p-value of 0,000 are known to exist between the variable number of children and the choice of contraceptives. It is also known that the factors of mother's age, level of education, and site of living have an association with the choice of contraceptives (each p-value 0.000) with very high correlation levels (0.084; 0.104; and 0.090). A moderate correlation of 0.049 existed between the two variables of contraceptive choice and ownership of health insurance, with a p-value of 0.003.

## Discussion

The study's findings demonstrated that all independent factors had a relationship with the dependent variable (p-value 0.05). The findings of this study are consistent with research conducted in Kenya in 2023, which demonstrates that factors influencing the choice of contraceptive methods include maternal age, maternal education, economic level, and type of dwelling. DHS data from 2003, 2009, and 2014 were used in the study. According to the study's most recent data, from 2014, it was discovered that the majority of mothers who used contraceptives were between the ages of 20 and 24, had only completed elementary school, resided in rural areas, and belonged to upper socioeconomic classes. To help adolescent girls stay in school and complete their education to the desired level, it was stated that the findings of the Kenyan study are helpful for managers of adolescent reproductive health programs. These findings can also lead to initiatives to help minimize unwanted pregnancies among adolescent girls. (Kungu et al., 2020) This research should make clear that factors such as financial stability, the number of children, the mother's age, educational attainment, respondents' residency, and health insurance ownership impact the family's decision regarding contraceptives in the Central Java Province.

Research conducted in West Sulawesi Province in 2020 revealed that a mother's choice of contraceptive technique in the present and the future may be influenced by the family's economic status. According to the study, a family's economic situation is also indirectly related to their level of education. It makes sense that someone who can read well would also be better able to take in information. (Muslimin et al., 2020). The findings of the previous study are comparable to those of this one in the Central Java Province. Statistical analyses may demonstrate that family economic status has a very strong connection (p-value 0.000) and a negative relationship direction with a Pearson correlation of 0.114. This indicates that households with a high-income level favor the use of conventional contraceptives. This can occur because a family with a higher income feels like they can support more children.

With a p-value of 0.000, it is known that the variable number of children in this study (in the Central Java Province) correlates with the family's choice of contraceptives. These two variables have a strong, negatively skewed link with each other (Pearson correlation = 0.073). This demonstrates that traditional contraceptive techniques are more preferred by families with more children. Similar findings from earlier studies support those from this one. It is claimed that mothers who already have children prefer current contraceptive methods over traditional methods. Mothers are encouraged to utilize modern, safer contraceptive techniques because their families don't want any more kids. Mothers who do not desire more children tend to use contraception more often. (D'Souza et al., 2022; Kundu et al., 2022).

This study demonstrates a strong relationship (Pearson correlation of 0.84) between the variable selection of contraceptive methods and the variable measuring mother's age in the Central Java Province (p-value 0.000). The findings of this research are consistent with those of a study conducted in Zambia in 2020, which demonstrated that maternal age can affect the form of contraception used. Contraceptive use was more prevalent among younger mothers (15–39 years old) than among older mothers (40–49 years old). It was discovered that older mothers had begun to experience menopause, which could have an impact on their sexual activity; therefore, as they became older, they stopped using contraception. (Lasong et al., 2020). This is consistent with the statistical test results of the research study, which indicate that the test direction is negative, indicating that older mothers are more likely to select traditional contraceptive

methods. Traditional contraceptive techniques are less popular among young mothers who are still actively pursuing pregnancy because they are thought to be too prone to failure.

In a Bangladeshi study conducted in 2022, the education variable produced different findings. The study revealed no relationship between the choice of contraceptive methods and the education of moms or partners. Numerous studies among LMICs (Low-Middle Income Countries) in Asia and Africa demonstrate a rise in the demand for contemporary contraceptive techniques with women's greater educational standing, which frequently correlates with their desire for career planning and growth. (Kundu et al., 2022). According to the results of this study, the average respondent's level of education did not extend past junior high school, suggesting that it is still at a low level. However, the study found a link between the level of education variable and the type of contraception chosen in the Central Java Province. It was discovered that there was a very strong link between the variables of maternal level education and method of contraception preference, with a Pearson correlation value of 1.04. Based on the negative direction of the relationship, respondents with a lower level of education prefer modern contraceptive techniques. This might be a result of Indonesia's liberal use of contemporary contraceptives, which draws in more mothers.

The choice of contraceptive methods by mothers is correlated with the site of living variable in the Central Java Province. In this investigation, it was discovered that the p-value was 0.000 and that there was a positive relationship direction with a Pearson correlation of 0.090. This indicates a strong link between the residence variable and the relationship strength. The direction of the positive link indicates that persons who live in rural locations are more likely to choose modern contraceptive techniques. The site of living can affect the choice of contraception, according to earlier studies conducted in Ethiopia (Gebre & Edossa, 2020). Similar findings were found in an Indonesian study conducted in 2021's Bengkulu Province. In Bengkulu Province, the study discovered a connection between the kind of home and the preferred method of birth control. Geographically difficult places and distant human settlements are natural conditions that cannot be changed and require the provision of health service facilities. In Bengkulu Province, in particular, primary service programs like the adoption of family planning tools/methods that target the community must be successful in reducing and even eliminating the gap between rural and urban areas in access to health services. (Febriawati et al., 2021).

This study (in the Central Java Province) discovered a link between having health insurance and choosing a contraceptive technique. The link strength (Pearson correlation) is 0.049; the relationship direction is positive, and the p-value is 0,003. This indicates a modest level of link between the various forms of insurance ownership and the choice of contraceptive methods. The relationship between the two indicators indicates the direction that mothers who have health insurance choose to utilize conventional methods of contraception. This is due to a reduced price offered to those with health insurance, which is intended to promote the mother's interest in the contraceptive program. Similar findings from earlier studies suggest that the varying ownership of health insurance may influence the choice of long-term contraceptives. Women of reproductive age who have health insurance are reportedly 1,14 times more likely to utilize long-term contraception than women who do not. (Kaafi & Nurwahyuni, 2021).

The choice of contraceptives is known to be correlated with each independent variable in this research in the Central Java Province. If the data were sorted using the Pearson correlation value, economic status (Pearson correlation 0.114), level of education (Pearson correlation 0.104), site of living (Pearson correlation 0.090), mother's age (Pearson correlation 0.084), number of children (Pearson correlation 0.073) and health insurance ownership (Pearson correlation 0.049) are in the order of correlation strength from the strongest. The limitation of this study is that it does not specify each contraceptive method. In the next study, the researcher will conduct research based on each contraceptive method.

## Conclusion

The study's findings indicate that there is a relationship between a mother's age, education level, type of home, ownership of health insurance, and the form of contraception she chooses for herself and her children in the Central Java Province. Economic position has the most influence, and health insurance ownership has the least.

## Author Contributions

S.S.W.; methodology, validation, resources, writing—original draft preparation, writing—review and editing, project administration, and funding acquisition.

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## Institutional Review Board Statement

It is not applicable because the studies do not involve humans or animals.

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## Conflicts of Interest:

The authors declare no conflict of interest.

## Appendix

Table 1. Univariate data analysis

Table 2. Bivariate data analysis

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