
The Effects of a Master's Degree on Wage and Job Satisfaction in Massified Higher Education: The Case of South Korea

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1. Research Objectives and Significance

- Many university graduates now pursue a master's degree to improve their qualifications and attract future employers, while others enroll in a master's program to avoid unemployment when they cannot find jobs after graduating.
- These students are willing to invest extra resources in order to have better options in the labour market.
- **Human capital theory**, developed by Schultz (1961) and Becker (1975), posited that increased human capital improves labour productivity.
- **Credentialism**, theorized by Collins (1979), proposed that education is linked to the learners' efforts to obtain relatively scarce professional status, but not directly to the individuals' competence or productivity. **Educational credentials become a form of cultural currency, and these credentials can shape societal stratification.**



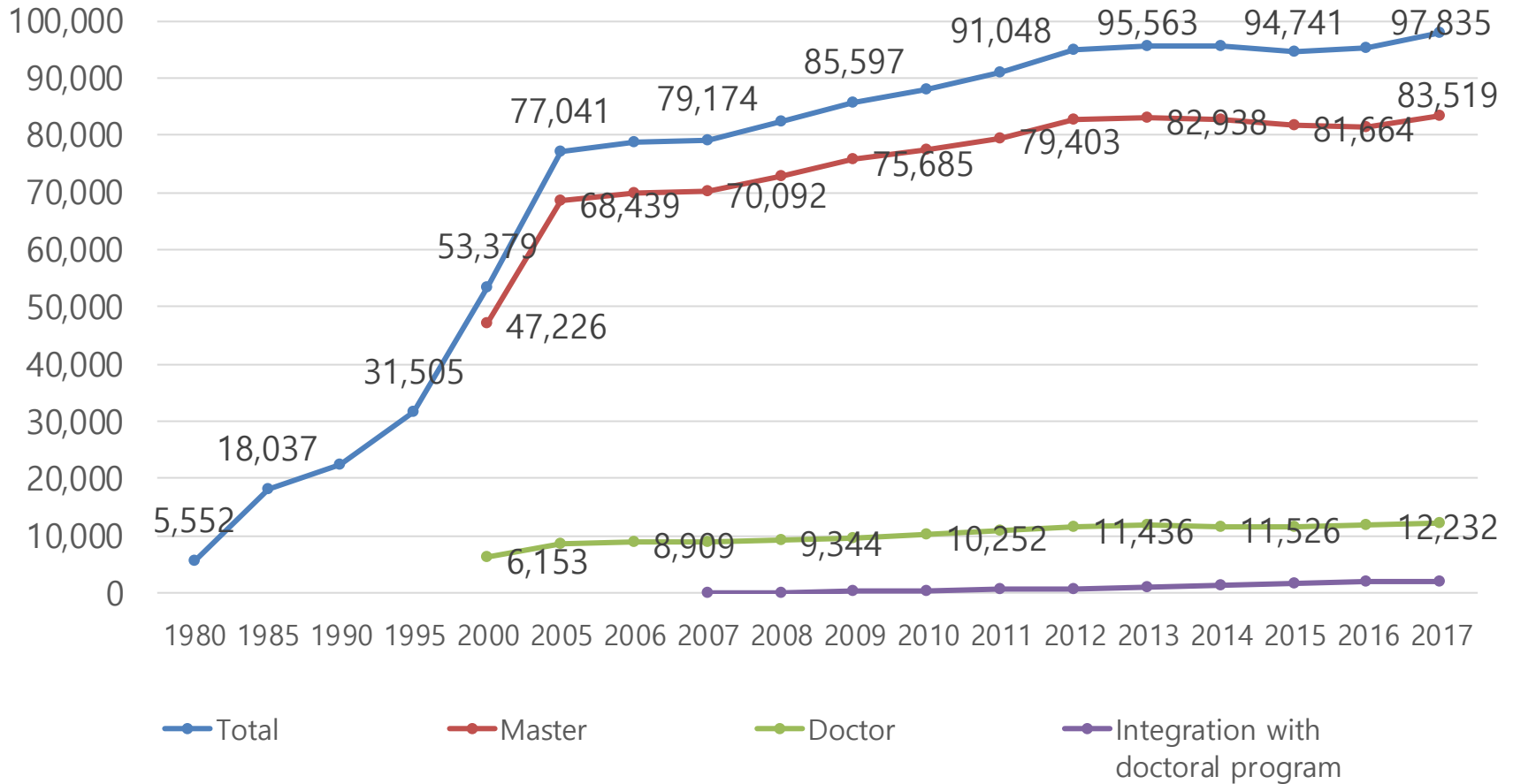
1. Research Objectives and Significance

- **But, there is a few empirical evidence that master's studies have a positive effect on labour market outcomes. In particular, labour market conditions are changing in complex ways, such that having an advanced degree no longer guarantees better job prospects (Nilsson, 2010).**
- **This study aims to explore whether holding a master's degree has significant effects on labour market outcomes in terms of wages and job satisfaction, and whether these effects differ by academic discipline and type of workplace using the case of South Korea.**
- **Research Questions:**
 - (1) Is there an association between having a master's degree and labour market outcomes in terms of wages and job satisfaction?**
 - (2) If the answer to (1) is 'Yes', do such effects differ by discipline and by type of workplace?**



2. Graduate school in South Korea

Number of students by degree level and year



Sources: KEDI (2017). The Analysis of statistics on Korean education.



2. Graduate school in South Korea

● The number of Master's students by type of graduate school in Korea

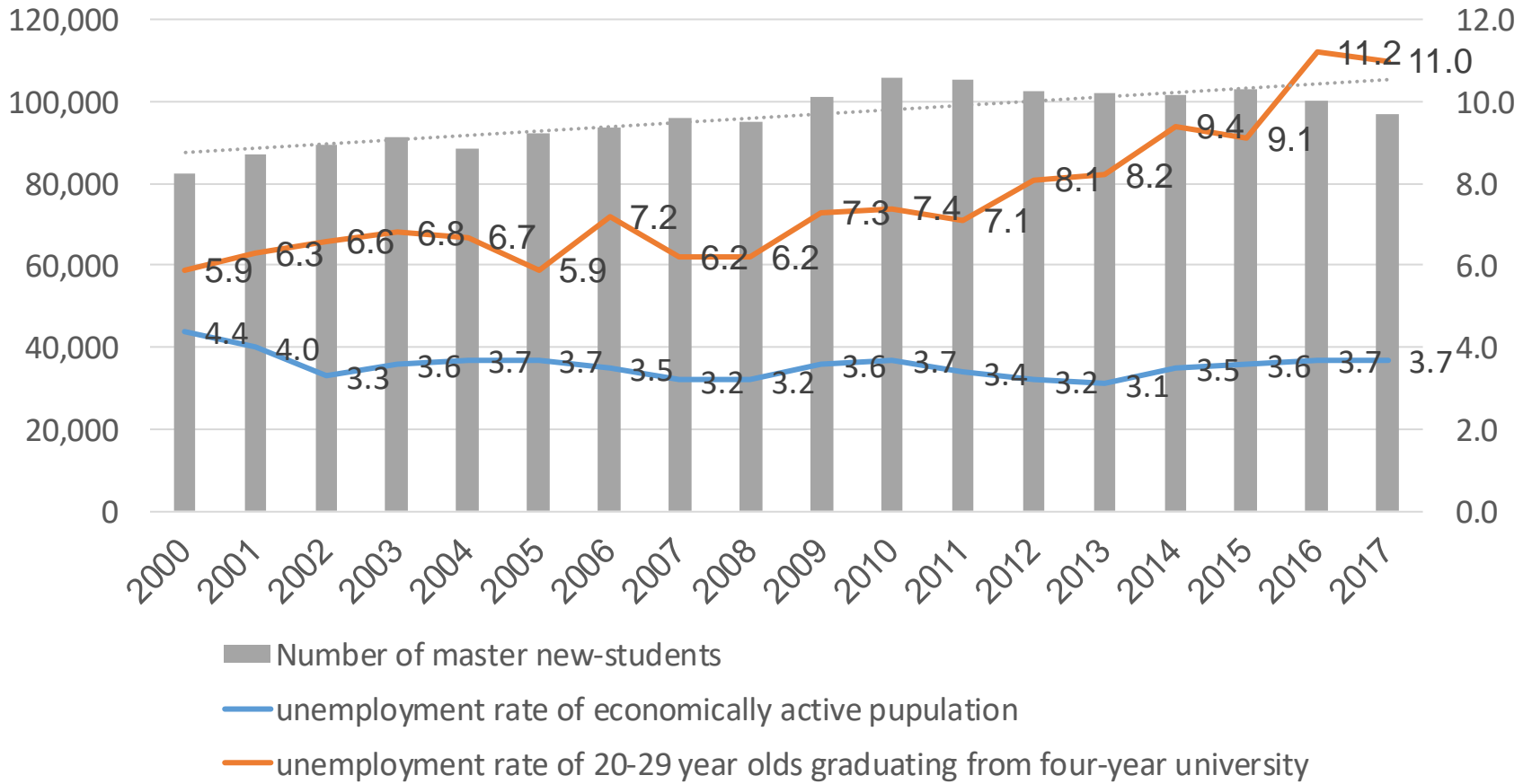
	Total	General graduate school	Professional graduate school
2000	47,226	25,407	21,819
2005	68,439	27,654	40,785
2010	77,328	29,514	47,814
2015	81,664	31,953	49,711
2017	83,519	32,846	50,673

Sources: KEDI Brief Statistics



2. Graduate school in South Korea

Unemployment rate and number of master's new-students by year



Sources: Korean statistical information service/ KEDI statistics service



2. Graduate school in South Korea

Graduates' career path: Academic career vs. transition to labour market

- Employment rate, the employed, the enrollee to Ph.D. program, and graduates by year and gender in **master program, general graduate school** (unit: %, number)

	Employment rate			The employed			The enrollee to Ph.D. program			Graduates		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
2012	79.3	85.0	72.1	20,082	11,979	8,103	3,071	1,749	1,322	33,051	18,173	14,878
2013	78.1	84.8	70.5	19,126	11,017	8,109	2,874	1,647	1,227	32,499	17,114	15,385
2014	76.5	82.6	69.6	18,439	10,561	7,878	2,937	1,687	1,250	32,611	17,227	15,384
2015	76.6	82.1	70.5	18,447	10,472	7,975	2,956	1,780	1,176	31,953	16,799	15,154
2016	77.3	82.0	72.2	18,797	10,422	8,375	2,862	1,685	1,177	32,006	16,587	15,419

Sources: KEDI (2017). The Analysis of statistics on Korean education.



3. Method

● Data from the Graduates Occupational Mobility Survey (GOMS) in 2013

- 2011-2013 panel survey conducted by Korean Employment Information Service
- 1st Survey: 12,169 respondents who graduated from four-year universities in 2010
- 3rd Survey: 10,458 respondents who participated in the 3rd survey in 2013
- The final sample size in this study : **7,199 graduates**

● Analytical methods

- **Descriptive analysis** to analyze how different the labor market outcomes are between university graduates and master graduates
- **OLS regression** to explore the effect of master's studies on labor market
Labor market performance (Wage, Job satisfaction) =
***f* [(master graduates, individual characteristics, academic backgrounds, discipline, university characteristics, Job characteristics)]**



4. Findings

Descriptive statistics

		Master Graduates	University Graduates	Total
Gender	Male	451 (62.47%)	3,912 (60.40%)	4,363 (60.61%)
	Female	271 (37.53%)	2,565 (39.60%)	2,836 (39.39%)
Discipline	Humanities	83 (11.50%)	766 (11.83%)	849 (11.79%)
	Social Science	87 (12.05%)	2,062 (31.84%)	2,149 (29.85%)
	Education	25 (3.46%)	455 (7.02%)	480 (6.67%)
	Engineering	299 (41.41%)	1,845 (28.49%)	2,144 (29.78%)
	Natural Science	185 (25.62%)	818 (12.63%)	1,003 (13.93%)
	Arts	43 (5.96%)	531 (8.20%)	574 (7.97%)
Total		722 (100.00%)	6,477 (100.00%)	7,199 (100.00%)



4. Findings

Job status, Sector, Workplace size and location

		Master Graduates	University Graduates	Total
Job status	Permanent position	597 (82.69%)	6,031 (93.11%)	6,628 (92.07%)
	Non-permanent position	125 (17.31%)	446 (6.89%)	571 (7.93%)
Type of workplace	Private company	418 (58.46%)	4,871 (75.50%)	5,289 (73.80%)
	Public or non-profit institution	297 (41.54%)	1,581 (24.50%)	1,878 (26.20%)
Size of workplace	1,000 persons and over	285 (39.47%)	2,219 (34.26%)	2,504 (34.78%)
	Between 50 and 1,000	283 (39.20%)	2,435 (37.59%)	2,718 (37.76%)
	Under 50	154 (21.33%)	1,823 (28.15%)	1,977 (27.46%)
Location of workplace	Metropolitan cities	426 (59.17%)	3,876 (59.87%)	4,302 (59.80%)
	Other cities	294 (40.83%)	2,598 (40.13%)	2,892 (40.20%)



4. Findings

Wage : Average monthly salary

	Number	Mean (SD)		t-test
		Log form	US \$	
Total				
Master's graduates	721	5.35 (0.50)	2,132.46 (96.54)	-5.134***
University graduates	6,457	5.45 (0.41)	2,291.39 (101.85)	
Hard disciplines				
Master's graduates	483	5.45 (0.45)	2,278.24 (89.28)	-3.898***
University graduates	2,653	5.54 (0.37)	2,439.75 (100.18)	
Soft disciplines				
Master's graduates	238	5.14 (0.53)	1,749.82 (91.45)	-6.953***
University graduates	3,804	5.39 (0.43)	2,146.85 (98.71)	
Private company				
Master's graduates	417	5.54 (0.40)	2,465.91 (85.98)	1.946
University graduates	4,853	5.50 (0.41)	2,398.45 (103.98)	



4. Findings

Job satisfaction

	Number	Mean	SD	t- test
Total				
Master's graduates	722	3.72	0.69	5.719***
University graduates	6,477	3.56	0.72	
Hard disciplines				
Master's graduates	484	3.74	0.70	5.526***
University graduates	2,663	3.55	0.72	
Soft disciplines				
Master's graduates	238	3.67	0.66	2.224*
University graduates	3,814	3.57	0.72	
Private company				
Master's graduates	418	3.73	0.69	5.994***
University graduates	4,871	3.52	0.72	

Results of OLS on wage		Total	Hard disciplines	Soft disciplines	Private company
Master's degrees		-0.074***	-0.025	-0.161***	-0.013
Individual Characteristics	Gender	0.153***	0.126***	0.173***	0.164***
	Age	0.008***	0.014***	0.007**	0.007***
	Parent's education	0.035***	0.038**	0.035**	0.042***
	Monthly family income	0.063***	0.039**	0.080***	0.063***
	Marriage	0.059***	0.076***	0.047**	0.064***
Academic Background	College GPA	0.003***	0.002***	0.003***	0.003***
	Major satisfaction	0.019***	0.021**	0.021**	0.015**
Discipline	Social sciences	0.032*	-	-	0.028
	Education	0.115***	-	-	-0.028
	Engineering	0.084***	-	-	0.077***
	Natural sciences	0.019	-	-	0.013
	Arts	-0.068***	-	-	-0.074***
University Characteristics	Research univ. I	0.230***	0.202***	0.245***	0.239***
	Research univ. II	0.127***	0.111***	0.134***	0.120***
	Research-teaching univ.	0.097***	0.083***	0.094***	0.097***
	Public university	-0.029**	-0.016	-0.041**	-0.027*
Job Characteristics	Job status	0.414***	0.398***	0.425***	0.482***
	Time at current workplace	0.003***	0.003***	0.002***	0.003***
	Private company	0.154***	0.218***	0.100***	-
	Big company	0.269***	0.259***	0.279***	0.311***
	Middle size company	0.158***	0.128***	0.183***	0.156***
	Metropolitan city	0.087***	0.104***	0.068***	0.098***
	Task matching with major	0.067***	0.071***	0.068***	0.063***
R-squared (Adj. R-squared)		0.454 (0.452)	0.448 (0.444)	0.427 (0.424)	0.498 (0.496)
F value		230.047***	123.106***	144.230***	210.827***

Results of OLS on job satisfaction		Total	Hard disciplines	Soft disciplines	Private company
Master's degrees		0.076**	0.117**	0.007	0.138***
Individual Characteristics	Gender	0.080***	0.058	0.087**	0.055*
	Age	-0.003	0.007	-0.007	0.000
	Parent's education	0.040*	0.041	0.044	0.035
	Monthly family income	0.029	0.043	0.020	0.058**
	Marriage	0.048*	0.048	0.046	0.053*
Academic Background	College GPA	0.001	0.001	0.002	0.001
	Major satisfaction	0.097***	0.089***	0.105***	0.097***
Discipline	Social sciences	-0.043	-	-	-0.019
	Education	0.132**	-	-	-0.049
	Engineering	-0.031	-	-	-0.028
	Natural sciences	-0.051	-	-	-0.027
	Arts	-0.056	-	-	-0.027
University Characteristics	Research univ. I	0.081**	0.139**	0.029	0.098**
	Research univ. II	0.028	0.052	0.009	0.031
	Research-teaching univ.	0.009	0.028	0.002	0.038
	Public university	-0.008	-0.042	0.041	-0.023
Job Characteristics	Job status	0.145***	0.203**	0.118**	0.139**
	Time at current workplace	0.001***	0.002*	0.001*	0.002**
	Private company	-0.132***	-0.148***	-0.151***	-
	Big company	0.064**	0.098**	0.021	0.051
	Middle size company	-0.053*	-0.053	-0.048	-0.078**
	Metropolitan city	-0.012	-0.011	-0.014	0.000
	Task matching with major	0.184***	0.168***	0.198***	0.172***
R-squared (Adj. R-squared)		0.072 (0.068)	0.073 (0.067)	0.071 (0.066)	0.063 (0.058)
F value		21.441***	11.980***	14.768***	14.204***



5. Conclusions

- **Most master's students seek various careers outside of academia and so it is very important to examine the effects of master's studies on labour market outcomes.**
 - Interestingly, according to the results of this study, **master graduates earned less money but their job satisfaction is more higher than university graduates.**
 - We have considered the economic and social contexts of higher education and the labour market for university graduates in Korea to explain the results of this study.
 - First, we surmise that the findings of this study show **the effects of academic inflation in Korea.** When large numbers of students attain bachelor's degrees, such degrees become weaker as credentials (Barone and Ortiz, 2011).
 - Second, the observed insignificant wage premium is directly related to **the weak link between higher education and the labour market in Korea.**
 - Third, the wage differences we observed can also be explained by **job sector differences.**



5. Conclusions

- We found differing effects on wage levels by discipline. In the soft disciplines, but not in the hard disciplines, we found statistically significant negative effects of master's degrees on wage levels.
- In the case of full-time paid workers in private companies, the master's degree holders had slightly higher wages than the undergraduate degree holders.
- We also analysed the effects of master's degrees on job satisfaction, and found that master's degree holders have higher job satisfaction than undergraduate degree holders. This finding aligns with those of previous studies, which have shown that master's degrees might not be economically useful, but do have **high value for social recognition or self-development, which are directly related to job satisfaction** (Jin, 2006).



5. Conclusions

- **Master's students are predominantly interested in careers outside of academia, while faculty members and curricula tend to focus on preparing for research-oriented academic careers (Monk et al., 2012).**
- **Most students want to explore a range of career options that are not easily classified as academic or non-academic. However, current programs lack career guidance for master's students.**
- **There is a need for a structured and comprehensive approach to understand students' requirements in master's programs and to increase opportunities for learning and career advancement at the institutional and program levels.**

Thank You !

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