FEM 4204
HUMAN CAPITAL: INVESTING IN ONESELF AND ONE'S FAMILY

ZURONI MD JUSOH
RESOURCE MGT AND CONSUMER STUDIES, FACULTY OF HUMAN ECOLOGY
REFERENCES


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OUTLINE

• Introduction

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  – The rate of return for formal education
    • Human Capital Theory
    • Signaling Theory

• Human capital as a household activity
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  – Expectation and the sex typing of human capital investment
  – Health as a human capital investment
  – Human capital, marriage and divorce
Introduction

• **Recall**: Types of investment in family members:
  – Formal schooling
  – OJT and experience – will be discussed in HKI by firms
    • Take time out from one’s market job or in household activity in order to learn how to do it better
  – Health
    • i.e spending time and money in maintaining and augmenting one’s health – e.g aerobic class, dental check ups, gd nutritions
  – Migration -- in search of better job or different lifestyle
    • One forsake the opportunity in one location in order to exploit those in another
  – Having children and raising them in certain ways
    • Provide economic security in old age
Human Capital and the Labor Mkt

• **A major reason of HKI through schooling**
  – To augment their income in the future and so to increase their total wealth

• **Recall the Human capital Theory**
  – After choosing what kind of investment
    • Physical capital (e.g. a new car) vs. financial capital (e.g. stocks, bonds) vs. human capital
  – If formal schooling initially has the higher rate of return, one will maximize his/her wealth by continuing to invest in schooling until the rate of return on schooling has been driven down to the market rate of interest
The Rate of Return on Education

• It’s the interest rate that equates the cost of the investment with the present value of the stream of future benefits from the investment

• An illustration to explain the rate of return to the investment (i.e. the internal rate of return)
The Rate of Return on Education ...cont

• E.g. Bob is contemplating a bachelor degree in UPM at the age of 20 and expects to retire at 56.
• In yr $t$ the annual earning
  – w/o the added yr of school $\sim E_t$
  – with the added yr of school $\sim E'_t$
  – $E'_t > E_t$
• The cost of added yr in school $\sim MC$ consist of:
  – Forgone earnings $\sim E_0$
  – Out of pocket costs $\sim C$
• So, $MC = E_0 + C$
The Rate of Return on Education ...cont

- The benefit from added yr of schooling is the difference between the future stream of annual earning
  - with the added yr of school ~ E' \( t \) AND
  - w/o the added yr of school ~ \( E_t \)

- The interest rate \( i \) equates the Present Value (PV) of the expected stream of benefit fr added school with the cost of additional yr of sch
  \[ \sum (E'_t - E_t)/(1+i)^t = MC = E_0 + C \quad -- \text{at } n=56 \text{ and } t=1 \]

- If \( i > \) the mkt int rate on financial investment (\( r' \)) ~ Bob will increase his wealth by getting the added yr of schooling

- If \( i = r \) Bob will be indifferent between investing in financial capital or human capital
The Rate of Return on Education ...cont

• Why the rate of return to schooling will decline with each added yr of school

1. MC increases
   • The opportunity cost, $E_0$, increases because the wage rate employers are prepared to pay increases with education

2. MB decreases
   • Each additional yr of schooling reduces the remaining yrs during which an indiv works, shortening the expected streams of benefits of added schooling and reducing the MB

3. Law of Diminishing Marginal Productivity
   • As the no of additional schooling rise, the rate of return to additional education falls (i.e. increasing at a decreasing rate)
Signaling/Screening Theory

- An alternative theory of investment in education
- Says:
  - It could be rational to invest in costly education even if education adds nothing directly to a worker’s marginal product
- Assumes:
  - People are born with different innate ability — i.e. some are good at most things, others are less smart and on average less productive
• Suppose higher education contributes nothing to productivity. Before making this costly investment how can school leavers be assured that their future earning will offset the initial cost?

• Signaling theory says:
  – In going on education, smart people are *sending a signal* to employer that they are highly productive (prospective) employee
  – Higher education is *screening out* the smart high productivity workers
Signaling/Screening Theory ... cont

• Thus, firm can be assured that they are the high-ability workers

• In short:
  – Signaling theory says that education is used as a signal/screening that the person is productive
    • i.e. formal education don’t teach you anything but signaling that you are productive

• Thus, to be effective, the screening process must indeed separate the high-ability workers from the others
Signaling/Screening Theory … cont

• But, why don’t lower-ability workers go to university and fool firms into offering them high wages?
  1. They do not expect to pass
  2. They may feel that in order to scrape through they will have to work enormously and unpleasantly hard

• Since most people know their own ability, firms may take it on trust that people who have stuck it out till their final year at university believe themselves to be at the higher end of the ability range
Signaling/Screening Theory ... cont

• In short, the signal used (e.g. college education) should be the signal that not everybody has it

• Caution about signaling theory:
  – Relates to discrimination (more productive will be paid more)
  – One may choose to manipulate signals (e.g. education)
    – e.g. if you want to get more wage, get more education
  – But, some signals are not manipulative – e.g. race and gender

  • Thus, it’s a DISCRIMINATION – e.g. use race as a signal to determine whether he’s productive or not
Signaling/Screening Theory ... cont

• Points to ponder:
  – The distinction between individual vs social benefit
    • Individual benefit – invest in human capital to earn more
    • Social benefit – If education raises productivity

• Suppose the only function of higher education was to signal which were the higher-ability workers
  – it make sense to an indiv to go to univ but, does it make any sense to the society as a whole?
  – Perhaps it’s should be replaced by cheaper method of signaling – i.e. conducting a national IQ test adjusted for disadvantages and previous opportunity to learn

WHAT DO YOU THINK???
Human Capital as a HH Activity

• Recall the division of time:
  – Mkt work vs. hh prod vs. leisure
  – The decision of time allocation is based on,
    • The real wage rate that the employer wld be willing to pay
    • Individual productivity in the hh production
    • Individual relative preference for leisure vs good (i.e. purchased vs homemade)
  – In SR, individual have no control over real wage rate and productivity in the hh production
  – In LR, individual considerably control their productivity and hence income trough devoting time and resource to human capital formation
Human Capital as a HH Activity
...cont

- Actually time allocation consisted of 4 activities
  - Market work; HH production; Leisure AND
  - Human capital formation – why?

1. Human capital is a separate HH activity when it takes place via formal schooling
2. Human capital formation occurs in mkt work when the investment takes the form of mkt work experience
3. HKI also takes place in the in conjunction with HH prod when the formation takes the form of hh prod experience
Study time, part-time work and academic performance

- **Studying vs part time work**
  - A trade-off between academic performance and future consumption

1. An increase 1hr/wk of PT reduces GPA by 0.09
   - Why? A std who does more PT work must reduce the no of credit taken or because the std obtain lower grade

2. **Student loan do increases academic performance** in that student use the money to reduce PT, buy study time, and increase GPA
   - An added USD$1000 of student loan translates to an avg of 0.5 GPA
Expectation and the sex typing of HKI

- **Generalization of $MB \geq MC$**
  - $MB$ -- Is actually the contemplated $MB$ of HKI

- **Sex typing of HKI**
  - HKI occur when individuals expectation or those of their parents, about their future activities depend upon gender
  - Historically -- females were expected to spend majority of their live in HH and leisure activities
    - Thus, $MB$ to labor specific HKI by or on behalf of females were lower than those males
    - Hence, reducing the amt of such investment made by females or by society and parents on their behalf
Expectation and the sex typing of HKI ...cont

• Another area of HKI sex typing – HH Prod
  – What is the expectation?
  – Consequently:
    • training related to household chores
  – Check:
    • Participation of boys and girls in household chores
    • Time allocation and division of labor in the HH between men and women
Health as a Human Capital Investment

- Decision to invest in one’s health – $MB \geq MC$
- What make health different from other type of HKI?
  - Increase yr of schooling will not increase one’s expected life span, but investing in health will
  - Learning-by-doing will not prevent sickness from reducing the number of days of activities per year, proper nutrition and other preventive health measure will
Health as a Human Capital Investment ...

- Investing in health reduces the number of absentees due to medical reasons per year.
  - Consequently, it increases one’s productivity and time use.

- What affects one’s current health status:
  - Individual’s age; Own and spouse’s education; Past health status
  - These are factors affecting individual’s “demand for health” – i.e. the demand arising from both the future benefit of investing in one’s health today as well as the consumption benefits of enjoying being healthy currently.
Health as a Human Capital Investment ...cont

• Interesting link between education and HKI in health
  – HKI in education -- (+) -- HKI in health
  – Health -- (+) -- intellectual development of children
    • In short, healthy children accomplish more in school. Better educated people are healthier
Human Capital, Marriage and Divorce Investment

- HK formation, especially one gained through experience in HH activities, takes place in the context of a HH,
  - Thus, the type of HH affect return of HKI, hence the amt and type of HK formation
    - Single – cannot exploit specialization of function and economics of scale in hh prod activities, single do less chores thus HH prod experience
    - Married couple with many children accumulate more child-specific HK via experience than unmarried, males and couples with no children