

DEVELOPMENT OF STRATEGIES FOR THE PRODUCTION OF BACHELOR'S DEGREE SOCIAL SCIENCE GRADUATES: AN ANALYSIS OF THE RATE OF RETURN ON INVESTMENT

Akkaranun Taechakraichana¹

Abstract: Return to investment in education based on human capital theory has been estimated since the late 1950s. This paper reviews the concept of the profitability of investment in higher education and enumerates the various techniques that have been used in the literature to estimate the rate of return to investment in higher education. The various estimating techniques are illustrated by using bachelor degree's social science graduates survey data from private organization in stock exchange of Thailand for designing higher education policy. This paper reports bachelor degree's graduates estimates of private rate of return in social science majors consist of Economics, Laws, Politics, Business Administration and Educations. This paper also interviews the specialists in social science majors, top management executives and human resource manager in private organization in stock exchange of Thailand for development in social science graduate production strategies.

The results of interviews from specialists in social science majors, top management executives and human resource manager in private organization in stock exchange of Thailand with the analysis concluded the way to improve social science bachelor degree graduate returns consisting of 1) Improve the important skill consists of international language, computer literacy, creativity idea, competitiveness development. 2) The specialists and human resource manager has recommended the graduate to test the knowledge or Certificates Graduate that is recognized by most employers to enhance competitiveness, including English language skills (TOEIC, TOEFL, IELTS) or professional knowledge of the Finance (Single License, Derivative License, CFA, CPA) 3) Universities should Guidelines to enhance the recruitment of graduates. The knowledge and training to provide graduates with the skills or certificates that are accepted by most employers to enhance their competitiveness in the labor market.

Keywords: Development Strategies, Higher Education, Rate of Return on Investment

Introduction

Expenditures on education have been treated as an investment flows that build Human Capital. They are one of the most important factors to develop the country. In the four decades that followed the human investment revolution in economic thought, hundreds of estimates have been made on the profitability of investment in education in all parts of the World and for all levels and types of majors in university (Psacharopoulos, 2002)

Today, the higher education is indispensable for development on human capital in every country because high-skill labor force demand increased continuously in every year. Especially, the graduate's higher education can bring new innovations, however the graduate unemployment is the very important problem for every countries. One of the most important reasons is the excessive graduate production of some majors for labor market.

The rate of return on investment in higher education can be index that reflects the efficiency in value of the investment budget of education

Statistic information from the past found that graduates with a Bachelor of Social Sciences are much more than Bachelor of Science or bachelor of humanities. Consequence, Bachelor of social science graduate confronted with the problem of unemployment (Higher Education Commission, 2010)

Objectives of this study

The purpose of this study is to investigate monetary benefits, costs, private and social rate of returns on investment of bachelor's degree in social science graduates in Thailand. In additional, this study investigates the important factors to influence the return of the bachelor degree in social science graduates.

The Scope of this Study

The various estimating techniques are illustrated by using bachelor degree's social science graduates survey data from private organization in the stock exchange of Thailand for designing higher education policy. This paper reports bachelor degree's graduates estimates of private rate of return in social science majors consist of 1) Economics 2) Laws 3) Politics 4) Business Administration and 5) Educations.

In this study, we also interview the top management executives and human resource manager from the private organization to study the conditions of employment demand for bachelor degree in social science graduate and what major of social science that

¹ Ph.D. Candidate in Higher Education, Department of Educational Policy Management and Leadership , Faculty of Education, Chulalongkorn University, Thailand

employer like the university would produce the graduate in the future.

Methodology

The calculations of the rate of returns on investment from bachelor's degree in social science graduate use the internal rate of return (IRR). This can be express formally as:

$$\sum_{t=-3}^0 (C_h + Y_{h-1})_t (1+r)^{-t} = \sum_{t=1}^{38} (Y_h - Y_{h-1})_t (1+r)^{-t}$$

Where: C_h	=	Direct cost for study in bachelor's degree
Y_{h-1}	=	Opportunity cost of bachelor's degree in university
Y_h	=	Bachelor's degree Return from working
r	=	Discount Rate
t	=	Time for studying (t_{-3} to t_0) and working (t_0 to t_{38})

In this study, we also study the important factor to influence the return of the bachelor degree in social science graduates by using multiple linear regressions. This can be express as following:

$$\ln Y = a_0 + a_1 \text{EXP} + a_2 \text{EXPSQ} + a_3 \text{SEX} + a_4 \text{MAR} + a_5 \text{FEDU1} + a_6 \text{FEDU2} + a_7 \text{FEDU3} + a_8 \text{FEDU4} + a_9 \text{FEDU5} + a_{10} \text{HONOR} + a_{11} \text{TRAIN} + a_{12} \text{SIZE1} + a_{13} \text{SIZE2} + a_{14} \text{UNIV} + a_{15} \text{FCTY1} + a_{16} \text{FCTY2} + a_{17} \text{FCTY3} + a_{18} \text{FCTY4} + \varepsilon_i$$

Where: Y	=	Bachelor's degree Return from working
a_0	=	Constants
a_i	=	Coefficient of Variable
EXP	=	Working Experience of Graduate
EXPSQ	=	Working Experience of Graduate
SEX	=	Gender of Graduate
MAR	=	Marriage Status of Graduate
FEDU	=	Father Education of Graduate
HONOR	=	Academic Performance of Graduate
TRAIN	=	Training Program during working in Organization
SIZE	=	The Size of Private Organization
UNIV	=	Type of University
FCTY	=	Major or Faculty of Graduate

The Results

The finding of this study show that the relationship between variable factors consist of working experience (EXP), square of working experience (EXPSQ), gender (SEX), graduate father education (FEDU), academic performance of graduate (HONOR), training program during working in organization (TRAIN), the size of private organization (SIZE), type of university (UNIV) and major or faculty of graduate (FCTY) have significant level to bachelor degree graduate Return from working ($\ln Y$). While the relationship between marriage status (MAR) have no significant level to bachelor degree graduate Return from working ($R^2 = 0.897$, Adjusted $R^2 = 0.895$).

(see all tables and figures in the last page)

The finding of this study shows that the average private and social costs of government

universities are higher than private universities. Average private and social cost of government universities bachelor degree graduates are 115,902 baht per year, while those of private universities bachelor degree graduates are 175,903 baht per year. In case of university, Chulalongkorn University receives the highest income, followed by graduates from Thammasart University, Kasetsart University,

Srinakarinwirot University, Rangsit University and Dhurakij Pundit University. In case of social science major, the major of business administration receive the highest income, followed by major of Economics,

Laws, Politics and Education. The internal rate of return shows that government university graduate are higher than private university graduate and the major of Business Administration graduate receive the highest internal rate of return, followed by major of Economics, Laws, Politics and Education as figure 1 and table 2-3.

The results of interviews from specialists in social science majors, top management executives and human resource manager in private organization in stock exchange of Thailand with the analysis concluded the way to improve social science bachelor degree graduate returns consisting of 1) Improve the important skill consists of international language, computer literacy, creativity idea, competitiveness development. 2) The specialists and human resource manager has recommended the graduate to test the

knowledge or Certificates Graduate that is recognized by most employers to enhance competitiveness, including English language skills (TOEIC, TOEFL, IELTS) or professional knowledge of the Finance (Single License, Derivative License, CFA, CPA) 3) Universities should Guidelines to enhance the recruitment of graduates. The knowledge and training to provide graduates with the skills or certificates that are accepted by most employers to enhance their competitiveness in the labor market.

References

- Becker, G. (1992). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*. Chicago: The University of Chicago Press.
- Blaug, M. (1971). *The Rate of Return to Investment in Education in Thailand*. Bangkok, National Education Council.
- Borland, J., et al. (2000). *Returns to Investment in Higher Education*. The Melbourne Economics of Higher Education Research Program Report No. 1, The University of Melbourne.
- Codex General Guideline. *General Guideline on Sampling*. [Online]. (2004). Available from: http://www.codexalimentarius.net/download/standards/10141/CX_G_050e.pdf [2011, August 12]
- Certo, C. and Peter, P. (1991). *Strategic Management: Concept and Cased*. New York: McGraw-Hill.
- Daly, A. and Lewis, P. (2010). *The Private Rate of Return to an Economics Degree in Australia: An Update*. Faculty of Business and Government Paper, University of Canberra.
- Falkinger, J. and Zweimuller, J. (1998). *Learning for Employment, Innovation for Growth*. CEPR, Discussion Papers.
- Johnstone, D., et al. (2008). *What Does an IRR (or Two) Mean? The Journal of Economic Education*, The University of Sydney.
- Krippendorff, Klaus. (1980). *Content Analysis: An Introduction to Its Methodology*. California State Publication.
- Maani, S. (1999). *Private and Public Returns to Investments in Secondary and Higher Education in New Zealand over Time: 1981-1996*. Treasury Working Paper, 99/2.
- MacKenzie, N. (1966). *A Guide to the Social Sciences*. Amazon Publication, Inc. California.
- Menon, M. (1997). *Perceived Rates of Return to Higher Education in Cyprus*. *Economics of Education Review*, 16.
- Miller, Richard I. and Miller, Peggy M. (1991). *Cost Effectiveness and Cost-Reduction in United States Colleges and Universities*. *Higher Education Management*, v. 3 p 269-282.
- Nisbet R. A. (1993). *The Social Philosophers 3rd Edition*. New York: Oxford University Press.
- Punyasavatsut, C. et al, (2005). *Final Report Component 1 A: Efficiency of Public Expenditure in Education*. Technical Consultancy for the Country Development Partner-ship Program in Education - Component 1: School Finance Reform.
- Psacharopoulos, G. (1995). *The Profitability of Investment in Education: Concepts and Methods*. HCO Working Papers.
- Psacharopoulos, G. and Patrinos, H. (2002). *Return to Investment in Education: A Further Update*. World Bank Policy Research Working Paper.
- Ross, M. G. (2010). *The Future of Higher Education*. The Higher Education Academy: Subject Centre for Philosophical & Religious Studies.
- Seligman, C. G. (1930). *The Social Science Encyclopedia 2nd Edition*. The Emerald Group Publishing Limited.
- Siphambe, K. H. (2000). *Rates of Return to Education in Botswana*. *Economics of Education Review* 19.
- Smith, A. (2010). *An Inquiry into the Nature and Causes of the Wealth of Nations*. [Online]. 1776. Available from: <http://www.adamsmith.org/smith/won-in-dex.htm> [2010, January 12]
- Wall Street Journal. *Corporate Recruiters Prefer State Universities to Ivy League*. [Online]. 2010. Available from: http://blogs.ajc.com/business-beat/2010/09/14/corporate-recruiters-prefer-state-universities-to-ivy-league/?cxntfid=blogs_business_beat [2011, September 11]
- Wall Street Journal Asia. *Job Market Bleak for Japanese Grads; Brighter for Asian Peers*. [Online]. 2010. Available from: <http://blogs.wsj.com/japanrealtime/2010/12/01/job-market-bleak-for-japanese-grads-brighter-for-asian-peers/> [2011, September 1]
- Wikipedia. *Albert S. Humphrey History*. [Online]. 2010. Available from: http://en.wikipedia.org/wiki/Albert_S_Humphrey [2010, July 25]
- Woodhall, M. (2004). *Cost-Benefit Analysis in Education Planning: Fourth Edition*. UNESCO.
- Wright, P. Reingle, C.D., and Kroll, M. J. (1992). *Strategic Management: Text and Case*. Massachusetts: Allyn and Bacon.

Table 1: The Result of Multiple Linear Regression form Social Science Bachelor Degree Graduate

Variable	Coefficient	t-stat	P Value
EXP	0.941	4.990*	0.000*
EXPSQ	-0.032	-2.582*	0.000*
SEX	0.883	5.111*	0.000*
MAR	-0.009	-0.415	0.678
FEDU1	0.676	2.703*	0.000*
FEDU2	0.746	3.167*	0.000*
FEDU3	0.831	3.542*	0.000*
HONOR	0.815	2.313*	0.000*
TRAIN	0.691	4.881*	0.000*
SIZE1	0.644	2.595*	0.000*
SIZE2	0.814	3.764*	0.000*
UNIV	0.661	2.777*	0.006*
FCTY1	0.673	2.197*	0.000*
FCTY2	0.519	2.056*	0.000*
FCTY3	0.911	3.468*	0.000*
FCTY4	0.786	2.584*	0.000*
R = 0.947		R Square = 0.897	Adjusted R Square = 0.895

Table 2: Private Internal Rate of Return for Social Science Bachelor Degree Graduates in 5 Majors from Government and Private University

University	Politics	Education	Laws	Economics	Business Administration
Chulalongkorn University	20.41	18.36	22.49	29.25	30.49
Thammasart University	19.52	-	22.51	28.58	30.11
Kasetsart University	18.68	18.12	-	26.05	27.37
Srinakarinwirot University	18.57	18.28	-	25.42	25.89
Rangsit University	-	16.26	20.66	23.27	23.85
Dhurakij Pundit University	16.88	-	20.57	22.89	23.03

Table 3: Social Internal Rate of Return for Social Science Bachelor Degree Graduates in 5 Majors from Government and Private University

University	Politics	Education	Laws	Economics	Business Administration
Chulalongkorn University	18.65	17.08	20.28	26.33	27.12
Thammasart University	18.01	-	20.27	25.50	26.82
Kasetsart University	17.04	16.64	-	23.55	24.34
Srinakarinwirot University	16.78	16.69	-	22.83	23.21
Rangsit University	-	13.52	18.12	20.27	20.38
Dhurakij Pundit University	15.00	-	18.40	19.94	20.16

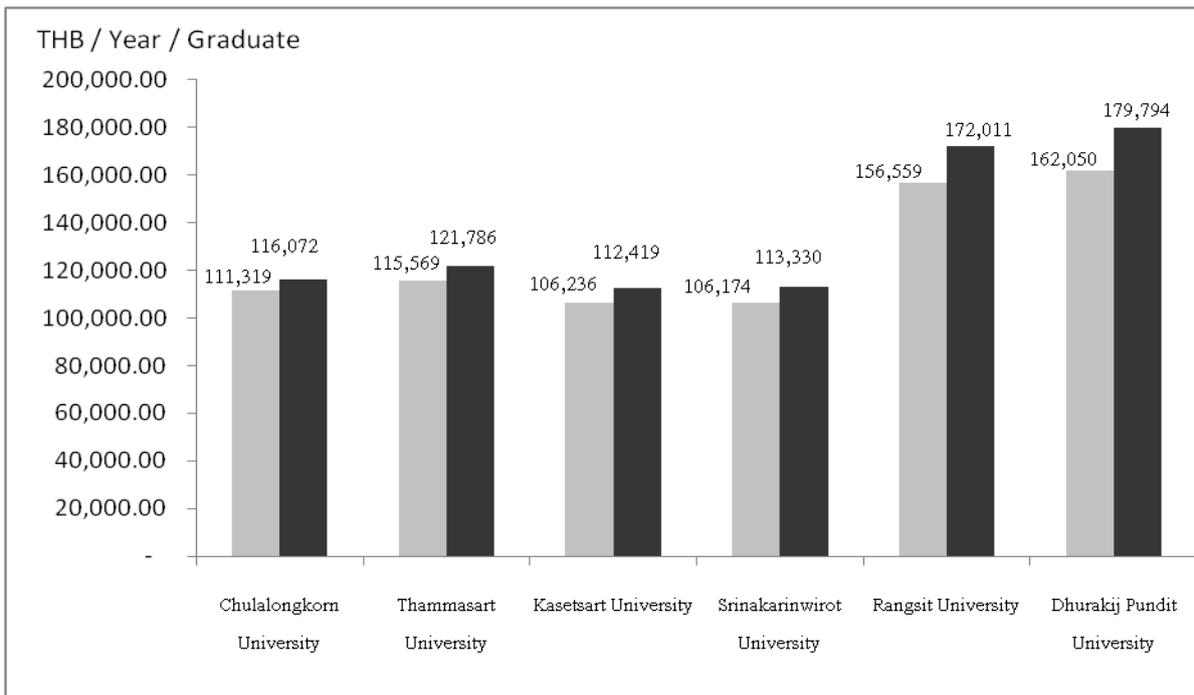


Figure 1: Social Cost of Bachelor Degree Graduate in Government and Private University After Educational Wastage