The effect of participation in competition on initial salary: Evidence from Thammasat and Chulalongkorn students in Economics and Business faculty

> What factors can contribute to the initial salary of Thai people?

> Does participation in competition has the effect on increasing initial salary?

> What are the explanations that participation in competition can has the effect on increasing the initial salary?

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Why this topics is important?

Changing world lead to new and more demanded skill

Rise of technology → **Reskill** or need more sophisticated cognitive skill for modern world

More skill seeking from employers → Apple, IBM, Google are no longer require a degree. **Skills** become more important

Why this topics is important?

Whether participation can increase initial salary is a gap in research

> Spend time on activities that help them **increase the salary**

> Participation in competition **can or cannot** increase the initial salary

Example of previous research

Phillip and Richard (1998)	Card (1997)
Edinaldo, Laura, Jodie (2017)	Bucher and case (1994)
Alsulami (2018)	Lin and LV (2017)
Shen and Feng (2009)	Yasui and Sano (2009)

Research gap: These literatures focus on factors affecting salary and how to solve heterogeneity problem not the competition

Methodology

Predict the effect from explanatory variables using OLS and data from questionnaires

Estimation method: Ordinary least square method or **"OLS"**

Questionnaire

Population: Economics students and Business students from Chulalongkorn University and Thammasat University

A **Accessible**

B **Good mixture of participants or not too least participants**

Exclude those who

1. Self-employed
2. Family hired
3. Working outside Bangkok

Methodology

Methodology suffers from heterogeneity bias to examine the participation effect

Bias from heterogeneity

> **Upward bias** from individual ability

> Result may be **misinterpreted** as the significant coefficient may not be significant

Why choose to carry on bias result?

> To be **able to examine the effect of participation**. Traditional way to deal with heterogeneity is IV estimator, however, participation must also be replaced with IV

How this study mitigates bias?

> Identify the unobserved heterogeneity and how it affects the model

> Avoid **outliers**

> Avoid unnecessary variable to prevent **double misspecification**

Descriptive Statistic

Variable	Description	Mean	SD.	Min	Max
ln(salary)	Log of initial salary	9.787	.3398	9.210	11.385
male	= 1 if male	.365	.4839	0	1
start					
start1	= 1 if start working after Master degree or PHD	.154	.3625	0	1
start2	= 1 if start working before finishing bachelor's degree	.038	. 1932	0	1
faculty	= 1 if faculty of Economics	.558	.4991	0	1
program	= 1 if English program	.394	.4911	0	1
university	= 1 if Thammasat university	.587	.4948	0	1
ln(parent_income)	Log of parent income	11.4766	.6943	10.597	12.766
parent_edu					
parent_edu1	= 1 if parent highest education is master degree	.087	.2825	0	1
parent_edu2	= 1 if parent highest education is PHD	.010	.0981	0	1
parent_edu3	= 1 if parent highest education is lower than Bachelor	.269	.4457	0	1
exchange	= 1 if having study exchange experience	.231	.4234	0	1
intern	= 1 if having internship experience	.923	.2678	0	1
academic	University's cumulative grade point average	3.240	.3666	2.49	3.94
mis					
mis1	= 1 if having the belief of more ability for the job	.115	.3210	0	1
mis2	= 1 if having the belief of less ability for the job	.058	.2343	0	1
mis3	= 1 if having the belief of different ability for the job	.192	.3960	0	1
comp	= 1 if having participation in competition	.279	.4506	0	1
prize					
prize1	= 1 if having got the top 3 prize	.087	.2825	0	1
prize2	= 1 if having got any prize	.173	.3801	0	1

Methodology

Model1:

$$\ln(\text{salary}) = \beta_0 + \beta_1 \cdot (\text{male}) + \beta_2 \cdot (\text{start1}) + \beta_3 \cdot (\text{start2}) + \beta_4 \cdot (\text{faculty}) + \beta_5 \cdot (\text{program}) + \beta_6 \cdot (\text{university}) + \beta_7 \cdot \ln(\text{parent\_income}) + \beta_8 \cdot (\text{parent\_edu1}) + \beta_9 \cdot (\text{parent\_edu2}) + \beta_{10} \cdot (\text{parent\_edu3}) + \beta_{11} \cdot (\text{exchange}) + \beta_{12} \cdot (\text{intern}) + \beta_{13} \cdot (\text{academic}) + \varepsilon$$

Model 2:

$$\ln(\text{salary}) = \beta_0 + \beta_1 \cdot (\text{male}) + \beta_2 \cdot (\text{start1}) + \beta_3 \cdot (\text{start2}) + \beta_4 \cdot (\text{faculty}) + \beta_5 \cdot (\text{program}) + \beta_6 \cdot (\text{university}) + \beta_7 \cdot \ln(\text{parent\_income}) + \beta_8 \cdot (\text{parent\_edu1}) + \beta_9 \cdot (\text{parent\_edu2}) + \beta_{10} \cdot (\text{parent\_edu3}) + \beta_{11} \cdot (\text{exchange}) + \beta_{12} \cdot (\text{intern}) + \beta_{13} \cdot (\text{academic}) + \beta_{14} \cdot (\text{mis1}) + \beta_{15} \cdot (\text{mis2}) + \beta_{16} \cdot (\text{mis3}) + \varepsilon$$

Model 3:

$$\ln(\text{salary}) = \beta_0 + \beta_1 \cdot (\text{male}) + \beta_2 \cdot (\text{start1}) + \beta_3 \cdot (\text{start2}) + \beta_4 \cdot (\text{faculty}) + \beta_5 \cdot (\text{program}) + \beta_6 \cdot (\text{university}) + \beta_7 \cdot \ln(\text{parent\_income}) + \beta_8 \cdot (\text{parent\_edu1}) + \beta_9 \cdot (\text{parent\_edu2}) + \beta_{10} \cdot (\text{parent\_edu3}) + \beta_{11} \cdot (\text{exchange}) + \beta_{12} \cdot (\text{intern}) + \beta_{13} \cdot (\text{academic}) + \beta_{14} \cdot (\text{mis1}) + \beta_{15} \cdot (\text{mis2}) + \beta_{16} \cdot (\text{mis3}) + \beta_{17} \cdot (\text{comp}) + \beta_{18} \cdot (\text{prize1}) + \beta_{19} \cdot (\text{prize2}) + \varepsilon$$

Variable	(1) ln(salary)	(2) ln(salary)	(3) ln(salary)
male	0.0153	-.02470	-0.0557
	(0.108815)	(0.087119)	(0.069588)
start1	-0.9547	-0.1005	-0.1144
	(0.1053306)	(0.102622)	(0.105036)
start2	**0.4532***	**0.4615***	0.00723
	(0.2267516)	(0.23169)	(0.20520)
faculty	0.01502	0.06033	0.0738
	(0.0938785)	(0.07576)	(0.069557)
program	**0.2327***	**0.1814***	**0.2233***
	(0.0890732)	(0.086172)	(0.06956)
university	-0.0672	-0.0432	-0.0125
	(0.05187)	(0.05662)	(0.050465)
ln(parent_income)	0.0813	**0.1050***	0.0861
	(0.041833)	(0.04398)	(0.046537)
parent_edu1	0.1277	0.0804	0.1332
	(0.162676)	(0.134133)	(0.122246)
parent_edu2	0.176	-0.0726	-0.3008
	(0.0951261)	(0.191541)	(0.12225)
parent_edu3	0.0405	0.0329	-0.0187
	(0.50914)	(0.052809)	(0.05265)
exchange	0.1066	0.1559	0.0061
	(0.095126)	(0.1093)	(0.075165)
intern	0.02144	0.0356	0.0293
	(0.049489)	(0.0596)	0.04552
academic	**0.3167***	**0.3211***	**0.1919***
	(0.11191)	(0.106543)	(0.084556)
mis1		0.1971	0.1362
		(0.122934)	(0.09653)
mis2		0.1002	0.0787
		(0.044384)	(0.0559302)
mis3		0.0823	**0.0988***
		(0.044385)	(0.04283)
comp			**0.3736***
			(0.07955)
prize1			0.0671
			(0.18543)
prize2			**-0.2417***
			(0.08228)
constant	**7.697***	**7.3505***	**7.9534***
	(0.56135)	(0.60413)	(0.53209)
Observation	101	101	101
R-squared	0.6774	0.7036	0.7649

Preliminary Conclusion

> Coefficient of comp is positive and significant with p-value = 0.000 meaning that **participation in competition significantly increases initial salary** for the population

> Coefficient of academic and program are significant for all 3 models, so higher academic performance and English program can increase initial salary

> Even if participating the competition can increase initial salary, **it may not act as a good signal for productivity**. If signal is the case, coefficient of prize2 should not be negative and significant. This implies that participation in competition rather help participants develop the individual ability.

** **Final conclusion**

"Participation in competition help increase initial salary through developing individual ability that matters to the market demand for labor"