Continued

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Lecture Note

Gender Economics (EE364)

Chapter 5: Supply and demand factors determining gender-related differences in occupation and income, and gender roles switching in occupation

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5.5 Labor Supply Factors – Human Capital Investment

Human Resources could be measured in terms of quantity (or population size) and quality (or human capital). A country's population is one of the country's key assets - efficiency and productivity. Human capital is the main tool of production and all economic activities of a nation. Human capital could be measured by the abilities, skills, and knowledge of the population in the country. Policy focuses on human resource development through education, training, regulations in the labor market. Policies are related to human resources related to immigration, family, wages, labor market. This can improve the welfare of the population and the country.

5.5.1 The importance of human resources

(1) Adam Smith (1970) defines human resources as sources of the country's wealth (labor productivity and division of labor based on specialization. Therefore, "The Wealth of a nation depends upon (1) the productivity of labor; and (2) the proportion of laborers who are usefully or productively employed". After the World War II, human resources are the center of some countries' development. For example, Japan and Germany rapidly recovered through high investment in human resources development. Education is the key of human resource development.

(2) Solow (1957) focuses on the "Technological Change and the Aggregate Production Function" to economic growth. The production function is related to technological change and economic development. Labor is a key component of production; therefore, education is a form of investment and a key contributor to economic growth.

(3) Schultz (1960) focuses on "Capital Formation by Education" and emphasizes the role and importance of human resources. Investment in education is a key factor in the country's economic development. Developing production efficiency and domestic productivity is the main principle to increase the productivity of the country as a whole. Education plays a primary role in human capital investment.

5.5.2 Human resource development

In addition to investment in education, human resource development can be done through various channels by developing the following factors, including (1) Family (family relationships/decision making); (2) Education (formal vs. informal); (3) Training (before and during work); (4) Health (physical and mental); (5) Migration (Rural/Urban/Overseas); (6) Working information in the labor market; (7) Working regulations/law; (8) Environment

The definition of Human capital is skills, knowledge, health, and other personal factors that promote each person's development. Human capital is contained in the persons themselves, and no one can take it or separate it from that person. Gratton and Ghoshal (2003) add aspects to the definition of human capital. Human capital is the sum of three main components:

(1) Intellectual capital is the knowledge, ability, expertise, and accumulated skills and experience of a specific person.

(2) Social capital is a relationship, a network of social structures. Human connection via a network includes relatives, community, society, and organization in which people live.

(3) Emotional capital is the cognition involved in managing emotions, such as an individual's self-awareness, self-esteem, and flexibility.

Therefore, investing in human capital involves a higher investment in education, training, and professional learning. Significant investments in human capital include investments in education, training, and higher professional learning.

5.5.3 Human capital model

The human capital investment decision model is considered in the case of a perfectly competitive labor market (or educational theory). According to the basic assumptions of the human capital model, higher education increases productivity and wages later. Consequently, each worker will decide to invest in education based on their financial benefit/cost. Educational investment decisions will consider costs (actual expenses incurred and lost wages because the workers cannot work during their studies) and benefits (higher wages received and better job opportunities in the future).

Example: Decision to study in the undergraduate level – A person will consider cost and benefit before making a decision. Cost included direct and indirect expenses such as tuition and expenses related to books and other equipment, loss of income during studying, and

psychological costs. Benefits are higher future income (from the higher education). For example, if a person decides to study bachelor's degree, this person will get better jobs in the future, both in terms of income and future career path (compared to high school graduates).

Human capital investment – The decision to invest in human capital relies on comparing the expected future benefits with the resources required to invest in the present. However, the benefits people will receive do not occur now or at the investment time. Instead, benefits tend to be delayed. How can we calculate the benefits of investing in education? We need to compare costs incurred with benefits (or the present value of future earnings).

Example - Suppose you received 1000 baht. Would you choose to receive 1000 baht today? Or, receive one year from now. You would choose 1,000 baht today because most people prioritize the present over the future. In addition, if you put 1,000 baht into savings at 5% interest rate, 1,000 baht today will become 1,000 + .05*1,000 = 1,050 baht in a year. Therefore, the present value of 1,050 baht in one year equals 1,000 baht today.

Calculating the present value of future benefits derived from educational investments – We use the present value principle to calculate the sum of the future benefits you will receive from continuing education.

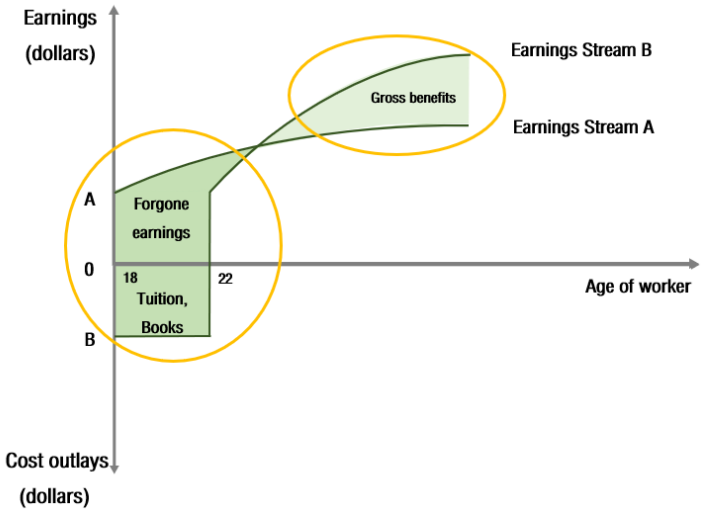
$$\text{Present Value} = \frac{B_1}{(1+r)} + \frac{B_2}{(1+r)^2} + \frac{B_3}{(1+r)^3} + \ldots + \frac{B_\tau}{(1+r)^\tau}$$

- B_i is the benefit received from studying more during the time *i*.
- τ is the last period you will receive that benefit (retirement period)
- *r* is a subjective discount rate.
- *C* is costs and expenses incurred at present.

That person will choose to study at a higher level in that case.

$$\frac{B_1}{(1+r)} + \frac{B_2}{(1+r)^2} + \frac{B_3}{(1+r)^3} + \ldots + \frac{B_\tau}{(1+r)^\tau} > C$$

Figure 5.7 – The decision to study at a higher level



A person will consider the direct and indirect costs of studying in undergraduate level (university level) and the future benefits of university studies. That person will decide to go to university only if the expected future benefits of investing in education are larger than the costs incurred from investing in education.

Who is more likely to study undergraduate level (or university)?

(1) A person who focuses on the future (more than the present) is more likely to wait for increased income in the future (or a person with low subjective discount rates (low r))

(2) A young person who has a relatively long time in the labor market gives them more time to receive the benefits (high τ for a long time).

(3) A person has a low cost (C) of study, both direct (tuition fees) and indirect (study effort) costs.

(4) A person who expects the high-income gap between high school and university graduates (B is high).

Investing in people after school could impact the lifelong income path. Labor becomes more efficient with more experience. This is because workers receive formal (during work) and informal training. Workers themselves may learn more either professionally or through education at higher degree or certificate levels.

Figure 5.8 – The relationship between age and earnings

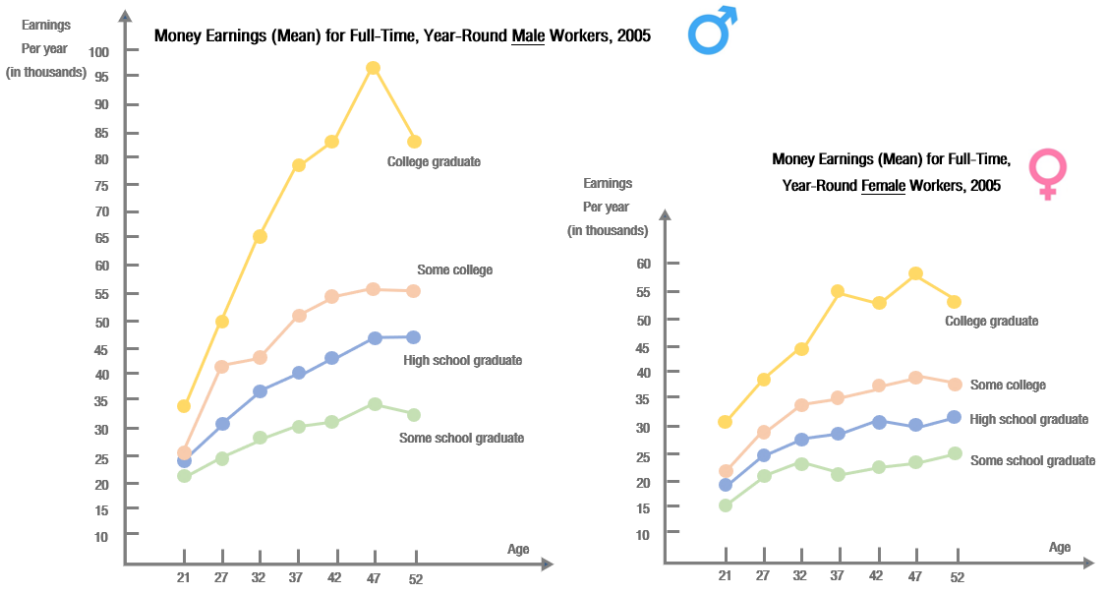


Figure 5.8 presents the relationship between age and earnings as follows:

1. The average earnings of full-time employees increase along with their education. According to the human capital model, education increases the skills of workers.

2. Earnings increase at an increasing rate in the beginning (as a result of being educated in the formal system) and gradually increase at a decreasing rate when getting older (as a result of receiving training during working hours).

3. Considering different ages by comparing people with varying levels of education, the earning gap between higher educated and low-educated workers tends to widen when they are older.

4. Considering different ages by comparing people with varying levels of education and gender. The earnings of men with higher or lower education tend to increase more than those of women. The reason is that during the working period, married women who have children are likely to leave the labor market (for a certain period) or work less, resulting in less work experience and fewer training opportunities, directly impacting income.

However, if the labor market is imperfectly competitive, education is viewed as only a signal. Education is only a signal of a worker's qualifications to employers, and is only used during the application period. Even though workers with a higher level of education have increased wages,

more education has nothing to do with increasing labor productivity. Education is the only information workers use as a signal to get a job/employment in the labor market.

5.5.4 Why should we invest in education for women?

Schultz (2002) studied "Why Governments Should Invest More to Educate Girls" and emphasized the externalities of women's and men's schooling. The external impact of women's investment in education is high. Empirical estimates of the external macroeconomic effects of education on economic growth. Transmission between generations in the production of human capital and child development. A mother's higher level of education is more associated with improving the children's quality than the father's education level (in terms of birth weight, child survival, good nutrition, attending school at an early age, school attendance, and years of schooling).

Policy options to increase women's schooling – East Asia and Latin America have successfully promoted women's education. The traditional way to increase women's enrollment is to reduce the cost of education, including schools close to the residents, reduce tuition fees, especially for girls, provide school uniforms/subsidies for girls, funds/scholarships for girls. For example, in Bangladesh - Since 1994, scholarships for girls to pursue secondary education; in Mexico – scholarships are provided to poor rural mothers to get their children to school in a program known as "Progresa"; in Brazil – Funding for mothers in poor households enrolling all their children. However, parents in some cultures do not want their daughters to be educated in the same classroom as boys. For example, in South and West Asia and North Africa, girls' education may be limited by the absence of gender-segregated schools, especially at the secondary level.

The rate of return to education for Thai women – Warunsiri and McNown (2010) estimated the rate of return on investment in education in Thailand. The study found that Thailand's rate of return on education is 14-16 percent. However, the rate of return on investment in education for women is higher than that of men (women 18% vs. men at 13%). Therefore, education is a key factor in increasing women's income. In the case of Thailand, a one-year increase in the year of education for Thai women will increase the average wage by 18%, a relatively high figure compared to the global average. The government should therefore consider more support for women's educational opportunities.

The effect of scholarship/educational funding for Thai girls – Paweenawat and Vechbanyongratana (2015) examined the outcomes of scholarships for female students in rural

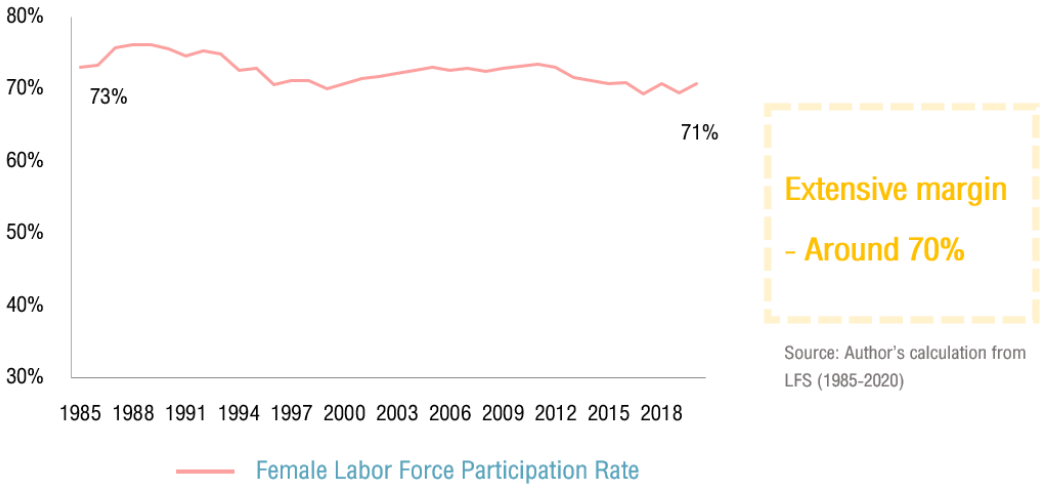
areas and from low-income family backgrounds. An analysis of panel data, in which they continuously collected the data from students who received scholarships from grades 4-6 (until and after graduation, i.e., admission to higher education). Studies have shown that this scholarship has increased the chances of entering higher education among poor students. The findings are consistent with international studies. Money is one of the key factors in helping poor children access higher education. The policy recommendation derived from this research is that the government should consider subsidizing those students in poverty during the transition period from upper secondary to tertiary levels. This will increase their chances of higher education admission.

5.6 Female labor supply

Female labor supply could be measured in two dimensions, including:

(1) Extensive margin – Female Labor Force Participation Rate – Decision to participate in the labor market (Participation decision), regardless of the number of working hours. This could be measuring how many women workers work in the labor market. For example, Thailand has a high participation rate of female workers (more than 65% from 1985 -2020) (Figure 5.9).

Figure 5.9 – Female Labor Force Participation Rate (1985-2020)

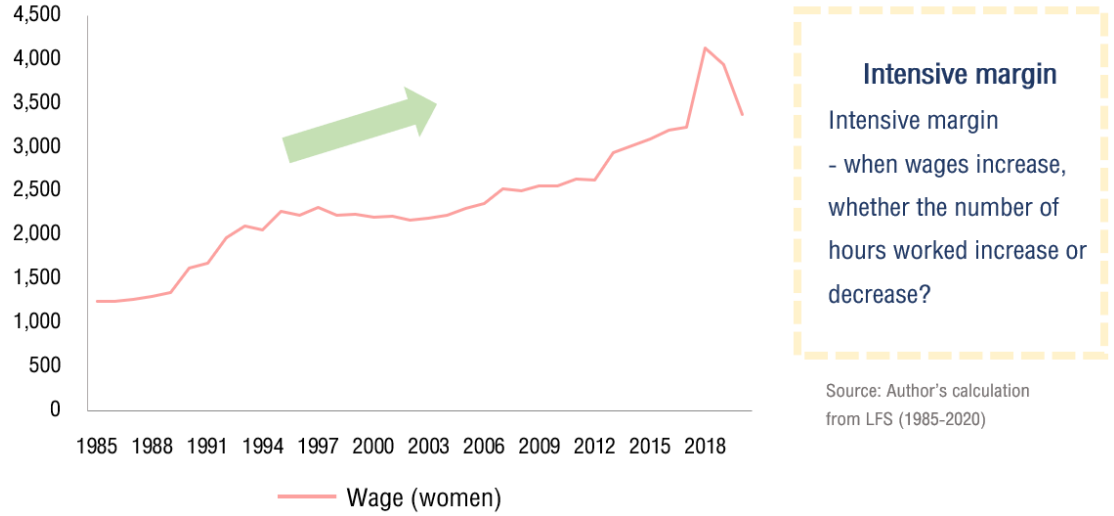


Source: Author's calculation from LFS (1985-2020)

(2) Intensive margin – The relationship between wages and hours worked – This dimension will consider the number of working hours (or intensity of work of workers participating in the labor market) when wages increase/decrease. Figure 5.10 and Figure 5.11

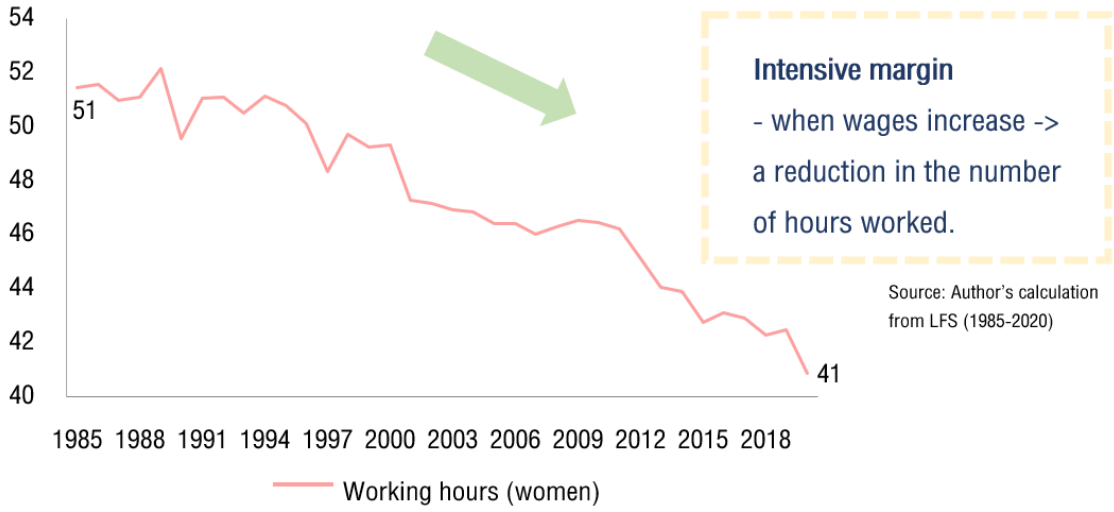
present the average real wage rate trends for women and average working hours per week (1985-2020).

Figure 5.10 – Average real wage rate trends for women (1985-2020) (baht)



Source: Author's calculation from LFS (1985-2020)

Figure 5.11 – Average working hours per week for women (1985-2020)



Source: Author's calculation from LFS (1985-2020)

Female labor supply in Thailand – Paweenawat and McNown (2018) provide empirical evidence in female labor supply estimates in Thailand. Between 1985-2016, the number of weekly working hours of Thai women workers decreased, but the weekly wage rate increased. They found

a negative relationship between female labor supply and wages. Thai women adjust working hours to maintain a subsistent level of household income.

When wages are reduced, they also increase working hours (In addition to the already long hours of housework and childcare). However, when wages rise, workers choose to reduce their working hours to make all the housework hours and workloads easier to manage. In countries with relatively low development levels, women will increase their working hours when wages decrease (to maintain the subsistence level) (Mincer 1962 & Khan 1995). Their findings are consistent with empirical evidence in other developing countries.

For example, Licona (2000) – The female labor supply in Mexico - Most workers in low-income families work more in the labor market when wages are lower; Dessing (2002) – Low-income workers in the rural Philippines; Dasgupta and Goldar (2006) – Female labor supply in rural India. However, these findings are contradicted by empirical evidence in developed countries. There is a positive correlation between working hours and wages in the US (Juhn and Murphy, 1997); Germany (Merz, 2008); Canada (Dosie and Kromann (2012).

Paweenawat and McNown (2018) also presented the determinants of the female labor supply in Thailand, including:

(1) Education level – An increase in women's education plays an important role in determining the supply of women in the labor market;

(2) Age group – Younger women had the highest response (compared to other age groups) per change in wages. Older women are more likely to have a well-matched lifestyle and work style and may be subject to more stringent traditions than younger women;

(3) Marital status – Unmarried women responded to wage changes greater than married women. Married women have more flexibility in choosing whether to work because the husband's income is a cushion;

(4) Number of children and age of children – women's priorities in family influence decision-making to work in the labor market (Angrist and Evans 1998).

Labor supply of married women in Thailand – Liao and Paweenawat (2021) provided evidence of the Labor Supply of Married Women in Thailand (1985-2016), taking into account the effects of having children and the impact on married couples. Husband's wages affect the labor supply of married women. Women with children respond to their high wages because women with children spend more time doing housework within the household than women without children. If

wages are increased, this group of workers will reduce their working hours by more than those without children.

Maternal labor supply in Thailand – Liao and Paweenawat (2022) provide empirical evidence of family structure on the labor supply of married women with children. Living with their parents positively affects the participation rate of married women with children in the labor market. This increased the likelihood of participation in the labor market by 21 percent compared to those who did not live with their parents. Women who live with their parents will have about ten more hours of work per week. The main reason is that co-residence with parents, either husband's or wife's side, makes it possible to get help in raising children, as well as reduce the burden of household chores. As a result, women have more time to participate in the labor market.

Exercise

1) Discuss the connection between the differences in educational choices between men and women. How does this affect the income gap trend and career paths of men and women? Provide examples or empirical evidence in your discussion.

2) Describe the differences in the following three types of labor market discrimination: (1) bias-based discrimination, (2) market power discrimination, and (3) statistical discrimination. Which of the concepts of discrimination do you think are most evident in the labor market? Why? Provide an example and explanation.

3) Based on the model of prejudice and discrimination, compare the outcomes of discrimination in terms of wages and number of women employed in the labor market (accompany your explanation with a graph) in the following three cases of employer discrimination:

Case 1 – In a market with employers who do not discriminate against women.
Case 2 – In a market with employers who discriminate against women.
Case 3 – In the event of a change in the employer's attitude toward discrimination

4) Use a human capital model to explain the difference in wages between university and high school graduates. In addition, how do workers who decide to work after graduating from high school differ from those who decide to continue their studies at a university? (Draw a graph and accompany this with an explanation).

5) Do you agree that when considering different ages by comparing the levels of people with different education and genders, the income gap between men with a high and low level of education tends to spread more widely than among women? Explain the relationship between income and the age and gender of workers with examples from real cases.

6) According to Schultz (2002), governments should focus on investing in education for women and girls because it has a more positive impact on society than investing in men. Do you agree or disagree with this conclusion? Please discuss.

7) Discuss the factors that determine the supply of married and unmarried women. Based on examples of research in Thailand or abroad, what was the most influential factor in determining the supply of female labor?

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