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# WOMEN'S CHOICE FOR THEIR OFFSPRING: CHECKING ON INVESTMENT IN HUMAN CAPITAL

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**ABSTRAK**

This study aims to examine the relationship between women's time preference as a factor of her decision-making and children's education within their household. We estimate the Multinomial Logit model using data from 2014 survey from IFLS-5. We use responses to hypothetical choice questions which has inter-temporal tradeoffs available on the survey data to determine individual time preference. Tentative results suggest that more patient women invested more in their children's education. The children have better educational attainment and health condition due to the mother's household decision. The proxy of individual time preference is attained only from hypothetical questions in which related to financial gain instead of educational and health gain. Other arguments that may arises is we assume that the time preference of one individual never changed during their lifetime. This study would help in designing education and health policy especially for children.

***Kata kunci**: micro and small businesses, challenges and obstacles, digitalization*
Klasifikasi JEL: P3

**ABSTRACT**

*Penelitian ini bertujuan untuk menguji hubungan antara preferensi waktu perempuan sebagai faktor pengambilan keputusannya dengan pendidikan anak dalam rumah tangganya. Model OLS menggunakan data Sakerti (IFLS) gelombang 5 tahun 2014. Kami menggunakan tanggapan terhadap pertanyaan pilihan hipotetis yang memiliki pengorbanan antarwaktu yang tersedia pada data survei untuk menentukan preferensi waktu individu. Hasil menunjukkan bahwa wanita yang lebih sabar berinvestasi lebih banyak dalam pendidikan anak-anak mereka. Anak-anak memiliki pencapaian pendidikan dan yang lebih baik karena keputusan rumah tangga ibu. Proksi preferensi waktu individu dicapai hanya dari pertanyaan hipotetis yang terkait dengan keuntungan finansial, bukan keuntungan pendidikan dan kesehatan. Argumen lain yang mungkin muncul adalah kita berasumsi bahwa preferensi waktu dari satu individu tidak pernah berubah selama hidup mereka. Studi ini akan membantu dalam merancang kebijakan pendidikan dan kesehatan..*

***keyword**: micro and small businesses, challenges and obstacles, digitalization*
*Klasifikasi JEL: P3*

## INTRODUCTION

Education has an important role in eradicating poverty. It is fundamental in developing the country (Wicesa&Setyanti, 2021) Education helps to increase potential incomes, expand labor mobility, improve the health of parents and children, reduce fertility and child mortality, and promote the voice of disadvantaged people in society and the political system (Klugman, 2002:231).

Education are central to the Indonesian government development agenda. Access to education has expanded broadly ever since the early 2000s. 12-year compulsory education policy has been established. Reports has suggested that Indonesia's participation rate, which is one of the benchmark of country's success, shows a remarkably high Gross Enrollment Rate (GER) and Net Enrollment Rate (NER) for primary, junior secondary, and secondary school for the past ten years (Wijaya, 2019) Meaning that the country itself could accommodate all of its school age population. But families whose children do not attend school goes unpunished (Kusumah, 2021). Since the supply side of education has increased, It is now the decision of household to enroll their younglings to school.

Though its advantages, education is known as slow moving sector, where its gains are not in anyway instant. People, especially parents believed that education for their offspring is an investment which returns could be apparent only in the long run (Becker 1962). Education of children plays an important role, but only available should the parents give out their own resource for their children's schooling. Due to its long-awaited return, parents make their decision in putting their children to school by measuring the cost and benefit at different points in time, thus an intertemporal decision making. people with high discount rates invest less in their future than people who are more future-oriented (e.g. Mincer 1958; Becker 1964). The policy implication is if the 12-year mandatory schooling is a necessity, it's established as a long-term investment that should be subsidized.

Parents, especially mothers has shown interesting impact on their children's education. Mothers' decision making is key because Maternal decision-making autonomy has been linked to positive outcomes for children's health and well-being early in life in low- and middle-income

countries throughout the world Rahman, et.al. 2015). A behavioral indicator of women has been widely studied in its capacity to impact women's and their children's outcomes. This study aims to examine the relationship between women's time preference as a factor of her decision-making and children's education within their household. The famous Stanford marshmallow experiment first highlighted the strong positive link between patience and educational attainment (Mischel et al., 1989)

**Literature Review**

There are few studies concerning parent's intertemporal choice on their children's well being, specifically education. Though several studies has shown interesting result on parent's behavior on their decision to their own offspring. By establishing that education is a risky investment, Nurrachmat and Sastiono (2022) in their studies found out that paren's risk behaviour could affect household education spending. A study of low-income country by Tanaka and Yamato (2015) shows interesting enrollment choice of children based on their parent's risk aversion and patience. It shows that patience increases the education expenditure while risk aversion delays enrollment of young children. The inter-temporal model shows that patience increases educational investment, which is a long investment should children study longer. By identifying education as an investment, Becker (1962) states how it's a risky decision. In developing countries, it could be risky due to uncertain quality of school and how sending children to are riskier than sending them to work instead. Due to its risk and the time taken to go to school, parent's risk aversion and patience would affect their decision for schooling.

**Identification Strategy**

We estimate the model using data from the latest 2014 survey from IFLS-5. We use responses to hypothetical choice questions which has inter-temporal tradeoffs available on the survey data to determine individual time preference. We examine the hypothesis using years of schooling using OLS. The empirical model is illustrated as follows

$$Y_i = \beta_0 + \beta_1 time_i + \gamma X_i + \varepsilon_{it}$$

It $Y_i$ describes how long children has been sent into school measured in years. The observations are child within the household who is past the age of the 12-year compulsory program, meaning that by the time we observed the children they should finish their study on any level (or not being sent to school at all) $time_i$ is the categorical time preference elicited from the hypothetical gambling uestion from Section SI. The specification is controlled with several control variables as shown on the variable description.

Table: Variable description

| VARIABLES | Description |
|---|---|
| Educ_2014 (dependent variable) | Years of schooling of children |
| Time (main explanatory variable) | Time preference elicited from hypothetical questions by scoring high horizon and low horizon game (higher value, more impatient) |
| | |
| Controls | |
| rel_inc2014 | Log of mother's income |
| Urut | Children's birth order in the household |
| Pkh | Whether or not the household gets conditional transfers program of Program Keluarga Harapan (PKH) |
| urban14 | Dummy equal to one if individual region of residence is in urban areas and zero otherwise |
| Jawa | Dummies of individual's ethnicity. only the largest majority on our specification (1=javanese, 0=otherwise) |
| hhsize1 | Household size |

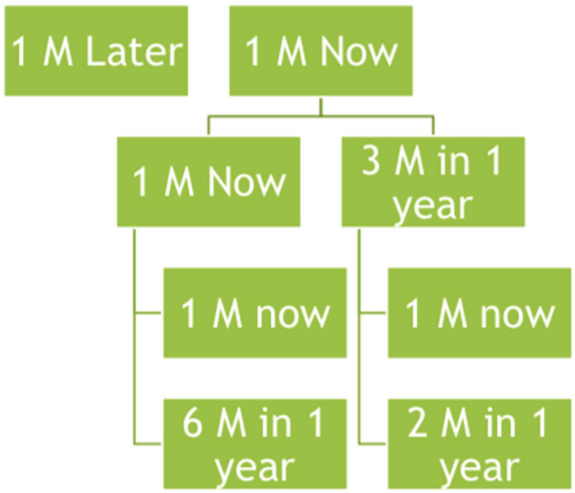
| | |
|---|---|
| age_w_2014, age_h_2014 | Age of mother and age of father during the period of observation |
| Age | Age of children |

Measuring Time Preference

Recent changes to panel survey data include self-reported data and hypothetical gambling questions as risk preference elicitation. Hypothetical gambling question and patience questions types are available in the fifth wave of IFLS. It was the only wave that included hypothetical gambling questions (Strauss, Witoelar, & Sikoki, 2016, Anandari&Nuryakin 2019). Therefore, we incorporated the data into our analysis

As with the the time preference questions, individuals were asked in two separate sets that I call Time A and Time B. Time A questions offer a higher annualized return than Time B questions and have a shorter time horizon (one year as opposed to five for the latter). Player (the individual 15 and up) will choose a hypothetical question on receiving certain amount of money today or somewhere in the future.

Figure: Time preference hypothetical question (low time horizon)



Before moving onto the longer time horizon and even before moving onto playing the game, individuals are sorted with test uestion to separate people who did not understand the game. The sorting questions are available in both short and long horizon game which asking whether individual wants to have the exact amount of money now or next year. The question asks "[Hypothetically] *If you're going to get 1 million rupiah, would you like to have it now or 1 year later*?" If individuals chooses "now" they'll be moved unto playng the game, otherwise dropped from the game in the next test question with more obvious choice ("*1 million today or 0.5 milion next year*"). These questions are available only in IFLS 5, section SI.

We now return to our research question, whether there is a relationship between time preferences and educational investment

**RESULT AND DISCUSSION**

**Table: Estimation result**

| VARIABLES | (1)<br>bols_r | (2)<br>bols_ur |
|---|---|---|
| Time | -0.0598** | -0.0800*** |
| | (0.0253) | (0.0305) |
| riskav_1 | | |
| rel_educ2014 | | -0.104** |
| | | (0.0522) |
| rel_inc2014 | | -0.00120 |
| | | (0.00188) |
| Urut | | -0.844*** |
| | | (0.146) |
| Pkh | | -0.574** |
| | | (0.264) |
| urban14 | | 0.732*** |
| | | (0.114) |
| Jawa | | -0.103 |
| | | (0.109) |
| hhsize1 | | -0.0726** |
| | | (0.0342) |
| age_w_2014 | | 0.0346*** |
| | | (0.0134) |

| | | |
|---|---|---|
| age_h_2014 | | 0.00681 |
| | | (0.0117) |
| Constant | 10.38*** | 9.743*** |
| | (0.172) | (0.492) |
| Observations | 2,705 | 1,592 |
| R-squared | 0.002 | 0.079 |

Table shows that both of the restricted and unrestricted model of the OLS suggest that the more impatient the mother could lead to lesser year of education attained by their children which confirms previous studies such as Tanaka and Yamato (2015) that suggest how intertemporal behavior affects parent's choice in sending their offspring to higher levels of education. One level of impatience leads to 8 percent less of time spent by children in school. This is an interesting finding because even though Indonesia has programmed the 12-year compulsory and some aspect of funding has been subsidized, people still sees spending longer time for education yields in a long time. Impatient people might chooses to get into the workforce immediately than spending some more time in school or even move forward to college or university.

**Conclusion and Recommendation**

Omitting individual behavior in explaining investment decision could lead to biased result. This study incorporates the inter-temporal choice behavior to suppress the bias and shows how mother's patience leads to longer time of children's education. This study is constrained with some limitations. The time preference questions are purely hypothetical, which could make respondent act differently if the stakes is real (Anandari&Nuryakin, 2019, Nurrachmat and Sastiono 2022) but previous studies by Dohmen (2011) suggested that hypothetical gambling question could project actual behavior. By selecting only specific time of observation we can't find how different it is our current education policy compared to previous one because enrolling in high school is significantly easier these days compared to before the 2000s. Though easier, time needed to be in school is still seen as long-yielding investment and thus affected by patience. Future studies could incorporate the discounted factor of return on education.

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