

Research Article

Determinants of Contraceptive Use and Fertility in Buleleng District

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Abstract, Fertility is one of the key indicators in population dynamics, influenced by various factors. This study aims to analyze: 1) public perception of the knowledge, attitude, and practice (KAP) of Krama Bali family planning (KB); 2) the influence of education, employment status, and KAP of Krama Bali family planning on contraceptive use; 3) the influence of education, employment status, KAP of Krama Bali family planning, and contraceptive use on fertility; and 4) the role of contraceptive use in mediating the influence of education, employment status, and KAP of Krama Bali family planning on fertility. This research employs a quantitative approach with an associative design. The sample consists of 99 individuals, specifically married couples of reproductive age (40–45 years) in Buleleng District. The sampling techniques used include accidental sampling, snowball sampling, and purposive sampling. Data collection methods include observation, interviews, and in-depth interviews. The data analysis involves descriptive statistics, path analysis, and the Sobel test. The study results indicate: 1) Public perception of Krama Bali family planning is mostly positive, with most respondents understanding and accepting it. However, the practice of having four children, as recommended by Krama Bali family planning, is less common due to the risks of late-age pregnancy. 2) Education has a significant positive effect on contraceptive use, with employed respondents using contraceptives for a longer duration than unemployed respondents. Meanwhile, the KAP of Krama Bali family planning has a significant negative effect on contraceptive use. 3) Education and contraceptive use have a significant negative effect on fertility, with employed respondents having lower fertility than unemployed respondents. In contrast, the KAP of Krama Bali family planning has a significant positive effect on fertility. 4) Contraceptive use partially mediates the effects of education, employment status, and the KAP of Krama Bali family planning on fertility.

Keywords: Fertility, Contraception, Education, Employment, KAP Bali Krama KB

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1. Introduction

Population issues are very important for all countries because the population plays a role as both subject and object in development. Indonesia, as the fourth most populous archipelagic country in the world, faces the problem of high population growth. This affects the economy, policy, culture, education, environment, as well as exploration and costs of natural resources. In 2020, Indonesia had a population of 270,203,917 (Population Census, 2020). Population growth is influenced by three main factors: births (fertility), deaths (mortality), and migration. These three factors are dynamic aspects of demography that change the population structure. Fertility, which is the reproductive capacity of a population, is measured by the number of live births experienced by women. The higher the fertility, the higher the population growth rate. To support development and address population issues, one way that can be done is by controlling fertility. Kingsley Davis and Judith Blake, in their paper "The Social Structure and Fertility: An Analytic Framework" (1956), analyzed the social, economic, and cultural factors that influence fertility through "intermediate variables."

Table 1. Number of Live Births in Buleleng Regency Based on District and Gender 2023 (people)

Kecamatan	Laki-Laki	Perempuan	Total
Gerokgak	740	702	1.442
Seririt	477	445	922
Busungbiu	202	177	379
Banjar	489	495	984
Sukasada	665	592	1.257
Buleleng	1.095	1.128	2.223
Sawan	447	412	859
Kubutambahan	438	387	825
Tejakula	398	355	753
Total	4,951	4,693	9.644

Sumber : Satu Data Buleleng, 2024

Table 1 shows that the number of live births in Buleleng Regency based on gender in 2024 is quite high. Buleleng District has a high birth rate compared to other districts in Buleleng Regency, which is 2,223 people, while the lowest birth rate is in Busungbiu District, which is 379 people.

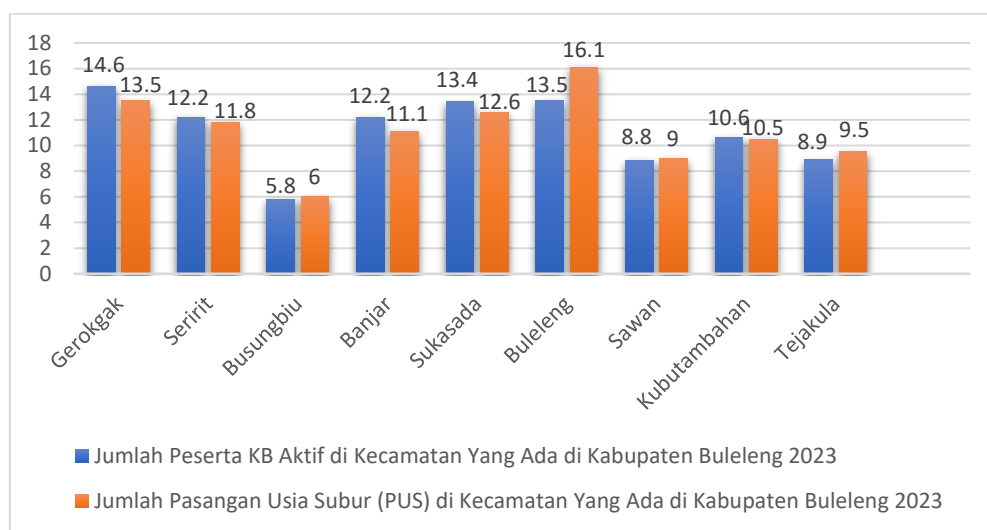
The level of parental education indirectly affects the fertility rate. According to Ansley Coale's theory, education has a strong influence on reducing fertility where education will facilitate the spread of new ideas and information (Wirasaba and Ayuningsasi, 2023). Women who spend more time on education tend to shorten the risky period of pregnancy because it involves long years of education. In addition, women with higher education are more likely to enter the labor market before marriage. Education can also increase women's knowledge about fertility and behavior during pregnancy. Women with higher education are generally more aware of the importance of planning the number of children they want, prefer to have few but quality children, and tend to postpone marriage to focus on education and career. Education also increases knowledge about the right age to plan a pregnancy. On the other hand, lack of higher education is often associated with early marriage and more teenage births, which have an impact on high and low fertility. Several studies, such as those conducted by Khotimah (2020) and Akmam (2002), show that education has a negative relationship with fertility rates, where the higher a person's education, the lower their fertility rate. Education gives women more autonomy in decision-making and access to resources, which ultimately affects fertility.

In addition to education, women's employment status also affects fertility rates. Women who work generally have lower fertility rates because they tend to delay having children or limit the number of children due to being busy and having limited time to care for children. Khotimah's (2020) research shows that the higher the participation of women in the workforce, the lower the fertility rate in ASEAN countries. Lim's (2021) research in South Korea also found that women's employment status had a negative impact on fertility, especially for women with precarious jobs who postponed or canceled pregnancies for economic reasons.

The Indonesian government's Family Planning (KB) program aims to regulate population growth by delaying pregnancy, regulating the spacing between pregnancies, and reducing fertility rates. This program reduces the risk of unwanted pregnancies and protects against infections such as HIV/AIDS (WHO, 2018). Since the start of the KB program, the average fertility rate has decreased from 5 children to 2 children per woman (BKKBN, 2019). This program must continue to run to keep fertility rates low and in line with development targets. The use of contraceptives, such as pills, injections, implants, IUDs, and condoms, plays a role in controlling fertility. The main objectives of the KB program are to improve the welfare of mothers and children, reduce maternal and infant mortality rates, and ensure a controlled population according to the family's economic

conditions. This program contributes to achieving the SDGs goals related to human resource quality and sustainable development, because controlled fertility supports stable economic growth.

Figure 1 shows the number of fertile age couples (PUS) and active family planning participants in Buleleng Regency in 2023. Buleleng District has the highest PUS, which is 16.1 percent and active family planning participants of 13.5 percent. This district also has the largest difference between active family planning participants and PUS compared to other districts in Buleleng Regency. Women who use contraception tend to have fewer children because they limit the number of children they want. Conversely, those who do not use contraception tend to have more children. Contraceptive use directly affects fertility. Research by Letamo and Letamo (2001) shows that in Botswana and Zimbabwe, the use of modern contraception contributed to a decrease in fertility.



Sumber :DP2KBP3A Kabupaten Buleleng dan Satu Data Buleleng, 2024

Figure 1. Number of Fertile Age Couples (PUS) and Active KB Participants in Buleleng Regency by District in 2023 (percent)

One of the Family Planning (KB) programs currently being discussed is culture-based KB, namely KB Krama Bali. This program was issued by the Governor of Bali through Instruction Number 1545 of 2019 to respect the reproductive rights of the Balinese people. KB Krama Bali prioritizes the preservation of local Balinese wisdom by maintaining names such as Gede/Putu, Made, Nyoman, and Ketut. Unlike the BKKBN KB program which limits the number of children to two, KB Krama Bali allows families to have more than two children, even four, while still regulating birth, spacing, and the ideal age for giving birth (Semandi and Marhaeni, 2023). However, this program raises concerns regarding cultural preservation, especially regarding the scarcity of names such as "Nyoman" and "Ketut," due to the decline in families having third or fourth children (Sarmita, 2019). Indirectly, KB Krama Bali affects fertility rates in Bali. Research by Meditriana Putra, et al (2022) shows that the implementation of KB Krama Bali has not been fully successful in Balinese society. This is due to economic, educational, and socio-cultural factors. In Banjarangkan Village, for example, many people feel that having four children requires high costs. In addition, many people do not fully understand the purpose of KB Krama Bali, with most considering it a program to have more than two children. If the community understands better, this instruction can be implemented well. The community's response to this instruction is very dependent on the characteristics of each individual. The objectives of this study are; 1) To analyze community perceptions of KAP KB Krama Bali in Buleleng District; 2) To analyze the influence of education, employment status, and KAP KB Krama Bali on the use of contraceptives in Buleleng District; 3) To analyze the influence of education, employment status, KAP KB Krama Bali, and the use of contraceptives on fertility in Buleleng District; 4) To analyze the role of contraceptive use in mediating the influence of education, employment status, and KAP KB Krama Bali on fertility in Buleleng District

2. RESEARCH METHODS

This study was designed with a quantitative approach in the form of associative with Buleleng District as the research location. The selection of the location was based on the highest percentage of birth rates. Education, employment status, KAP KB Krama Bali, use of contraceptives, and fertility are the objects of this study. The use of contraceptives (Y1) is measured by how long or all the time used by respondents in using contraceptives with a unit of months. Fertility (Y2) is measured by the number of children born alive by respondents to date. With the unit of measurement in people (souls). Education (X1) which is measured based on the level of formal education that the wife has taken, in this study is measured from the year of success or the length of formal education received by respondents so that the unit of measurement is years. Employment status (X2) wife's participation in the world of work which is measured from working or not working. KAP KB Krama Bali (X3) is measured through the perception of several indicators of Bali Governor's Instruction Number 1545 of 2019.

The data in this study can be in the form of quantitative data (in the form of numbers) such as education and qualitative data (not in the form of numbers) such as public perception of KAP KB Krama Bali. The data in this study were collected by researchers (primary data) such as Education and secondary data obtained from certain institutions such as TFR data from one Buleleng data. In this study, there were 19,604 PUS populations that were the focus of the study. Based on the Slovin formula, a sample of 99 PUS was obtained. The data collection method used observation, interview, and in-depth interview methods. The sampling technique was carried out by accidental sampling, snowball sampling, and purposive sampling. Data analysis techniques include descriptive statistics describing or describing the data that has been collected, path analysis, a statistical analysis technique used primarily to test the comparative strength of direct and indirect relationships between variables and used to test the first to sixth hypotheses, structural equations used as follows.

$$Y_1 = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \dots\dots\dots(1)$$

$$Y_2 = \beta_4 X_1 + \beta_5 X_2 + \beta_6 X_3 + \beta_7 Y_1 \dots\dots\dots (2)$$

Information:

- Y1 : Use of contraceptives
- Y2 : Fertility
- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$: regression coefficient of each variable
- X1 : Education
- X2 : Employment status
- X3 : KAP KB Krama Bali
- e : error

To test the significance of the role of Y1 in mediating the influence of X1, X2, and X3 on Y2, you can use the Sobel test using the following formula.

$$Z = \frac{a.b}{\sqrt{(b^2.s_a^2)+(a^2.s_b^2)} \dots\dots\dots(3)$$

Description:

- a : Coefficient of the influence of the independent variable on the mediator.
- b : Coefficient of the influence of the mediator on the dependent variable.
- Sa : Standard error of the coefficient a.
- Sb : Standard error of the coefficient b

3. RESULTS AND DISCUSSION

Respondents in this study were fertile couples aged 40–45 years, totaling 99 respondents in Buleleng District.

Table 2. Respondents by Education Level

No	Pendidikan	Jumlah Responden
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		Orang	Persentase (%)
1	Tidak Tamat SD	3	3,03
2	SD	34	34,34
3	SMP	42	42,42
4	SMA	16	16,16
5	Diploma	4	4,04
	Jumlah	99	100,00

Sumber : Data primer diolah, 2024

In Table 2, most respondents have a junior high school education level (SMP), while only a few continue to higher education. This indicates that the level of education in Buleleng District is still relatively low, where many people prefer to work directly to help the family economy rather than continue their education. The level of education of these respondents will provide an overview of the influence of education on the number of children born alive and on the use of contraceptives in Buleleng District.

Table 3. Respondents by Employment Status

No	Status Ketenagakerjaan	Jumlah Responden	
		Orang	Persentase (%)
1	Berkerja	49	49,49
2	Tidak Berkerja	50	50,51
	Jumlah	99	100,00

Sumber : Data primer diolah, 2024

Table 3 shows that the level of participation in the workforce in the research area is almost equal between those who work and those who do not work. Respondents who are employed in this study are dominated by informal workers and respondents who are un-employed choose to be housewives. The employment status of these respondents will show how employment status affects the use of contraceptives and the number of children born alive.

Table 4. Respondents According to Contraceptive Use (Month)

No	Penggunaan Alat Kontrasepsi	Jumlah Responden	
		Orang	Persentase (%)
1	< 30	28	28,28
2	30 - < 40	17	17,17
3	40 - < 50	14	14,14
4	≥ 51	40	40,40
	Jumlah	99	100,00

Sumber : Data primer diolah, 2024

In Table 4 overall, most respondents tend to use contraceptives in the long term, with the largest proportion in the group that uses more than 51 months. This reflects that the use of contraception in Buleleng District has likely become part of a habit or long-term need in family settings, although there are also respondents who have just started or only use contraception in the short term. The low duration of contraceptive use by respondents is due to the incompatibility of the method of using contraceptives and the side effects of using contraceptives such as the emergence of menstrual disorders, weight problems and other disorders.

Table 5. Respondents According to Fertility

No	Fertilitas	Jumlah Responden	
		Orang	Persentase (%)

1	1	3	3,03
2	2	21	21,21
3	3	30	30,30
4	≥ 4	45	45,45
Jumlah		99	100,00

Sumber : Data primer diolah, 2024

In Table 5, it can be seen that most respondents in Buleleng District have four or more children, while only a few respondents choose to have one child. This reflects the strong influence of customs in Balinese Hinduism, where having children is considered very important. Indirectly, the community has implemented the Balinese Krama KB. The number of children born alive will show how fertility is directly influenced

The questionnaire is a means of collecting data. To determine the feasibility and consistency of the questionnaire used, it is very important to test the validity of the instrument through validation and reliability tests. An instrument is considered valid when it meets the requirements of the Pearson correlation value > 0.3 (Sugiyono, p. 181) the instrument is reliable if it meets the requirements of the Cronbach alpha value > 0.70 (Ghozali, 2021, p.62). In Table 6, it can be seen that both requirements are met, so the questionnaire is valid and reliable.

Table 6. Validation Test and Reliability Test

Variabel	Indikator	Uji Validasi			Uji Reliabilitas	
		Koefisien Korelasi	Sig.	Keterangan	Cronbach Alpha	Keterangan
KAP KB	X3.1	0,872	0,000	Valid		
Krama Bali (X3)	X3.2	0,894	0,000	Valid	0,723	Real
	X3.3	0,675	0,000	Valid		bel

Sumber: Data primer diolah, 2024

Descriptive statistics present information on the characteristics of research variables, namely the number of samples, minimum value, maximum value, mean value, and standard deviation. The results of the study using descriptive analysis can be presented in the following table 6.

Table 7. Descriptive Statistics of Education, Contraceptive Use, and Fertility Variables

	Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
Pendidikan	99	2	13	8.27	2.519
Penggunaan Alat Kontrasepsi	99	12	96	51.60	25.194
Fertilitas	99	1	6	3.22	.943
Valid N (listwise)	99				

Sumber: Data primer diolah, 2024

Table 7 shows that the lowest level of education recorded was 2, indicating respondents who did not graduate from elementary school, while the highest level of education was 13, which can be interpreted as respondents with an education equivalent to a Diploma. The average level of education of respondents was 8.27, meaning that most respondents had an education equivalent to junior high school. In addition, the standard deviation of 2.519 indicates that there is quite a large diversity in the level of education of respondents. Data on the use of contraceptives shows the lowest use of contraceptives is 12 and the highest is 96. The average number of contraceptives used per respondent is 51.60. The

large standard deviation, which is 25.194, indicates that there is significant variation in the number of contraceptives used by respondents. The fertility rate of respondents shows the lowest value of 1 and the highest is 6. The average number of children per respondent is 3.22, indicating that most respondents have around 3 children. With a standard deviation of 0.943, it can be concluded that the number of children among respondents is relatively uniform.

1. Public Perception of KAP KB Krama Bali in Buleleng District

Public perception of KAP KB Krama Bali in this study was measured through several indicators, namely Knowledge, Attitude, and Practice.

Table 8. Respondents According to Perceptions About Knowledge of Balinese Family Planning

No	Pertanyaan	Jawaban					Mean
		STS	TS	CS	S	SS	
		Orang %	Orang %	Orang %	Orang %	Orang %	
1	Saya mengetahui keberadaan KAP KB <i>Krama</i> Bali yang merupakan Instruksi Gubernur Bali.	0 0,0	3 3,0	13 13,0	47 47,0	36 36,0	4,2
2	Saya memahami KAP KB <i>Krama</i> Bali.	0 0,0	9 9,0	15 15,0	51 51,0	24 24,0	3,9
3	Saya menyadari bahwa penyebutan nama Nyoman (anak ketiga) dan Ketut (anak keempat) semakin jarang ditemukan dimasyarakat saat ini.	0 0,0	9 9,0	17 17,0	64 64,0	9 9,0	3,7
4	Saya mengetahui tujuan dari KAP KB <i>Krama</i> Bali.	0 0,0	9 9,0	17 17,0	64 64,0	9 9,0	3,7
Total rata-rata skor							3,9

Sumber : Data primer diolah, 2024

In Table 8 there are four statements that describe the Knowledge of KB Krama Bali towards respondents in Buleleng District. The average total score in this survey is 3.9 which shows that the majority of the community has a fairly good awareness and understanding of the KAP KB Krama Bali program. However, further efforts are still needed to improve understanding of the objectives of this program so that it can be more widely accepted by the community.

Table 9. Respondents According to Perceptions About the Attitude of Balinese KB Krama

No	Pertanyaan	Jawaban					Mean
		STS	TS	CS	S	SS	
		Orang %	Orang %	Orang %	Orang %	Orang %	
1	Saya mendukung keberadaan KAP KB <i>Krama</i> Bali.	0 0,0	23 23,0	14 14,0	55 55,0	7 7,0	4,4
2	Saya memiliki pendapat yang sama dengan KAP KB <i>Krama</i> Bali yang	0 0,0	24 24,0	14 14,0	58 58,0	3 3,0	4,4

	merupakan Instruksi Gubernur Bali.						
3	Saya memiliki pandangan positif terhadap KAP KB Krama Bali.	0,0	24,0	27,0	45,0	3,0	4,2
4	Saya menerima keberadaan KAP KB Krama Bali.	1,0	23,0	36,0	36,0	3,0	4,1
Total rata-rata skor							4,3

Sumber : Data primer diolah, 2024

In Table 9, there are four statements that describe the public perception of the attitude of the Balinese Family Planning Program towards respondents in Buleleng District. The majority of respondents showed quite high support for the Balinese Family Planning Program, which is a government policy in supporting the Family Planning (KB) program. Overall, the survey results show that the majority of respondents have a fairly positive attitude towards the Balinese Family Planning Program, with an average total score of 4.3. However, there are still groups of people who have not fully accepted this policy.

Table 10 describes four statements that focus on actions related to the Balinese Family Planning (KB) program among respondents in Buleleng District. Based on the survey results, it can be concluded that the majority of respondents did not fully follow the Bali Governor's Instructions on the Balinese Family Planning Program, especially in terms of increasing the number of children and birth control. The decrease in the level of action can be explained by several factors. Most respondents who disagreed or strongly disagreed with increasing the number of children, respondents aged over 40 years, expressed concerns about the risk of pregnancy at that age. Pregnancy at a more mature age is considered high risk, both for the health of the mother and the fetus, which is the main reason they prefer not to increase the number of children according to the instructions. In addition, several respondents who already had four children before, despite being instructed to have more children according to the KAP KB Krama Bali policy, felt that they had fulfilled the tradition of naming children according to Balinese customs.

Table 10. Respondents According to Perceptions Perceptions About Balinese Family Planning Practices (Actions)

No	Pertanyaan	Jawaban					Mean
		STS	TS	CS	S	SS	
		Orang %	Orang %	Orang %	Orang %	Orang %	
1	Saya akan menambah jumlah anak sesuai Instruksi Gubernur Bali tentang KAP KB Krama Bali.	42 42,0	53 53,0	4 4,0	0 0,0	0 0,0	2,59
2	Saya telah menambah anak lagi sesuai dengan KAP KB Krama Bali.	47 47,0	7 7,0	0 0,0	41 41,0	4 4,0	3,44
3	Saya telah memberikan sebutan Wayan, Made, Nyoman, dan Ketut di setiap nama anak yang saya lahirkan.	47 47,0	7 7,0	0 0,0	41 41,0	4 4,0	3,44
4	Saya telah mengatur kelahiran, jarak dan usia ideal melahirkan untuk menjalankan Instruksi Gubernur Bali tentang KAP KB Krama Bali.	47 47,00	45 45,00	6 6,0	0 0,0	0 0,0	2,56

Total rata-rata skor	3,2
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Sumber : Data primer diolah, 2024

It can be concluded that public perception of the KAP KB Krama Bali program shows that most respondents have a fairly good level of awareness and understanding of this program. Support for the policy is also relatively high, although there are still some respondents who do not fully understand or accept this policy. The level of action on the Bali Governor's Instruction regarding the KAP KB Krama Bali program tends to decrease, especially in terms of birth control and increasing the number of children. This decline is influenced by concerns about the risk of pregnancy at an advanced age and the fulfillment of the tradition of naming children in Balinese customs. Therefore, further socialization and education efforts are needed with a culture-based approach so that this program is more accepted by the community without ignoring local wisdom values. The results of this interview were also reinforced by the results of an in-depth interview with one of the PUS named Ni Luh Suastini 41 years old, as a fertile couple living in Banjar Tegal on July 24, 2024, who stated that:

"I accept and support KB Krama Bali because it is a directive from the government, but personally I already have 4 children before the Instruction. If asked to have another child, it cannot be done because of age, let the young couple carry out the instruction "

This supports Sarmita's research (2019) which states that the attitudes of netizens on Facebook social media towards the KB Krama Bali discourse show no significant difference between those who agree, are neutral, and disagree. However, it can be seen that most netizens agree with the KB Krama Bali program, followed by those who choose to be neutral, and the fewest netizens who disagree. This shows that almost all netizens are quite enthusiastic about the KB Krama Bali.

1. The Influence of Education, Employment Status, and KAP KB Krama Bali on the Use of Contraceptives

Path analysis is used in research to answer the relationship between exogenous and endogenous variables.

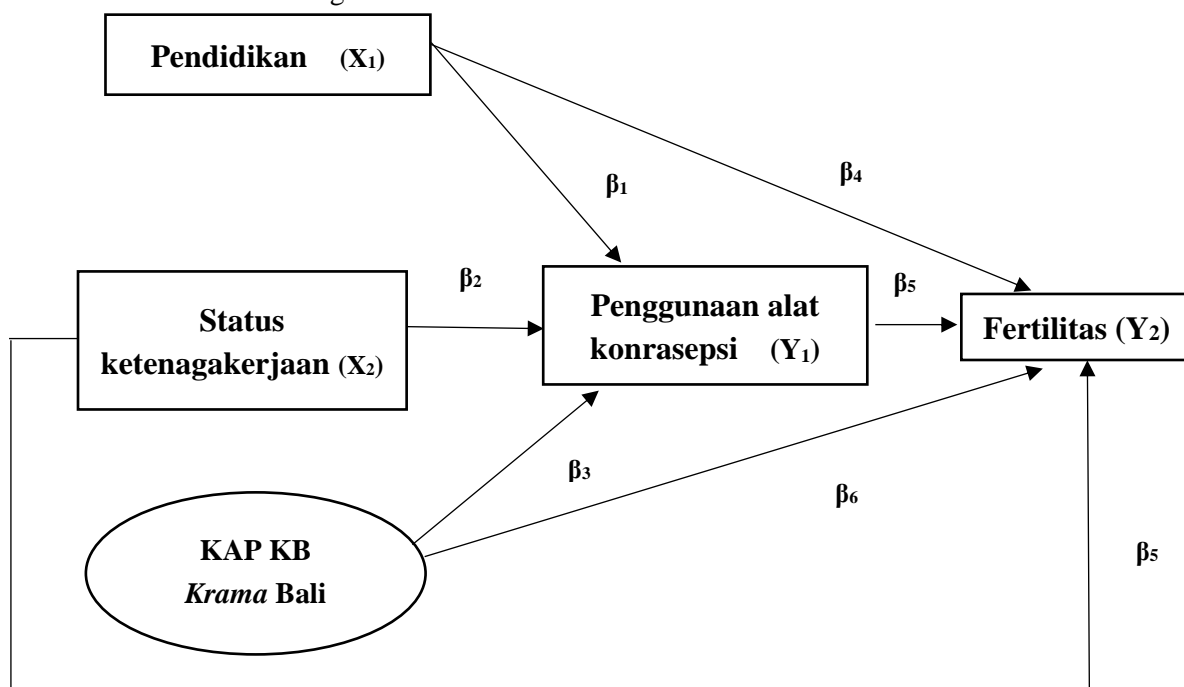


Figure 2 Model of Relationship Paths between Education, Employment Status, KAP KB Krama Bali, Understanding of the Concept of Work in Hinduism, Use of Contraceptives and Fertility

The first structural equation is as follows.

$$Y_1 = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

$$Y_1 = 2,861X_1 + 18,944X_2 + -14,056X_3$$

Table 11. Calculation of Structural Path Coefficient One Influence of Education, Employment Status, and KAP KB Krama Bali on the Use of Contraceptives

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	6,673	15,675		3,871	,000
Pendidikan	2,861	,941	,286	3,042	,003
Status Ketenagakerjaan	18,944	2,640	,378	7,176	,000
KAP KB Krama Bali	-14,056	3,013	-,363	-4,665	,000

a. Dependent Variable: Penggunaan Alat Kontrasepsi

Adjusted R2 : 0,907

F StAtistic : 317.785

Sig.F : 0,000

Sumber : Data primer diolah, 2024

In Table 11, the β_1 value is 2.861, indicating that education has a positive effect on the use of contraceptives and every one unit increase in education level will increase the use of contraceptives by 2.861 units with a significance value of 0.000. The β_2 value of 18.944 indicates that employment status has a large positive impact on the use of contraceptives. Every change in employment status increases the use of contraceptives by 18.944 units with a significance value of 0.003. The β_3 value of -14.056 indicates that the KAP KB Krama Bali has a negative effect on the use of contraceptives. Every increase in the KAP KB Krama Bali will reduce the use of contraceptives by 14.056 units with a significance value of 0.000. The magnitude of the influence of exogenous variables on endogenous variables indicated by the total determination value (Adjusted R Square) of 0.907 means that the three exogenous variables have a very strong relationship with the endogenous variables. With an R^2 of 90%, it can be concluded that this model is very effective in explaining variations in the use of contraceptives.

The results of the analysis in this study indicate that education has a positive and significant effect on the use of contraceptives, this means that the higher the education, the longer the use of contraceptives. Employment status has a positive and significant effect on the use of contraceptives, this shows that respondents who are employed use contraceptives longer than respondents who are unemployed. While for KAP KB Krama Bali has a negative and significant effect on the use of contraceptives. This means that an increase in KAP KB Krama Bali will reduce the use of contraceptives because KAP KB Krama Bali increases the number of children born.

These results support the research of Iandira & Tisnawati (2024) which states that education and employment status have a positive effect on the use of contraceptives..

2. The Influence of Education, Employment Status, Balinese Family Planning Association, and Use of Contraceptives on Fertility

Table 12. Results of Structural Equation Path Analysis of Two Influences of Education, Employment Status, KAP KB Krama Bali, and Use of Contraceptives on Fertility

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2,647	,502		5,272	,000
Pendidikan	-,080	,029	-,215	-2,740	,007

Status Ketenagakerjaan	-,255	,098	-,136	-2,611	,011
KAP KB Krama Bali	,616	,099	,425	6,195	,000
Penggunaan Alat Kontrasepsi	-0,09	,003	-,248	-3,042	,003

a. Dependent Variable: Fertilitas

Adjusted R2 : 0,941

F Statistic : 390,665

Sig.F : 0,000

Sumber: Data primer diolah, 2024

Based on the results of the analysis of the two structural equation paths as presented in table 12, the structural equation is as follows

$$Y_2 = \beta_4 X_1 + \beta_5 X_2 + \beta_6 X_3 + \beta_7 Y_1 + e$$

$$Y_2 = -0,080X_1 + -0,255X_2 + 0,616X_3 + -0,09Y_1$$

The value of β_4 is -0.080, this indicates that every one unit increase in education is associated with a decrease in fertility of 0.080, assuming other variables remain constant with a significance value of 0.007. The value of β_5 is -0.255 indicating that better employment status is associated with a decrease in fertility of 0.255 with a significance value of 0.011. The value of β_6 is 0.616 indicating that an increase in KAP KB Krama Bali is associated with an increase in fertility of 0.616 with a significance value of 0.000. The value of β_7 is -0.009 indicating that an increase in the use of contraceptives is associated with a decrease in fertility of 0.009 with a significance value of 0.003. The magnitude of the influence of exogenous variables on endogenous variables indicated by the total determination value (Adjusted R Square) of 0.941 indicates that the model remains very good even though it is adjusted for the number of predictors used. This indicates that the model is not only robust but also efficient in terms of the number of variables used.

The results of the analysis in this study indicate that the influence of education, employment status, and use of contraceptives on fertility in Buleleng District has a significant negative effect. Increasing education and the use of contraceptives will reduce fertility rates. Respondents who are employed have less fertility than respondents who are unemployed. Meanwhile, the KAP KB Krama Bali has a positive effect on fertility, this is because the KAP KB Krama Bali is to increase the number of children born.

This supports the research of Iandira & Tisnawati (2024) which states that education and employment status have a negative and significant effect on fertility. As well as the research of Manuaba & Marhaeni (2023) which states that the use of contraceptives has a negative effect on fertility.

4. The Role of Contraceptive Use in Mediating the Influence of Education, Employment Status, and Balinese Family Planning KAP on Fertility

a) The Influence of Education on Fertility, Mediated by the Use of Contraceptives.

In this section we will test the effect of education (X1) on fertility (Y2) mediated by the use of contraceptives (Y2) using the Sobel test. So a mediation test is carried out using the Sobel test as follows :

$$Z = \frac{(2,861) \cdot (-0,009)}{\sqrt{((0,009)^2 \cdot (0,941^2) + (2,861^2 \cdot 0,003^2)}}$$

$$Z = -2,14$$

$$|Z| = |-2,14| = 2,14$$

Based on the calculation of the Sobel test equation manually, the value of $Z = -2.14$ is indeed not greater than 1.96 in absolute value (positive), but $|Z|$, or the absolute value of

Z, is 2.14. Because $|Z| > 1.96$, the results remain significant at the 95% confidence level ($\alpha = 0.05$). The negative sign indicates the direction of the relationship (negative impact), but it does not affect the statistical significance. So, even though Z is negative, the results are significant, and this supports the existence of partial mediation.

b) The Effect of Employment Status on Fertility, Mediated by the Use of Contraceptives.

In this section we will test the effect of employment status (X2) on fertility (Y2) mediated by the use of contraceptives (Y2) using the Sobel test. So a mediation test is carried out using the Sobel test as follows :

$$Z = \frac{(18,944). (-0,009)}{\sqrt{((0,009)^2. (2,640^2) + (18,944^2. 0,003^2)}$$

$$Z = -2,77$$

$$|Z| = |-2,77| = 2,77$$

Based on the calculation of the Sobel test equation manually, the value of $Z = -2.77$ is indeed not greater than 1.96 in absolute value (positive), but $|Z|$, or the absolute value of Z, is 2.77. Because $|Z| > 1.96$, the results remain significant at the 95% confidence level ($\alpha = 0.05$). The negative sign indicates the direction of the relationship (negative impact), but it does not affect the statistical significance. So, even though Z is negative, the results are significant, and this supports the existence of partial mediation.

c) The Influence of the Balinese Krama KB Program on Fertility, Mediated by the Use of Contraceptives.

In this section we will test the effect of KAP KB Krama Bali (X3) on fertility (Y2) mediated by the use of contraceptives (Y2) using the Sobel test. So a mediation test is carried out using the Sobel test with the following equation:

$$Z = \frac{(-14,056). (-0,009)}{\sqrt{((0,009)^2. (3,013^2) + (-14,056^2. 0,003^2)}$$

$$Z = 2,52$$

Based on the calculation of the sobel test equation manually, the value of $Z = 2.52$ is greater than 1.96, so the results are significant, and this supports the existence of partial mediation because endogenous variables affect exogenous variables, and mediating variables also affect exogenous variables. From the tests that have been carried out, it can be concluded that the role of the use of contraceptives in mediating partial education and employment status because the test results are significant but have a negative impact on fertility, while for KAP KB Krama Bali it is significant and has a positive impact on fertility.

The results of this analysis indicate that the role of the variable use of contraceptives in mediating partial education variables shows that the higher the level of education, the more likely the use of contraceptives increases, which ultimately reduces the fertility rate. The role of the variable use of contraceptives in mediating partial employment status variables shows that the more women who are working, the more likely the use of contraceptives increases, which ultimately reduces the fertility rate. Meanwhile, the role of contraceptive use in partially mediating the KAP KB Krama Bali shows that the positive and significant influence, then the possibility of contraceptive use decreases which ultimately contributes to increased fertility.

Thus, it can be concluded that the variable of contraceptive use partially mediates education, employment status and KAP KB Krama Bali on fertility. Although the results

of previous studies have differed, the findings in this study remain valid because they are supported by statistical analysis and are relevant to the context studied. The difference in results can be caused by differences in social, economic, location, respondent characteristics, and research time can affect the relationship between variables. In theory, these results are supported by several approaches, such as the Health Belief Model Theory, which explains that the higher a person's education level, the greater their awareness of family planning, including the use of contraceptives. The difference in results shows that the relationship between education, employment, and fertility through contraceptives can be influenced by various environmental factors.

4. CONCLUSION AND SUGGESTIONS

Based on the previous discussion and description, it can be concluded that; 1) The public perception of KB Krama Bali is that most people understand and accept KB Krama Bali. Meanwhile, the practice of having four children according to KB Krama Bali has a low percentage due to the risk of pregnancy at an advanced age; 2) Education has a positive and significant effect on the use of contraceptives in Buleleng District. Respondents who are employed use contraceptives longer than respondents who are unemployed. Meanwhile, KAP KB Krama Bali has a negative and significant effect on the use of contraceptives; 3) The effect of education and the use of contraceptives on fertility in Buleleng District has a significant negative effect. Respondents who are employed have less fertility than respondents who are unemployed. Meanwhile, KAP KB Krama Bali has a significant positive effect on fertility; 4) The role of contraceptive use is able to partially mediate the effect of education, employment status, and KAP KB Krama Bali on fertility in Buleleng District.

Based on the analysis and conclusions that have been presented, the following suggestions can be submitted, namely; 1) The role of the government is needed in overcoming fertility rates, one of which is through a family planning program. The government must expand access to education, especially regarding reproductive health and the benefits of family planning, to increase public understanding of the importance of fertility management. Education must be carried out inclusively, involving all levels of society, including those who do not have access to formal education. As well as increasing the distribution of contraceptives in remote or hard-to-reach areas. Ensure that the contraceptives provided are of high quality and in accordance with the needs of the community. And provide consultation and guidance services on the use of contraceptives that are easily accessible, including online; 2) Increasing awareness of family planning PUS needs to increase understanding of the importance of family planning to ensure the welfare of family members, including children. Independent education through trusted sources, such as health workers or official institutions, about contraceptives and fertility management is very important.

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