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RESEARCH ARTICLE

Consumption smoothing, the cost of children, and family size desired in poor households: empirical evidence from family planning villages in Sintang Regency, the Province of West Kalimantan, Indonesia

Eddy Suratman [1], Restiatun Restiatun [1]

1 *Universitas Tanjungpura, Pontianak, The Province of West Kalimantan, 78124, Indonesia*

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Abstract

There are many factors that may prevent individuals from achieving consumption smoothing, especially for poor individuals or households. Liquidity barriers for the poor can be overcome by pension programs financed by the government and intergenerational transfers. This research aims at investigating determinants of the family size decisions in poor households. This research uses primary data from survey questionnaires conducted among 447 poor households selected in Family Planning Villages throughout Sintang Regency. The family size decision is only affected by parents' expectation of an intergenerational transfer. This variable has a significant positive effect, and the possibility of an old-age pension scheme provided by the government does not significantly affect the family size decision. This may be due to the fact that there has been no pension scheme for poor households in Indonesia. The cost of children does not influence the poor household's family size decision. This is probably due to family package assistance provided by the government which can help reduce the cost of children. The cost of daily living, health and education costs have a significant positive effect on the burden of these costs. The findings of this study indicate that the family assistance package provided by the government does not encourage poor households to have a larger family, meaning that the provision of family assistance packages does not contradict the Family Planning Program. It also provides evidence that the government's pension scheme for poor households can be also considered as a means of controlling the population growth, because this scheme will lower the expectation of poor households to receive intergenerational transfers.

Keywords

intergenerational transfer; cost of children; consumption smoothing; pension scheme; poor household

JEL codes: D10; D19; H55

Introduction

One way to improve people's welfare and reduce poverty at the macro level is to suppress population growth, for example through a family planning program (Ahlburg 1994). Poverty limits a household's ability to pay for childcare as well as put aside for retirement, in fact neither an individual nor a household wants a drastic reduction in the consumption level due to a decline in the income at retirement. A certain consumption level is considered acceptable in the future, and households will try to maintain it. In other words, individuals or households hope to achieve consumption smoothing throughout their lives. Research in behavioral economics suggests that consumer preference is measured with regard to a reference point (Kőszegi & Rabin 2006; Siegmann 2002).

A method households can follow to prepare for consumption smoothing at retirement is saving while still productive (Deaton 2019, Bairoliya et al. 2021). However, many factors may prevent individuals from achieving consumption smoothing, especially for poor individuals or households. The consumption smoothing ability reflects an important dimension of the well-being because it marrows the capacity of people to meet their basic needs (Skoufias 2003; Notten 2006). Low-income households fail to succeed in consumption smoothing in retirement due to low welfare levels, which also results in low savings (Shaikh et al. 2018). In cases like this, a public pension system is needed to ensure retirement income levels that prevent the individuals or households from the risk of poverty at an old age (Shang 2014). There has not been much research on policies to mitigate consumption fluctuations for poor households, often the government only pays attention when there is a decline in consumption but there are no government policies that can encourage savings or insurance for poor households when they experience an increase in income (Ajefu 2017). In Indonesia, the pension scheme is only provided to workers in the formal sector. According to data from BKN (2023), in Indonesia the upper retirement age is 70 years. Meanwhile, for non-civil servants, the retirement age limit is 56 years (MediaBUMN 2023).

Liquidity barriers for the poor can be overcome by altruism and philanthropic endowments providing social support for poor households (Akerlof 2007) or programs financed by the government (Jappelli & Pistaferri 2010) and intergenerational transfer (Ioannides & Kan 1996). According to Mussa (2014), intergenerational transfers are expected to make poor households have more children as a source of support in retirement. A family size has an impact on children's development and formation of human capital with their future economic status (Mussa 2014). Research in the developed and developing countries shows that children from larger families tend to be shorter, less intelligent, and have lower survival rates (Bielicki 1986). Furthermore, a big number of children will reduce the attention given to each child, affecting their academic ability. Therefore, children from poor households of a large size are closer to poverty (Birdsall & Griffifin 1988), with an intergenerational poverty transfer (Moav 2005).

The above statement underscores the assumption that there is a positive causal relationship between poverty and fertility at the national and household levels (Aassve et al. 2005). This implies that at the micro or household level, poor households have a large family size, encouraging them to increase fertility. Mussa (2014) shows that Africa has the highest fertility and poverty rates, but empirically there is no consensus on the nature of the relationship. Poor households that do not have pension funds, hope to be able to maintain their consumption level when they are no longer productive, funds only from their intergenerational transfers to maintain the reference point level of the consumption. Mixed

empirical findings were received in Botswana (Chernichovsky1984), positive relationships were found in Sierra Leone and Ethiopia (Ketkar 1979), while negative relationships were identified in Burkina Faso (Langani 1997) as well as in South Sudan (Cohen & House 1994). Meanwhile, in Cameroon, Noumbissi and Sanderson (1998) show that fertility was very high, but the relationship was in the form of an inverted U-shape. This implies that low-income and high-income households have low fertility rates, while middle-income ones have higher fertility. The relationship between the two variables may move from fertility to poverty.

Indonesia is one of the low-income countries with the fourth largest population in the world. The World Bank projects that the poverty rate in Indonesia in 2020 will increase by 10.7% in a mild and 11.6% in severe scenarios. It is estimated that there will be 5.5-8 million new poor people since 2019 (Jayani 2020). A report from Worldometers noted that Indonesian population reached 274.86 million as of December 14th, 2020. This number ranks Indonesia fourth in terms of the population size in the world (Annu 2020). To overcome complex problems related to poverty and high population growth, the government has carried out several strategies, such as launching a Family Planning Village program since 2016. The implementation aims to bring a family planning program closer to the community, especially in poor, densely populated urban, fishing villages, slums, and other disadvantaged areas (Suratman & Massardi 2020). The Indonesian government hopes that a successful Family Planning program can reduce poverty levels (Central Bureau… 2023).

On the other hand, the government also provides family assistance packages for poor households, with the aim to improve quality of their lives (Byaruhanga & Debesay 2021; Finn and Leibbrandt, 2017), including improving life quality for children from poor households, so that they have a higher opportunity to enter the labor market and will have an impact on increasing welfare and reducing poverty. According to Cabinet secretariat of the Republic of Indonesia, in 2021, the Indonesian government provided family assistance packages to 10 million beneficiaries (Cabinet Secretariat…, 2021). Da Silva et al. (2020) and Matos et al. (2021) found a positive relationship between poverty and family resilience due to exposure to risk of shocks.

Nationally, 5,590,724 people in Indonesia remain in extreme poverty. Meanwhile, the number of extreme poor people in West Kalimantan Province adds up to 73,342 people or 1.41 percent of the population (Central Bureau… 2023). The number of poor people in West Kalimantan in September, 2022, equaled to 6.81 percent, while at the national level it was 9.36 percent. Sintang's poverty rate in 2022 is above the provincial level, yet below the national one, which is 8.57 percent (Central Bureau… 2023). In the same year, Sintang's multidimensional poverty rate was the worst (22.27%) in the province of West Kalimantan (Aidha et.al 2020). Based on data from the National Population and Family Planning Agency of Indonesia (BKKBN 2022) Sintang Regency turns out to be a district with the highest number of Family Planning Villages – 44 spread all over its 14 sub-districts. This is accomplished because the desired lower fertility can be only achieved through limiting the number of births (Muhoza et al. 2014).

Education and health care access is expected to increase human resource quality, particularly for children from low-income households, and protect them from falling into poverty. (Cooray et al. 2011; Reza & Widodo 2013). Countries with high fertility rates, such as Indonesia, have "package" policies that facilitate childcare (Galloway & Hart 2015). In addition to the declaration of the Family Planning Village Program, the government also provides social assistance (public assistance) and welfare services to help the poor through Healthy

Indonesia and Smart Indonesia Card (Maliangga et al. 2019). The assistance includes monetary benefits, goods, or social services aimed at helping or protecting the most vulnerable individuals, families, and communities to meet basic needs and improve their quality of life. Social assistance and government social investment are conducted through special protection policies for children (Muhtar 2017). Such aids or social package policies will certainly reduce the direct cost of childcare, and this can increase the demand for children in poor households. Family policies can directly affect childbearing behavior by increasing the budget size and decreasing the size of the direct cost of children. A lot of literature supports that the demand for children is a function of their direct costs and individuals' preferences, for a given level of income (Letablier et al. 2009).

Data show that an increase in the provision of pensions for older people by the state correlates with a decline in fertility (Boldrin et al. 2015). The impact on changing fertility patterns and their relationship with government-provided pensions is a new topic that is quite interesting to be developed. The findings of Ehrlich and Kim (2005) show that a higher scale of the social security system negatively affects fertility.

Based on the above explanation, studying determinants of the family size desired by poor households is interesting. This is determined by the expectation of receiving intergenerational transfers from children in retirement or high direct cost of childcare. The more children, the higher the intergenerational transfer that can be expected, but on the other hand it also increases the cost of children before these children enter the labor market, ceteris paribus. And the limitations of poor households in financing their children's education will cause their children to also be trapped in poverty because the academic abilities of children from poor households are usually low. Limiting the number of children as a condition for obtaining an old-age pension from the government may be an effective way to control population size and poverty.

Literature review

Regardless of the community type, most couples of childbearing age balance the cost of having children and the expectations of the economic, social, and psychological benefits (Muhoza et al. 2014). Economic monetization raises concern about higher cost of food, clothing, health, and education associated with a higher number of children. Some socioeconomic factors change as socioeconomic development or family planning campaigns affect the demand for children. Compared to rural areas, urban environments offer more employment and education opportunities and are associated with cultural diversity and openness to new ideas (Garenne & Joseph 2002). Furthermore, this contributes to weakening traditional norms and values, such as the resource sharing system, which makes them more tolerant of small families (Gurmu & Mace 2008). Empirical literature shows a strong negative correlation between education level, preferences, and fertility behavior (Bongaarts 2002).

According to a Nigerian study, poverty can affect economic expectations during crisis, hence they have a lower fertility preference (Odusola 2002). This indicates that the negative impact of poverty on the desired family size occurs when people understand that their economic means cannot support the decision to have more children. There are many studies showing that the desired family size is negatively related to the financial status, where couples of childbearing age with a lower financial status have a higher number of children desired than women with a higher financial status (Hyatt & Milne 1993; Gwatkin et al. 2007).

But in some Asian countries, women from poor households are reported to have lower demands than those from rich households (Becker 1991; Rahman et al. 2002).

The individual or household's ability to respond to uncertainty and cope with income shocks reflects an important life dimension. Furthermore, welfare is enjoyed by individuals or households at a certain point in time. Households with a high risk of being poor are the same as those with low consumption smoothing capabilities. Meanwhile, households with savings for retirement have a lower risk of poverty and a higher ability to smooth consumption. High poverty risks are found in households with a high number of children and dependency burden (Mberu & Reed 2014; Canning et al. 2015; Dribe et al. 2017).

The relationship between demographic structure and household saving rates can be explained through two mechanisms, first, through reducing the number of children who are household dependents to have a higher ability to save. Second, through the composition effect, most of the savings are generated from the difference in income and consumption of the productive population (20 – 65 years old), who mostly receive income from work. Changes in the structure will increase savings in aggregate (Curtis et al. 2015). Changes in the population age structure will affect the aggregate saving level (Gauthier & Hatzius 1997). If a life-cycle saving is driven by the motivation to prepare for retirement, then a low population growth will reduce the aggregate saving (Modigliani & Brumberg 2003). However, when the cost of raising children determines the saving ability, a low population growth will increase the saving rates (Coale & Hoover 1958, Higgins & Williamson 1997).

Fertility behavior can be analyzed within the framework of a neoclassical economic model such as developed by Leibenstein in 1957. This model emphasizes the importance of intergenerational transfer as a form of old-age security and fertility motivation in developing countries. In 1960, Becker further developed this model by reconciling predictions from the demand theory in income to increase the demand for children. This paradox was answered by applying the theory of consumer behavior determined by variations in household income and the opportunity costs of childcare.

The Microeconomic Theory of Household Fertility explains that every family has costs and benefits in determining the desired family size. This theory adopts the conventional consumer behavior theory. Children are considered consumer goods (no profit). A demand for children is a rational economic choice. The desire to have children is influenced by income, the cost of living, and the desire to consume other goods, and the demand for children is positively related to income. This is negatively related to the relative cost of children and preferences for other goods (Todaro, 2000).

Becker (1960) introduced two key elements of household microeconomic theories: preferences and constraints. Hypotheses on the observed behavior are constructed from the comparative static analysis showing how demand varies as budget constraints shift as income. When this methodology is applied to fertility behavior, a clear conflict was noted between theoretical predictions and empirical evidence. As income increases, theory predicts that the quantity of most goods will increase, except for "inferior" goods, which tend to be of a lower class. Empirically, fertility declines as income increases greatly, and there appears to be a negative correlation between family income and the number of children.

Meanwhile, the demand for children has qualitative and quantitative dimensions. Hence, the total expenditure is equal to the number of children multiplied by the quality per child and by a price index reflecting the cost of inputs. In the quality – quantity model, spending on children tends to increase with income. However, this is due to the increased child quality, while fertility does not vary based on income variations.

Data and methodology

This research uses primary data collected through survey questionnaires. The population is couples from poor households in Family Planning Villages in Sintang Regency, The Province of West Kalimantan. The total sample includes 447 poor households, and the sample was obtained from 15 Family Planning Villages in Sintang regency. Furthermore, a purposive random sampling was used, where the sample size was determined based on the number of residents of the Family Planning Villages selected. The research samples are presented in Table 1.

Table 1. Research Population and Sample Households

No.	Family Planning Village	Number of Couples from poor households	Total Sample
1.	Mungguk Bantok	9201	36
2.	Kerapan Sepan	4702	32
3.	Pegal Baru	8399	35
4.	Sungai Pukat	1806	20
5.	Ransi Dansi	5981	30
6.	Baya Mulya	2841	20
7.	Nanga Jetak	4940	30
8.	Baung Sengatap	3855	30
9.	Telaga Satu	2138	20
10.	Repak Sari	5983	34
11.	Jaya Sakti	3961	31
12.	Empoyang	3611	33
13.	Landau Barat	3236	32
14.	Nanga Tonggoi	3511	33
15.	Menaong Baru	4175	31
	TOTAL	**68.340**	**447**

Source: National Population and Family Planning Agency (BKKBN), 2022

All data collected will be analyzed using a regression analysis. In this research, the dependent and independent variables are binary. The variables used are binary or dummy variables with values of 0 and 1. Therefore, the estimation equation used to test the relationship between these variables is as follows:

$$CC_i = \alpha_0 + \alpha_1 SAB_i + \alpha_2 SAH_i + \alpha_3 SAE_i + \varepsilon_i, \quad (1)$$

$$FSD_i = \beta_0 + \beta_1 IT_i + \beta_2 CC_i + \beta_3 PG_i + e_i. \quad (2)$$

Insert equation (1) in (2), therefore

$$\begin{aligned} FSD_i &= \beta_0 + \beta_1 IT_i + \beta_2(\alpha_0 + \alpha_1 SAB_i + \alpha_2 SAH_i + \alpha_3 SAE_i + \varepsilon_i) + \beta_3 PG_i + e_i = \\ &= \beta_0 + \beta_1 IT_i + \beta_2\alpha_0 + \beta_2\alpha_1 SAB_i + \beta_2\alpha_2 SAH_i + \beta_2\alpha_3 SAE_i + \beta_2\varepsilon_i + \beta_3 PG_i + e_i = \\ &= (\beta_0 + \alpha_0\beta_2) + \beta_1 IT_i + \beta_2\alpha_1 SAB_i + \beta_2\alpha_2 SAH_i + \beta_2\alpha_3 SAE_i + \beta_3 PG_i + (\beta_2\varepsilon_i + e_i) = \\ &= \gamma_0 + \gamma_1 SAB_i + \gamma_2 SAH_i + \gamma_3 SAE_i + \beta_1 IT_i + \beta_3 PG_i + \theta_i. \end{aligned} \quad (3)$$

Where
FSD : Desired family size
IT : Intergenerational Transfer
PG : Pension Scheme provided by the Government
CC : Direct Cost of Childcare
SAB : Government assistance in basic needs packages
SAH : Government assistance in the health sector
SAE : Government Assistance in the field of education
e, θ, ε : Error term
The operational definitions of the variables in this research are presented in Table 2.

Table 2. Operational Definition of the Research Variables

Variable	Description	Value
FZD	Number of children planned to be born by couples of child-bearing ages.	Children.
IT	Dummy describes the respondents' expectations of intergenerational transfer when they enter the retirement age.	Value = 1 if the expected budget for consumption in retirement comes from children; and value = 0 when the budget expectations for consumption in retirement are not from their children.
CC	A dummy that describes the respondents' perceptions concerning the burden of the direct cost of children.	Value = 1 when the direct cost of children, which consists of clothing, food, and board costs, education costs, and health care costs for children is considered expensive; and value = 0 when the direct cost of children consisting of clothing, food, and board costs, education costs, and health care costs for children is perceived as inexpensive.
PG	A dummy that describes the respondents' perceptions concerning the expectation of a pension scheme provided by the government at an old age.	Value = 1 when there is an expectation of a pension from the government for old age; and value = 0 when there is no expectation of a pension from the government for old age.
SAB	Dummy describes the respondents' perceptions concerning the effect of social assistance packages in the form of basic needs packages provided by the government on the direct cost of childcare.	Value = 1 when it is felt that the existence of a social assistance package in the form of a basic needs package provided by the government can reduce the direct cost of childcare; and value = 0 when it is felt that the social assistance package provided by the government in the form of a basic needs package is unable to reduce the direct cost of childcare.
SAH	Dummy describes the respondents' perceptions concerning the effect of social assistance packages in the health sector provided by the government on the direct cost of childcare.	Value = 1 when it is felt that the social assistance package in the health sector provided by the government can reduce the direct cost of childcare; and value = 0 when it is felt that the social assistance package provided by the government in the health sector is unable to reduce the direct cost of childcare.

End of the table 2

Variable	Description	Value
SAE	A dummy that describes the respondents' perceptions concerning the effect of social assistance packages in the education sector provided by the government on the direct cost of childcare.	Value = 1 when it is felt that the social assistance package in the education sector provided by the government can reduce the direct cost of childcare; and value = 0 when it is felt that the social assistance package provided by the government in the field of education is unable to reduce the direct cost of childcare.

Source: Primary Data, processed, 2021

Results and Discussion

Demographics of the Respondents

The respondent characteristics relate to their socioeconomic background: age, education level, income, number of children, marriage length, and religion. The average age of the husband and wife is 43.39 and 39.31 years, respectively, with the oldest age of 79 years for husband and 76 years for wife. The youngest husband and wife respondents are 17 and 18 years, respectively. Table 3 below presents age characteristics of the respondents.

Table 3. Age characteristics of the respondents

Age	Wife	Husband	TOTAL
15–25	39	17	56
26–35	142	98	240
36–45	151	159	310
46–55	75	107	182
56–65	32	54	86
66–75	7	10	17
> 76	1	2	3
Total		**447**	
Average age	39.31	43.39	

Source: Primary Data, processed, 2021

The marriage length, as long as the wife is of a childbearing age, will determine the number of children in the household. Based on the marriage length, the average is 18.01 years, with the longest and shortest ones being 48 years and 1 year, respectively.

The average number of children planned and owned is 2.47 and 2.27, respectively. Based on these two averages, the average number of children in poor households is still smaller than the number planned due to a high cost of childcare. There are 33 poor households with the over-than planned number, while the rest have children equal to or less than the planned number. A total of 346 respondents stated that childcare was expensive, and the remaining 101 stated that it was inexpensive. Furthermore, five reported that the most expensive com-

ponent was health-associated costs, while 166 stated it was the education cost. The remaining 175 respondents named the cost of daily living. Out of the respondents who stated that the cost was inexpensive, four reported that the cheapest component was health-associated costs, while 42 named the education cost. The remaining 55 respondents named the cost of daily living. The complete data are presented in Table 4.

Table 4. Components of the Cost of Children

Perception of the Cost of Children	The Most Expensive Component			Total
	Education	Health	Cost of living	
Expensive	166	5	175	346
Inexpensive	42	4	55	101
Total	**208**	**9**	**230**	**447**

Source: Primary Data, processed, 2021

Education is still believed to be one of the tools that can lift children from poor households (Haughton & Khandker 2012). Even though the household is poor, most respondents hope their children can enjoy a college education. A total of 360 respondents believed their children would be able to obtain a higher education at the level of university or college. Meanwhile, the remaining 87 only hope to obtain the highest possible education below the university level.

A village can become a Family Planning Village (i.e. participating in the Family Planning Village Program) because most of its population is attributed to the poor. However, because the Indonesian Ministry of Social Affairs (pkh.kemensos.go.id) has established various criteria for qualifying low-income families to receive assistance packages, not all low-income homes in Family Planning Village receive government assistance packages. Out of all the respondents, 181 households received assistance packages from the government, while the remaining 266 did not. About 179 respondents of the assistance recipients stated that the assistance package reduced costs associated with childcare. In comparison, the remaining 2 respondents stated that it did not reduce the current cost of childcare.

Contraceptive devices are a means of planning a family size. There are 310 households using contraception, while 137 are not. This is because there are households where both wives and husbands are old. There are 180 couples of childbearing age, especially households with wives aged under 35. Out of the respondents included in the group of fertile age couples, 127 households use contraception, and the remaining 53 do not. Some couples of childbearing ages do not use contraception, it is possible that they still want to increase their number of children. Meanwhile, there are some couples who are no longer of childbearing age who still use contraception, perhaps to ensure that they no longer get pregnant. Several couples of non-childbearing age were also used as samples with the aim of finding out whether the children they currently have match the number of children they wanted when they were still of childbearing age. For a sample of couples of childbearing age, if there is a discrepancy between the number of children they have and the number of children planned, it is still possible that in the future they will still increase the number of children they have, as long as they are still of childbearing age.

According to Suratman and Massardi's (2020) findings, the number of children is directly proportional to the probability of households of fertile couples using contraception. Table 5 presents the household data related to couples of childbearing ages, contraceptive use, and the number of children.

Table 5. Households from couples of childbearing and non-childbearing ages by category, use of contraceptives and number of children

Household Category	Contraception	Number of children		Total
Couples of childbearing ages	Use contraception	Children ≤ 2	127	127
		Children > 2	24	24
	No contraception	Children ≤ 2	48	48
		Children > 2	5	5
Couples of non-childbearing ages	Use contraception	Children ≤ 2	101	101
		Children > 2	82	82
	No contraception	Children ≤ 2	52	52
		Children > 2	32	32
Total			**447**	**447**

Source: Primary Data, processed, 2021

It will be difficult for the impoverished households with extremely low earnings to set aside a portion of their income for retirement savings. Due to the realization that every person should continue to consume after retirement, some impoverished households construct pension plans from their assets, such as rice fields or gardens. These impoverished households believe they can sell these assets to sustain themselves in retirement. Out of all the respondents, 97 stated that they had savings for retirement, while the remaining 350 did not have any savings.

The intergenerational transfer is a source of financing for poor households in retirement. Furthermore, 276 expect an intergenerational transfer at an old age, while the remaining 171 did not expect a transfer. The livelihoods of poor households are employment in the informal sector, where there are no jobs that ensure old-age security or pension funds for workers. Therefore, they may receive pension funds when the government provides for poor households. Out of all the respondents, 222 expect pension funds from the government in retirement, while the remaining 225 do not expect any assistance. Table 6 presents the data details.

Table 6. Respondents by indicator of reaching retirement

Indicator	Number of Respondents		Total
	Yes	No	
Have savings for retirement	97	350	447
Expect an intergenerational transfer	276	171	447
Expect a pension scheme provided by the government	222	225	447

Source: Primary Data, processed, 2021

Regression Results

Table 7 presents estimation results obtained using the estimation equation as presented above. Based on the table above, only the intergenerational transfer variable has a significant positive effect on the family size decisions among poor households in Sintang District, the Province of West Kalimantan, Indonesia. Meanwhile, an old-age pension scheme provided by the government does not significantly influence the family size decisions. This may be due to the fact that there has been no pension scheme for poor households in Indonesia. Therefore, the respondents obviously did not consider this variable in their decisions. The cost of raising children does not significantly affect the decision on family size, indicating that an old-age insurance is the main determinant. Consumption smoothing in retirement is an important consideration in the family size decisions for poor households. Since the cost of children variable is insignificant in determining the family size among low-income households, the government support package is not detrimental to the planned family planning program. Based on the Prob value (F statistic), all independent variables are significant regressors for the desired family size.

Table 7. Regression Results for determinants of the Family Size Desired

Variable	Coeff	t-stat	Prob
C	1.521033	13.46572	0.0000
IT	1.339433	15.74532*	0.0000
PG	-0.046142	-0.559065	0.5764
CC	-0.015514	-0.132330	0.8948
R-squared	0.362999		
F-statistic	84.14874		
Prob (F-statistic)	0.000000		

Source: Primary Data, processed, 2021

Even though the variable of the cost of children is insignificant, all cost components are perceived as expensive by low-income families, as seen in Table 8. The estimation was conducted using Probit Model because the data on the variables were not normally distributed.

Table 8. Regression results for the family size determinants

Variable	Coeff	t-stat	Prob
C	-2.083337	-6.050148	0.0000
SAB	2.488215	6.524329*	0.0000
SAH	3.003321	7.260169*	0.0000
SAE	2.827038	7.390292*	0.0000
McFadden R-squared	0.683611		
LR statistic	326.5591		
Prob (LR statistic)	0.000000		

Source: Primary Data, processed, 2021

Among the components of childcare, health care cost accounts for the largest part of the total cost. The health care cost for children is directly proportional to the probability of households to perceive that childcare costs are expensive. The Indonesian government has been providing health assistance for poor households through health insurance for the poor (Askeskin), and the launch of the Healthy Indonesia Card is expected to increase access to health services. With this increase in access to health care, the health status of the disadvantaged households will improve. Therefore, the labor productivity of poor households is always high (Maliangga et al. 2019).

Education costs are the second highest share of the cost of children. The cost of education for children is proportional to the probability perceived by households. For education expenditure, the government has also provided assistance through BOS (School Operational Assistance) funds and by launching the Smart Indonesia Card (KIP). Children's access to formal education will increase the education participation rate and decrease dropout cases. Therefore, the next period will increase their access to jobs with better incomes (Maliangga et al. 2019).

The daily living cost component is the variable with the smallest share in the total cost of children. The cost of daily living for children is directly proportional to the probability of households perceiving those childcare costs are expensive. The small share of this daily living cost in the total cost of children is probably because it is often financially minimal. However, households have sufficient food resources on a subsistence basis and can meet their daily needs. Based on the Prob (F statistic) value, all independent variables are significant regressors for childcare costs.

Conclusion

Every individual or household is expected to perform consumption smoothing upon retirement. For poor households without retirement savings or pension funds, the source of income can be in the form of intergenerational transfers or an old-age assistance scheme provided by the government. Furthermore, these two variables significantly influence decision-making regarding the desired family size. The expectation of an intergenerational transfer is directly proportional to the desired family size. There are high welfare expectations among poor households at the time of retirement when they have a large family size. Meanwhile, the government pension transfer variable has a negative effect on the desired number of children. The poor households in Family Planning Villages in Sintang Regency have not considered the government pension scheme variable in making family size decisions, probably because there is no pension scheme for the poor in Indonesia. This indicates that providing government pension transfers can be a strategy for controlling the population, but the provision is certainly not without conditions. This requirement to obtain assistance is used to control the population. For example, only households with two children will receive pension assistance from the government. However, data are taken from poor households with children, so this can be biased because family size planning is more appropriate for individuals or households that do not have children. Future research can be conducted on couples without children or individuals from poor households who are matured, yet not married.

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Information about the authors

- Eddy Suratman – Lecturer and Researcher at Universitas Tanjungpura, Faculty of Economics and Business. Pontianak, The Province of West Kalimantan, 78124, Indonesia. Email: eddy.suratman@ekonomi.untan.ac.id
- Restiatun Restiatun – Corresponding author, Lecturer and Researcher at Universitas Tanjungpura, Faculty of Economics and Business. Pontianak, The Province of West Kalimantan, 78124, Indonesia. Email: restiatun@untan.ac.id