

A Comparative Study of Number of Children of Educated/ Uneducated Working and Educated/ Uneducated Non-Working Women in Gopalganj Town: A Microeconomic Household Fertility Analysis

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Abstract

The neoclassical microeconomic household theory of fertility reveals that the opportunity cost heavily affects the total cost for a child, in societies where mothers are engaged in work contributing disproportionate share of their time to child rearing. Increasing women's education, earning opportunities, women's empowerment lead to lower demand for children. The nature of these existing variables is being changed and new other variables are being introduced with the passage of time and continuing changes in our climate, environment and in the level of economic development. This paper surveys a variety of variables to explore the economic determinants of fertility and then summarizes the empirical findings that seek to explain mostly cross-sectional differences in individual/ family data in Gopalganj town. Differences between obtained data at one point in time are also shown to be consistent with the microeconomic approach to fertility with some trivial exception; some new other emerging variables – less significant but important – are found to affect the demand for children.

Keywords: Neoclassical Microeconomic Household Theory of Fertility, Opportunity Cost, Women's Empowerment, Cross-Sectional Differences, Emerging Variables.

1. Introduction:

Economic development is most closely associated with population. Population which is the important part of economic development depends on the fertility rate of a country. Fertility is a choice by parents from which they may receive satisfaction as consumers and benefit as producers from children's labor and care giving support. In addition, fertility may be the source of externalities that affect members of society other than the decision-making parents, in which case society may view fertility as a legitimate issue for social policy. Margaret Reid (1934) provided an early description of household production behavior, and her work is an important antecedent to Becker's formal modeling of the productive household. The cost of children is heavily affected by opportunity cost of the time of mothers, who in most societies contribute a disproportionate share of their time to child rearing. So, increasing women schooling and wage opportunities are consequently associated with lower demand for child (Schultz 1994).

Becker (1965) is best known for modeling household decisions and resource allocation in a model where a household is both a producing and consuming unit. According to Becker (1992), modern marriages and families are made by the joining of individuals, and as a consequence are more contingent upon decision-making and planning. Giddens describes how social relationships have become more democratic and he refers to democratic romantic relationships as pure relationships. According to him, "the imperative of free and open communication is the sine qua non of the pure relationship" (Giddens 1992).

Having children might be preceded by a long process of thought, reflection and discussion between partners. This decision process has not received much attention in empirical studies on fertility yet. Most fertility research is quantitative and focuses on determinants of fertility outcomes such as number of children and timing of birth. Yet, part of the demographic research that aims at explaining fertility outcomes implicitly assumes conscious decision-making, whether extensive or not, for instance, linking childbearing intentions to behavior or assuming

that people weigh costs and rewards of having children. To study how people decide on having children – how much thought they gave it, if they consciously weighed costs and rewards, what dilemmas they have faced and how they discuss to reach a decision for these.

Raut (1989) provided a structural explanation for the inverse household income-child quantity and negative child quality-quantity relationships that are observed in developing countries. Studies on the decision to have children usually only included either women (Den Bandt 1982; Gerson 1985; Luijn 1996; Wijzen 2002; Bernardi 2003; Sevón 2005) or, to a much lesser extent, men (Jacobs 1995; Lippe and Fuhrer 2004; Knijn, Ostner, and Schmitt 2006). Schultz (2007) explored that fertility is a choice coordinated by families with other life-cycle decisions, including labor supply of mothers and children, child human capital, and savings.

To forecast fertility and the conditions under which public policies might be justified to modify fertility, economists require a basic understanding of its determinants as well as social consequences. In approaching this topic from the perspective of Bangladesh today, the ideas of Malthus remain influential. He argued that population growth caused by high fertility erodes the welfare and productivity of workers, and thus social policy which fostered greater fertility, such as the English Poor Law, contributed to 'overpopulation'. Before considering how these spillover effects of fertility might be identified, an overview of historical thinking about the demographic – economic system may help to indicate the context in which Malthus's thinking was relevant to pre-industrial Europe, and how modern economics has extended his thinking to fertility as a lifetime choice of parents related to their time allocation and accumulation of human and physical capital.

Table 1: Trend of Population in Bangladesh over Last Fifty Years

Year	Population (In million)	Average ten years growth rate	Average one year growth rate
1961	51		
1971	67.6	32.55	3.26
1981	84.76	25.38	2.54
1991	110	29.78	2.98
2001	134.7	22.45	2.25
2011	152.8	13.44	1.34

Source: World Development Indicators

In Bangladesh, total population has increased to an alarming rate over the last fifty years. In 1961, total population in Bangladesh was about 51 million that increased to 67.6 million in 1971. Later on this figure reached to 84.76 million in 1981 and 110 million in 1991. After 2000, the fertility rate decreased. In 2001, the total population in Bangladesh reached to 134.7 million and 152.8 million in 2011. In 1961, Growth rate of population was 2.81% which declined to 1.96% in 1971. It again reached to 2.7% in 1981 which once again fell to 2.34% in 1991. In 2001 and 2011, fertility rates were 1.75% and 1.14% respectively.

There may have many reasons responsible for rapid population growth. Women's education, or empowerment, is one of them. The higher the women's literacy rate, the smaller is the fertility rate. Women's education and consciousness is reflected by the job. So, a woman having job (working woman) has less incentive to have children because it incurs cost including time and income. But, a woman not having job (non-working women) has relatively more incentive to have children than that of women having job (working women). Level of education is one of the variables but important and it is understand the trend of growth of population.

Governments of developing countries are increasingly anxious about the rapid population growth and playing a major role together with many NGOs to control population growth. As the death rate declines, birth rate should also decline. In this regard, government has to play a significant role to enhance female education and create available jobs for them so that they (women) can have jobs after completing their institutional education. Because, female education and working environment have a significant effect on birth rate. Household microeconomic theory of fertility asserts that the higher the net price of children (opportunity cost of having children), the lower the quantity demanded. Children are considered as a special kind of consumption (and in developing countries, particularly low income countries, investment) good so that fertility becomes a rational economic response to the consumer's (family's) demand for children relative to other goods. So, from this study we will be able to understand whether there is positive effect of government programs to enhance women education.

In developing countries, achieving higher female education rate is one of the keys to reducing fertility levels. As education levels rise, fertility falls for several reasons: women who can read and write tend to become more knowledgeable about family planning and more likely to use contraceptive methods. Whether in urban or rural areas, educated population speeds the diffusion of information about family planning, education, and health care. Women with higher education are also more likely to have interests outside their immediate family, and to play social roles beyond child bearing. They marry later than women with less education, and also they are older when they have their first child than women with medium or lower education. The share of women without children is also higher among the higher educated. (Agtmaal et al., 2008) Their family size is accordingly smaller. Also, because educated women are better informed about health and hygiene, and typically live in better conditions, greater number of their children survive. Their fertility need not be as high to achieve their desired family size.

2. Objectives

The objectives of the study are as follows.

- To explore the relationship between family income and child having tendency, between cost of children and child having tendency and between female education (job or empowerment) and fertility rate.
- To understand the realities of neoclassical microeconomic household theory of fertility.
- To investigate whether there is any new variable influencing the fertility rate that was not incorporated in the neoclassical microeconomic household theory of fertility.
- To present some generalized policy measures that would be helpful to combat the rapid population growth in national level along with this area.

To carry out this research work, primary data are collected in four categories namely educated working women, educated non-working women, uneducated working women and uneducated non-working women. The total sample size is 120, each category including 30 respondents. The study area is Gopalganj town.

3. Methodology

According to the conventional theory, an individual is supposed to maximize the satisfaction derived from consuming a range of goods subject to his or her own income constraint and the relative prices of all goods with a given set of tastes or preferences for these goods (a “utility function”). Children are considered as a special kind of consumption (and in developing countries, particularly low income countries, investment) good in the application of this theory to fertility analysis so that fertility becomes a rational economic response to the consumer’s (family’s) demand for children relative to other goods. Mathematically, the child demand function can be expressed as follows:

$$C_d = f(Y, P_c, P_x, t_x) \quad x = 1, \dots, n \quad (1)$$

where C_d , the demand for surviving children, is a function of the given level of household income (Y), the “net” price of children (the difference between anticipated costs, mostly the opportunity cost of a mother’s time, and benefits, potential child income and old-age support, P_c), the prices of all other goods (P_x), and the tastes for goods relative to children (t_x). If other factors are held constant, we would expect the following (expressed both mathematically and in words):

$\frac{\partial C_d}{\partial Y} > 0$ The higher household income will lead to the greater demand for children.

$\frac{\partial C_d}{\partial P_c} < 0$ The higher net price of children will lead to the lower quantity demanded.

$\frac{\partial C_d}{\partial P_x} > 0$ The higher prices of all other goods relative to children will lead to the greater quantity of children demanded.

$\frac{\partial C_d}{\partial t_x} < 0$ The greater strength of tastes for goods relative to children will lead to the fewer children demanded.

In this study the relationship among child demand, family income, total cost of children and women’s education (empowerment) will have to be carried out in an attempt to investigate their effect on child demand. (Todaro and Smith, 2011)

4. The Economic Framework

4.1 General Considerations

In societies lacking knowledge of contraception, control over the number of births can be achieved either through abortion or abstinence, the latter taking the form of delayed marriage and reduced frequency of coition during marriage. Since each person maintains some control over these variables, there is room for decision-making even in such societies. Other things remaining the same, couples desiring small families would marry later and have more abortions than the average couple. Yet the room for decision making would be uncomfortably small, given the taboos against abortion, the strong social forces determining the age of marriage, and

the relative inefficiency of reductions in the frequency of coition. Chance would bulk large in determining the distribution of births among families.

The growth of knowledge about contraception has greatly widened the scope of decision-making, for it has separated the decision to control births from the decision to engage in coition. Presumably, such a widening of the scope of decision-making has increased the importance of environmental factors, but which of the numerous environmental factors are most important? To simplify the analysis of this problem one can assume initially that each family has perfect control over both the number and spacing of its births.

For most parents, children are a source of psychic income or satisfaction, and, in the economist's terminology, children would be considered as consumption good. Children may sometimes provide money income and then become an investment good as well. Moreover, neither the outlay on children nor the income yielded by them are fixed but vary in amount with the child's age, making children a durable consumption and investment good. It may seem strained, artificial, and perhaps even immoral to classify children with cars, houses, and machinery. This classification does not imply, however, that the satisfactions or costs associated with children are morally the same as those associated with other durables. The satisfaction provided by housing, a "necessity," is often distinguished from that provided by cars, a "luxury," yet both are treated as consumer durables in demand analysis. Abstracting from the kind of satisfaction provided by children makes it possible to relate the "demand" for children to a well-developed body of economic theory.

4.2 Tastes

As consumer durables, children are assumed to provide "utility." The utility from children is compared with that from other goods via a utility function or a set of curves. The shape of the indifference curves is determined by the relative preference for children, or, in other words, by "tastes." These tastes may, in turn, be determined by a family's religion, race, age, and the like.

This framework permits, although it does not predict, fertility differences that are unrelated to "economic" factors.

4.3 Quality of Children

A family must determine not only how many children it has but also the amount spent on them—whether it should provide separate bedrooms, send them to nursery school and private colleges, give them dance or music lessons, and so forth. We will call more expensive children "higher quality" children. If more is voluntarily spent on one child than on another, it is because the parents obtain additional utility from the additional expenditure and it is this additional utility which we call higher "quality."

4.4 Income

An increase in income will increase the amount spent on the average good, but not necessarily on each good. The major exceptions are goods that are inferior members of a broader class. Since children do not appear to be inferior members of any broader class, it is likely that a rise in long-run income would increase the amount spent on children.

For almost all other consumer durables, such as cars, houses, or refrigerators, families purchase more units as well as better quality units at higher income levels. If expenditures on children responded in a similar way, most of the increased expenditures on children would consist of an increase in the quality of children.

Malthus, on the other hand, concluded that an increase in income would lead to a relatively large increase in family size. His argument has two major components. First, an increase in income would cause a decline in child mortality, enabling more children to survive childhood. If a decrease in births did not offset the decrease in child mortality, the number of children in the average family would increase. His second argument is less, mechanical and takes greater account of motivation. An increase in income increases fertility by inducing people to marry earlier and abstain less while married.

4.5 Cost

In principle the net cost of children can be easily computed. It equals the present value of expected outlays plus the imputed value of the parents' services, minus the present value of the expected money return plus the imputed value of the child's services. If net costs were positive, children would be on balance a consumer durable and it would be necessary to assume that psychic income or utility was received from them. If net costs were negative, children would be a producer durable and pecuniary income would be received from them. Children of many qualities are usually available, and the quality selected by any family is determined by tastes, income, and price. For most families in recent years the net expenditure on children has been very large.

A change in the cost of children is a change in the cost of children of given quality, perhaps due to a change in the price of food or education. It is well to dwell a little on this definition for it is widely misunderstood. A change in price has to be estimated from indexes of the price of a given quality. Secular changes in real income and other variables have induced a secular increase in expenditures on children, often interpreted as a rise in the cost of children. The cost of children may well have risen but the increase in expenditure on children is no evidence of such rise since the quality of children has risen. Today children are better fed, housed, and clothed, and in increasing numbers are sent to nursery schools, camps, high schools, and colleges. For the same reason, the price of children to rich parents is the same as that to poor parents even though rich parents spend more on children. The rich simply choose higher quality children as well as higher qualities of other goods.

It is sometimes argued that social pressures "force" richer families to spend more on children, and that this increases the cost of children to the rich. This higher cost is supposed to explain why richer families have fewer children than others and why richer societies have fewer children than poorer ones. However, since the cost of different goods is given in the market

place, social pressures cannot change this, but can only change the basket of goods selected. That is, social pressures influence behavior by affecting the indifference curve structure, not by affecting costs. To put this differently, social pressures may affect the income elasticity of demand for children by rich (and poor) families, but not the price elasticity of demand. Therefore, the well-known negative relationship between cost (or price) and quantity purchased cannot explain why richer families have had relatively few children. Moreover, nothing in economic analysis implies that social pressures would make the quantity income elasticity of demand for children negative. Thus my conclusion that the quantity income elasticity is relatively small but positive and the quality elasticity relatively large is entirely consistent with an analysis which emphasizes social pressures.

4.6 Supply

By and large, children cannot be purchased on the open market but must be produced at home. Most families are no longer self-sufficient in any major commodity other than children. Because children are produced at home, each uncertainty in production is transferred into a corresponding uncertainty in consumption, even when there is no uncertainty for all families taken together. Although parents cannot accurately predict the sex, intelligence, and height of their children, the distribution of these qualities is relatively constant for the country as a whole. This uncertainty makes it necessary to distinguish between actual and expected utility. Thus suppose a group of parents received marginal utility equal to U_m from a male child and U_j , from a female child. The expected utility from an additional child equals $EU = PU_m + (1 - P)U_j \cong \frac{U_m + U_j}{2}$ where P, the probability of a male is approximately equal to 1/2. They would have additional children whenever the expected utility per dollar of expected cost from an additional child were greater than that from expenditures elsewhere. The actual utility is either U_j or U_m , which differs from EU as long as $U_j \neq U_m$. In fact, if U_j (or U_m) were negative, some parents would receive negative utility.

A second important consequence of uniting consumption and production is that the number of children available to a family is determined not only by its income and prices but also by its ability to produce children. One family can desire three children and be unable to produce more than two, while another can desire three and be unable to produce fewer than five." The average number of live births produced by married women in societies with little knowledge of contraception is very high.

Relatively effective contraceptive techniques have been available for at least the last 100 years, but knowledge of such techniques did not spread rapidly. Religious and other objections prevented the rapid spread of knowledge that is common to other technological innovations in advanced countries. Most families in the nineteenth century, even in advanced Western countries, did not have effective contraceptive information. This information spread slowly from upper socio-economic groups to lower ones.

Each family tries to come as close as possible to its desired number of children. If three children are desired and no more than two are available, two are produced; if three are desired and no fewer than five are available, five are produced. The marginal equilibrium conditions would not be satisfied for children but would be satisfied for other goods, so the theory consumer's choice is not basically affected. Families with excess children consume less of other goods, especially of goods that are close substitutes for the quantity of children. Because quality seems like a relatively close substitute for quantity, families with excess children would spend less on each child than other families with equal income and tastes. Accordingly, an increase in contraceptive knowledge would raise the quality of children as well as reduce their quantity.

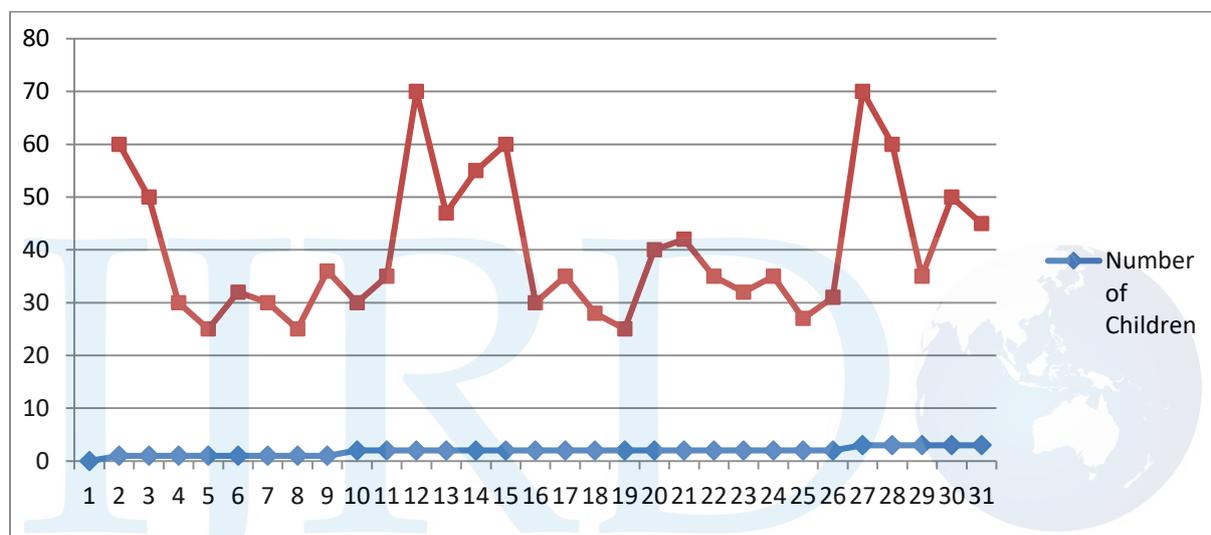
5. The Empirical Analysis

In this section, the empirical relationship existing between number of children and family income, between numbers of children and cost of children and between number of children and women's literacy will be investigated.

5.1 Family Income and number of Children

Conventional theory showed that demand for children is positively related with the level of family income. To establish this relationship we will present the family income and demand for children graphically. The graph below shows the relationship between the variable considered.

Figure 1: Relationship between Family Income and Number of Children: Educated Working Women



The graph above explores the positive relationship between number of children and family income, although the relationship is not strong. Here monthly family income is considered. The rationale here is that the higher level of family income can afford the expenditure for more children. In the modern society, the expenditure for child bearing and child education is increasing day by day. So, more children entail higher level of cost.

Figure 2: Relationship between Family Income and Number of Children: Educated Non-working Women

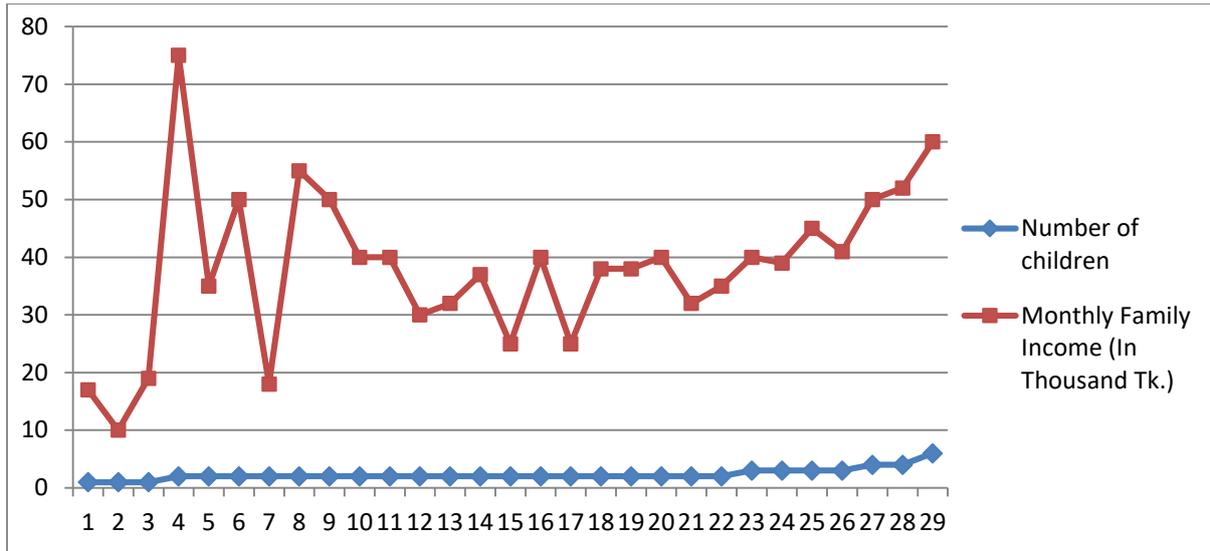
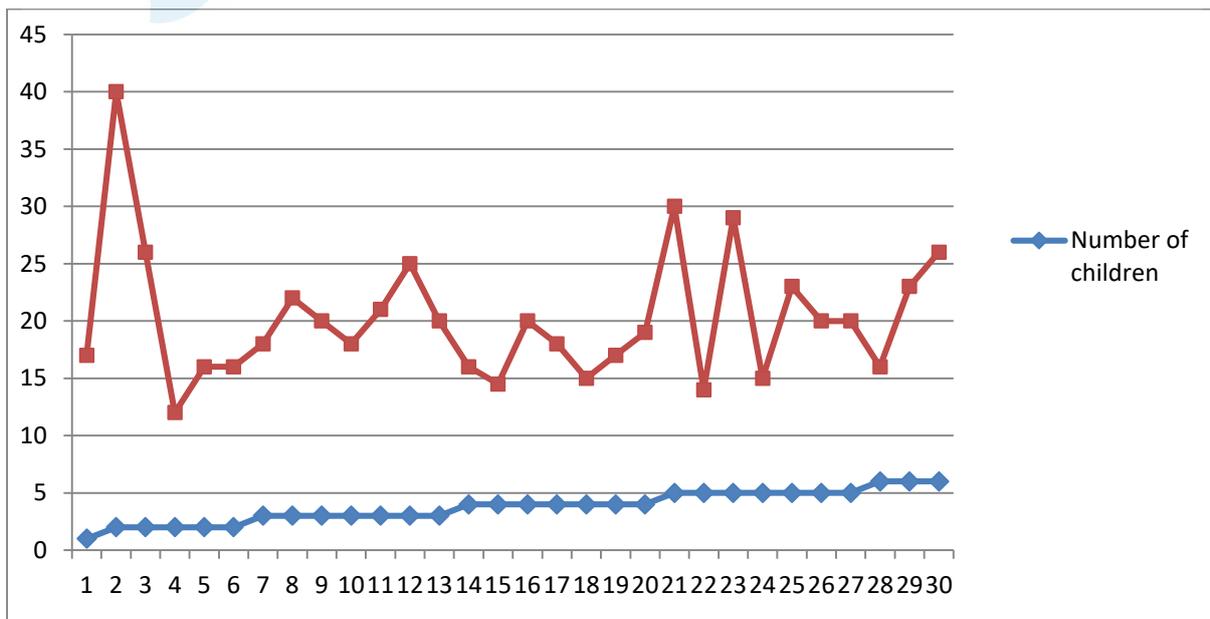


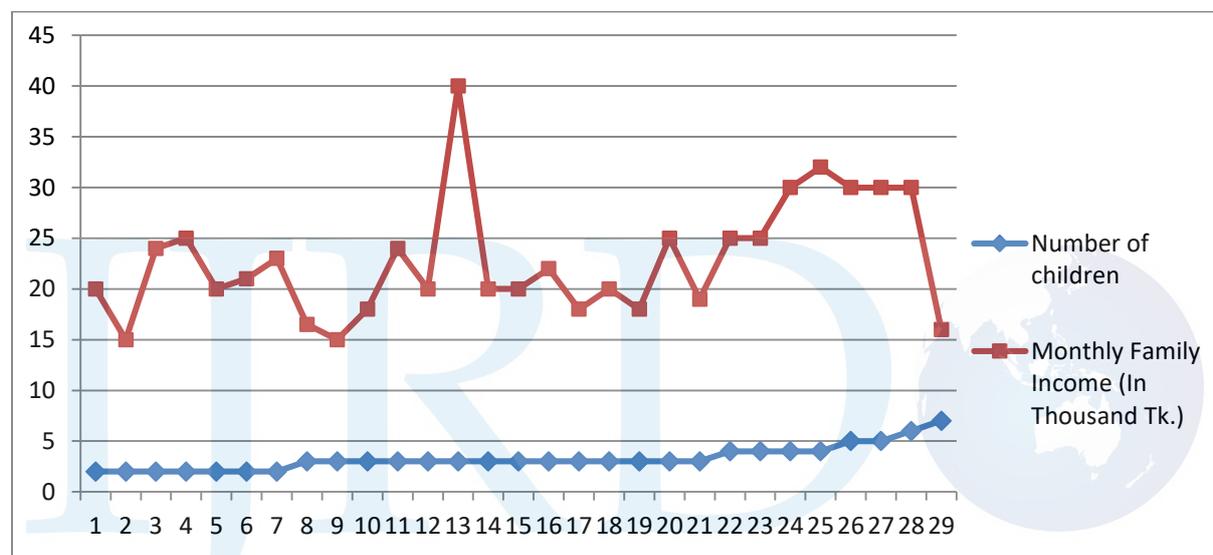
Figure 2 also shows positive nexus between number of children and monthly family income. This category of sample also establishes the neoclassical theory of fertility. In this case, the maximum number of children of a couple is found as 6 (six). This might be due to non-working condition of women. There is little or no opportunity cost of having children and the couple is indifferent between having and not having children.

Figure 3: Relationship between Family Income and Number of Children: Uneducated Working Women



The figure above cannot reveal clearly whether there is any relation between the number of children and monthly family income. We cannot draw any valid conclusion from such a graph. Because if we draw a trend line across the income line, it will look like parallel to the horizontal axis which will tell us that number of children is invariant with the level of family income. This may be the case due to lack of education and consciousness of women.

Figure 4: Relationship between Family Income and Number of Children: Uneducated Non-working Women



The figure above reveals the existing positive nexus between the two variables. Uneducated non-working women group is also confirming the established relationship in the neoclassical theory of fertility. All but the uneducated working women category shows no causal nexus between the level of family income and number of children of the couple in the study area.

5.2 Total Cost for a Child and Number of Children

Total cost for a child includes the bearing cost of a child up to three years from birth, opportunity cost of having children and cost for education (primary, secondary, higher secondary and tertiary). According to the traditional theory, the higher the cost for a child, the lower should be the number of children of a couple. Now we will investigate the relationship between the total cost for a child (including rearing cost, opportunity cost and cost for

education) and number of children of a couple with suitable graphs. To investigate the relationship we have to take four graphs as were in previous section.

Figure 5 shows the relationship between total expenditure per child and number of children of a couple. The figure confirms the negative nexus between the variables considered, i.e., the number of children of couple increases with the fall in cost for it.

Figure 5: Relationship between Total Cost for a Child and Number of Children of a Couple: Educated Working Women

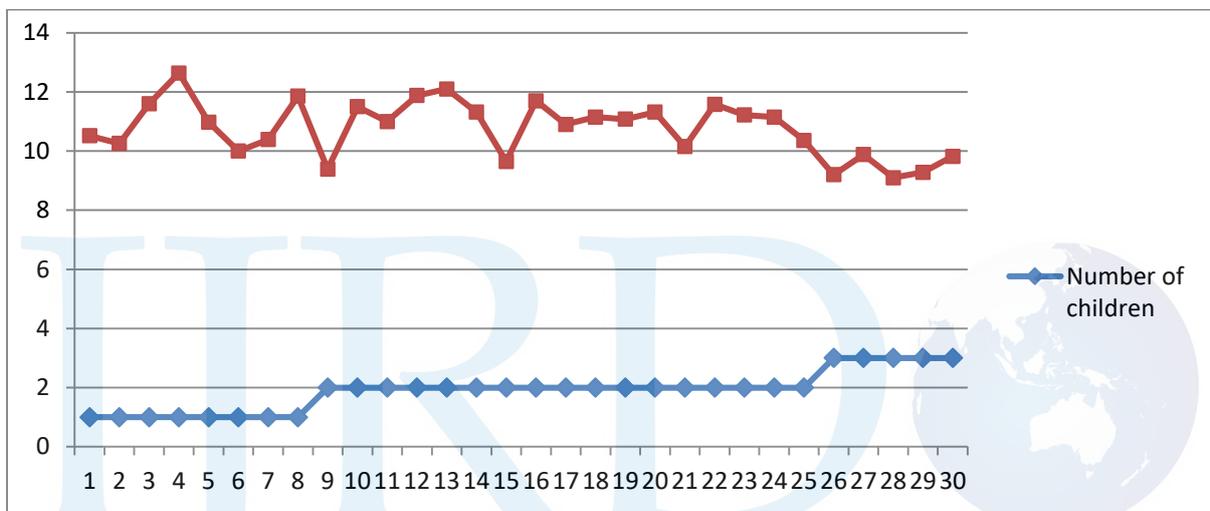
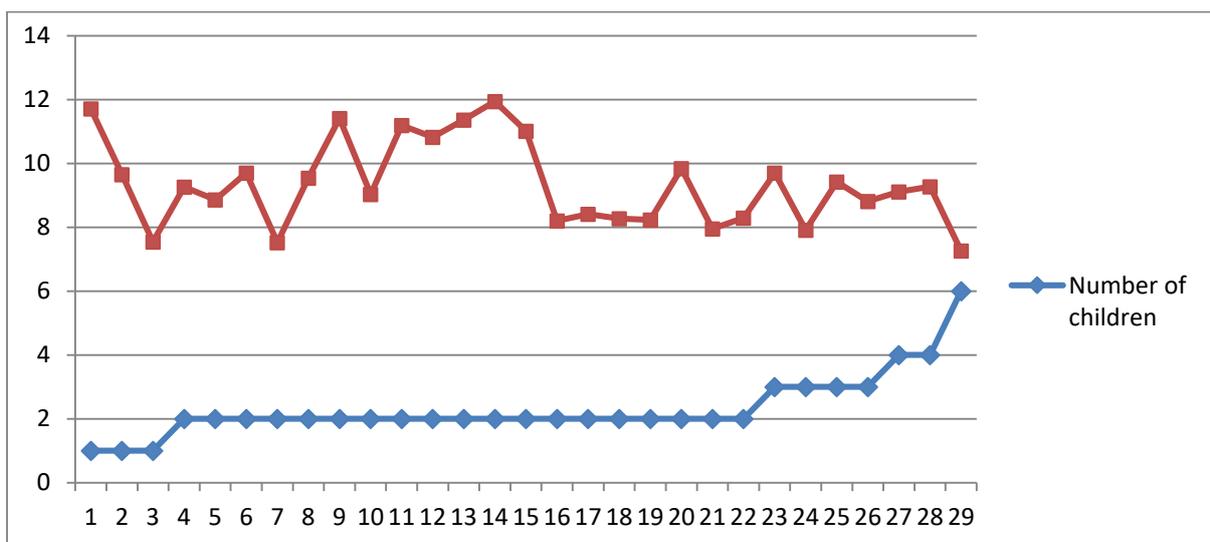
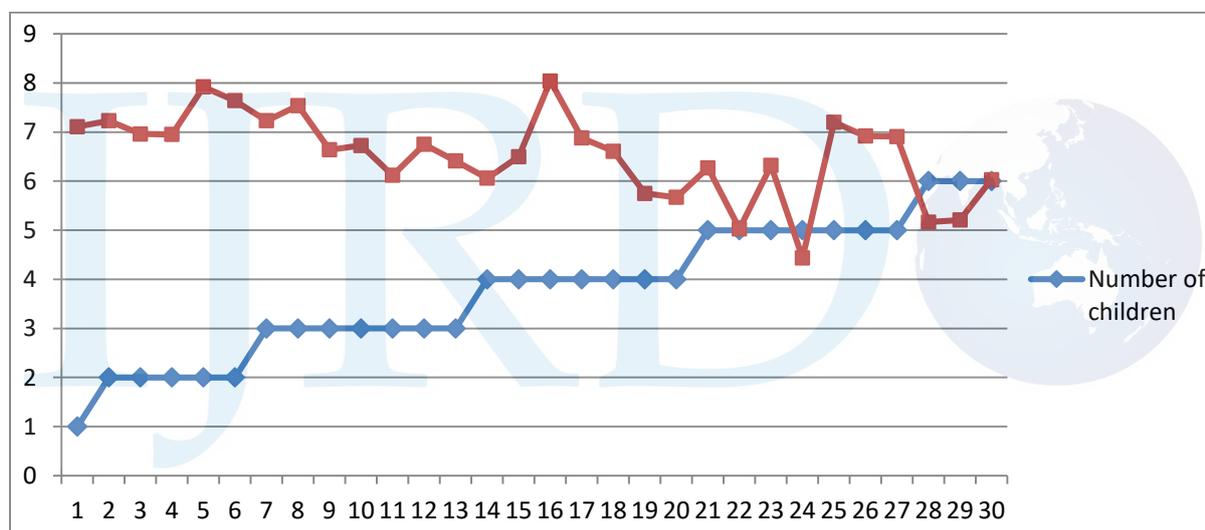


Figure 6: Relationship between Total Cost for a Child and Number of Children of a Couple: Educated Non-working Women



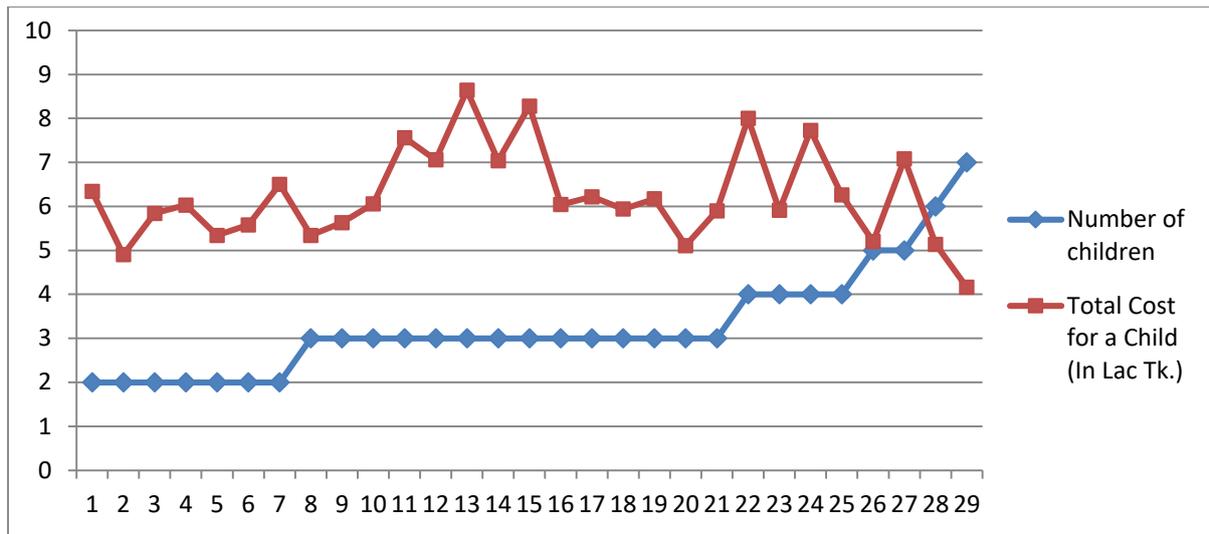
The figure above shows the negative nexus between the variable concerned. Firstly, there is somewhat positive relation to some extent. But after some stage, it shows the negative nexus, i.e., the number of children rises with the fall in total expenditure per child.

Figure 7: Relationship between Total Cost for a Child and Number of Children of a Couple: Uneducated Working Women



The figure above shows a somewhat negative relationship between the two variables. The causes of loose negative causality may be possibly the unconsciousness of the mother. They are somewhat indifferent of the number of children.

Figure 8: Relationship between Total Cost for a Child and Number of Children of a Couple: Uneducated Non-working Women

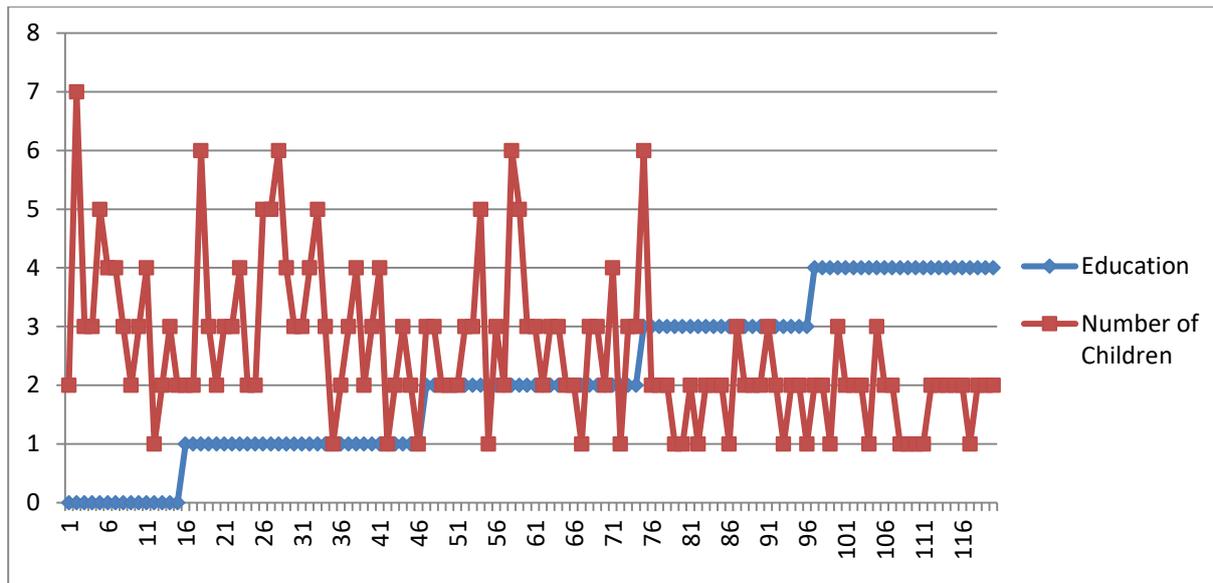


Finally the figure 8 explores the no relationship between the two variable considered, i.e., there is neither positive nor negative strong causal relationship between the variables. It may be the result of lack of education and consciousness. For the lack of education and consciousness, a woman especially a couple cannot think of the future. So they are unconcerned about the number of children they have irrespective of the level of family income. Actually they cannot think of the proper education of their child rather they think of the future income of their child that will add to the total family income.

5.3 Women Education and Number of Children

Level of education is expected to be inversely related with the number of children. The reason behind this is the consciousness acquired by the educated persons; the educated persons can have full flow of information and exposed to the world so that they are motivated to have small number of children. We will look at the real scenario of the study area. Education is indicated by none (0), primary (1), secondary (2), higher secondary (3) and tertiary level (4).

Figure 9: Relationship between Female Education and Number of Children



The figure above establishes the inverse relationship between the level of women education and number of children. Educated women are conscious about the family income, child health, cost for child, cost for education etc. So they have knowledge for how many children to have.

6. Average Number of Children and Average Income per Family

We can also show the relationship between family income and number of children by averaging the family income and number of children. It is shown with the help of pie chart diagram.

Figure 10: Average Family Income in Percentage and Average Number of Children in Percentage

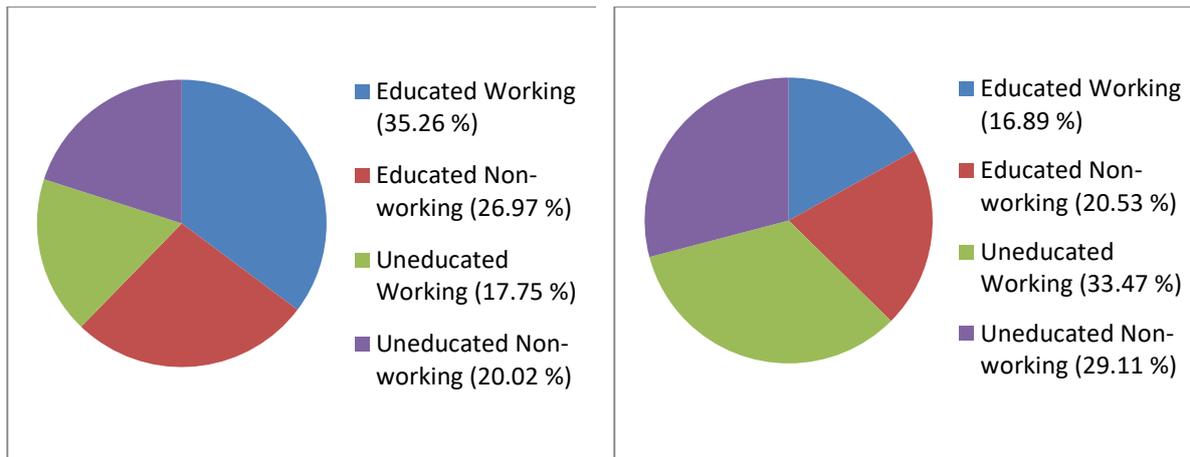


Figure: Average Family Income in Percentage

Figure: Average Number of Children in Percentage

The pie diagram above shows the average family income and average number of children per family which is percentage of the total number (total average of the four groups). From these pie diagrams we see that average percentage income of educated working group of women has largest volume of family income but smallest average percentage of number of children. And uneducated working group of women has smallest volume of family income and largest number of children. Family income is one of the most important factors which determine the number of children.

7. Realities of Neoclassical Theory

The main theme of neoclassical household theory of fertility is established by this research except the no relationship between the family income and number of children of uneducated working women and no relationship between the total cost for a child and the number of children of a couple. There are some other variables – that influence the child having decision of a couple – encountered in the study area which are seemed to less significant but important in influencing the decision. These findings are stated below.

8. Other Major Findings

Analyzing the results above, firstly, we find education as the most important factor determining the number of children of a couple. An educated and conscious woman or a couple is one who

can make perfect foresight about the future. So they can make a planned family which will face no problem. Secondly, child having tendency is much less in educated working women. For them the opportunity cost is much higher compared with the other women. For most cases, the average number of children of an educated working woman is one. But for other women it is greater than one and around two for the most cases.

Thirdly, one of the significant variables that cause the number of children of a couple to vary is cost of delivery of a child– both financial and physical cost. Now-a-days more than 80% of the deliveries of new born babies are done Caesarian operation. It incurs both financial and physical cost. In case of Caesar, on the one hand, a mother has to take rest up to 6 months and she has to be very careful, on the other hand, a mother can undergo at most two caesarian operations. The physical cost along with financial cost forbids the mother to take more children. There is the rationale of caesarian operation. The tendency of automatic abortion at the period of pregnancy period seems to be increased. Moreover, infant mortality from the womb is a common case now-a-days. That being the reason, no parent wants to take the risk of natural delivery.

Fourthly, one more factor influencing the child having tendency- less significant but seems to have some influence- is beauty consciousness among the mother. Having more children tends to spoil the beauty of the mother which forbids them to have more children. Fifthly, the cost of education is rising with the passage of time. It is becoming very hard day by day for the parents to afford the expenditure of education of their children- especially for family of fixed income. Thus, rising education expenditure is one of the significant variables forbidding having more children.

Sixthly, rising level of general price level – continuous inflationary pressure – is creating extra pressure on parents to afford the family expenditure. This is creating pressure on education expenditure as well. Hence, the parents – those who have a will having one more child – are

bound to leave that decision for the rising price level, since they face difficulty to run the family well.

After analyzing the above stated reasons, we are to say that the number and nature of the variables of neoclassical household theory of fertility is changing with the passage of time due to the change of the environment and world economy. World economy, its characteristics, medical science, medication, climate, weather etc. are changing continuously and steadily. By the grace of improvement in medical science, medicine and medication, the state of human especially the health of the mother is being improved. But many new virus affected contagious diseases, on the one hand, raises the tension of world health organization, many new problems associated with the pregnancy, on the other hand, are being encountered continuously. That being the reason, the cost for having a child is increasing because a mother needs very much careful treatment and services which entails higher level of cost.

9. Summary and Policy Implication

This paper has aimed at explaining the causal nexus between the number of children of a woman and the variables influencing it, i.e., family's monthly income, total cost for a child and women's education etc. using the cross section data obtained from the Gopalganj town which includes four categories of women namely educated working, educated non-working, uneducated working and uneducated non-working women, finding also some other variables that influence the reproductive decision now-a-days but not mentioned in the neoclassical household theory of fertility. To do so we find realities of the neoclassical theory, i.e., household income is positively related with the number of children of a couple in all but uneducated working category of women, total cost for child is inversely related with the number of children of a couple in all but uneducated non-working category of women. Women's education has a negative impact on the child having tendency which is established by this study.

This study also explored some new other variables than the neoclassical theory included namely (a) education for women, (b) working scope for women, (c) caesarian cost (both financial and physical) of child delivery, (d) beauty consciousness among the women, (e) rising level of cost for education, and (f) rising level of price, i.e., inflation. All these variables have negative impact on the child having tendency.

In the light of above discussion, we can mention some policies which could be effective in controlling the growth of population in Bangladesh in national level. Firstly, government should spread the women education rapidly which is on the prime emphasis of the present government. To do so, government has freed the women's education up to the higher secondary level and in addition, is giving stipend four times a year. Government is also thinking to free the education for women up to the honors and masters level which will have far-reaching impact on fertility of women especially on the growth rate of population.

Secondly, government should come forward to widening the working scope of women side by side private enterprises – as working women try to have fewer children due to the high opportunity cost. Thirdly, health service for the mother has to be certain to lower the child mortality rate and automatic abortion. Fourthly, rising level of cost for a child, on the one hand, has a negative impact on child having tendency, it is also harmful, on the other hand, because it will slacken the growth pace of level of education which is very much needed to enhance consciousness among the society, especially among the women to reduce the reproductive rate. So, education cost should be checked (Cette et al., 2005).

Fifthly, inflation reduces the purchasing power of the existing income level worsening the household purchasing which has negative impact on the health of the family member. Therefore, inflation level should be checked by government. Sixthly, family planning should be made easily accessible by the common people of Bangladesh – making skilled man power to strengthen it, community clinic must be made modernized with skilled and man power to

disseminate the family planning information and services – to check the growth rate of population.

References

- [1] Agtmaal et al., (2008), “The Relationship between Fertility and Women’s Education Level in Netherlands”, *EPC Seminar Paper*.
- [2] Axinn, W.G., Clarkberg, M.E. and Thornton, A., (1994), “Family influences on family size preferences”, *Demography*, 31(1): 65-79.
- [3] Becker, G.S., (1960), “An Economic Analysis of Fertility”, *Columbia University Press*, p. 209 – 240
- [4] Bourguignon, F. and Chiappori, P.A., (1994), “The collective approach to household behaviour”, *The Measurement of Household Welfare*, Cambridge, Cambridge University Press, 70-85.
- [5] Bourguignon, F., (1999), “The cost of children: may the collective approach to household behavior help?”, *Journal of Population Economics*, 12, 503-521.
-
- [6] Cette et al., (2005), “Opportunity Costs of Having a Child, Financial Constraints and Fertility”, *Notes D’études Et De Recherche*.
- [7] Delaney, P., (2009), “What Do Parents Want? Factors Affecting Parental Decisions in Charter School Enrollment”, *Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University*.
- [8] Donni, O. (2001), “Collective female labor supply: theory and application”, *Mimeo, D’epartement d’economique, Universit’e Laval*.
- [9] Easterlin, R.A., Pollak, R. and Wachter, M.L., (1980), “Toward a More General Economic Model of Fertility Determination: Endogenous Preferences and Natural Fertility”, *National Bureau of Economic Research*, p. 81 – 150.

- [10] Fawcett, J.T., (1988), "The value of children and the transition to parenthood", *Marriage and Family Review*, 12 (3-4): 11-34.
- [11] Hoffman, L.W. and Hoffman, M.L., (1973), "The value of children to parents", *Psychological perspectives on population*, New York: Basis Books: 19-76.
- [12] Huffman, W.E.(2010), "Household Production Theory and Models", *Iowa State University*, W.P. No. 10019.
- [13] Jones, L.E., Schoonbroodt, A. and Tertilt, M., (2008), "Fertility Theories: Can They Explain the Negative Fertility-Income Relationship?", *National Bureau of Economic Research*.
- [14] Knijn, T.C.M., Ostner, I. and Schmitt, C., (2006), "Men and (their) families: Comparative perspectives on men's role and attitudes towards family formation", *Social policy, employment and family change in comparative perspective*, Cheltenham: Edward Elgar: 179-198.
- [15] Kokolj, Z., (2007), "Explaining Households' Reproductive Behaviour: An Analysis of Competing Models", *Saskatchewan Economics Journal*.
- [16] Manser, M. and Brown, M., (1980), "Marriage and household decision-making: a bargaining analysis", *International Economic Review*, 21, 31-44.
- [17] Praag, V.B. and Warnaar, M., (1997), "The cost of children and the use of demographic variables in consumer demand" in M.R. Rosenzweig and O. Stark (eds.), *Handbook of Population and Family Economics*, Amsterdam, North-Holland, 241-273.
- [18] Raut, L.K., (1991), "Capital Accumulation, Income Distribution and Endogenous Fertility in an Overlapping Generations General Equilibrium Model", *Journal of Development Economics*, 34, 123-150.
- [19] Rijken, A.J. and Knijn, T., (2008), "Explaining Dutch fertility rates in a comparative European perspective", *European Societies*, 10(5): 763-786.

- [20] Rijken, A.J. and Knijn, T., (2009), “Couples’ Decisions to have a First Child: Comparing Pathways to Early and Late Parenthood”, *Demographic Research*, Volume 21, Article 26 Pages 765-802.
- [21] Schultz, T.P., (1990), “Testing the neoclassical model of family labor supply and fertility”, *Journal of Human Resources*, 25, 599-634.
- [22] Schultz, T.P., (1994), “Demand for Children in Low Income Countries”, *Economic Growth Center*, Yale University.
- [23] Schultz, T.P., (2007), “Fertility in Developing Countries”, *Economic Growth Center*, Yale University.
- [24] Thomson, E., (1997), “Couple childbearing desires, intentions, and births”, *Demography*, 34(3): 343-354.
- [25] Thomson, E., McDonald, E. and Bumpass, L.L., (1990), “Fertility desires and fertility: Hers, his, and theirs”, *Demography*, 27(4): 579-588.
- [26] Todaro and Smith, (2011), “Economic Development”, *Pearson*.
- [27] Vermeulen, F., (2002), “Collective household models: principles and main results”, *Centre for Economic Studies*.