

Does It Pay to Hire Engineers Graduated from Top Engineering Schools?: Building Contractors' Perspectives

คุ้มค่าหรือไม่ในการจ้างวิศวกรที่สำเร็จการศึกษาจากมหาวิทยาลัยชั้นนำ: มุมมองของผู้รับเหมาก่อสร้าง

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Abstract

This study found significant wage difference between the top and the non top school engineers' wages. On the average, the top school engineers earned 18.55% more than the non top ones. From the contractors' perspectives, performance of the top school engineers was superior and preferred. This should be the basis of the wage difference and worthiness of employment.

Keywords: Wage Difference, Engineers' Wages, Contractors' Perspectives, School Rating

บทคัดย่อ

การศึกษานี้พบความแตกต่างของค่าจ้างอย่างมีนัยสำคัญ ระหว่างค่าจ้างของวิศวกรที่สำเร็จการศึกษาจากสถาบันชั้นนำกับค่าจ้างของวิศวกรที่สำเร็จการศึกษาจากสถาบันอื่นๆ โดยเฉลี่ยแล้ววิศวกรที่สำเร็จการศึกษาจากสถาบันชั้นนำได้รับค่าจ้างสูงกว่าวิศวกรที่สำเร็จการศึกษาจากสถาบันอื่นๆ 18.55% และจากความคิดเห็นของผู้รับเหมาก่อสร้างในภาพรวม วิศวกรที่สำเร็จการศึกษาจากสถาบันชั้นนำสามารถทำงานได้ดีกว่า และผู้รับเหมาก่อสร้างก็มีแนวโน้มที่จะเลือกวิศวกรเหล่านั้นเข้าทำงานด้วย ซึ่งความโดดเด่นของผลการปฏิบัติงานนี้ น่าจะเป็นเหตุผลสำคัญสำหรับอธิบายความแตกต่างของค่าจ้าง และเป็นคำตอบในเรื่องของความคุ้มค่าในการจ้างงานด้วย

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คำสำคัญ: ความแตกต่างของค่าจ้าง, ค่าจ้างของวิศวกร, ความคิดเห็นของผู้รับเหมาก่อสร้าง, การจัดอันดับสถานศึกษา

Introduction

This study was a trial step under the research project titled “Labor Cost Analysis of Small Construction Projects in Thonburi Area”. The study investigated the existence of phenomenon that contractors are willing to pay higher wage to hire civil engineers (field or site engineers) graduated from top engineering schools and their opinion on wage paid. In general, students often dedicate their resources, financial, tangible, as well as intangible, in order to enroll in top or leading schools hoping that after graduation they will receive well-paid income, fast career advancement, and high social status. If we consider only financial aspect as wage earned, many studies found that persons graduated from prominent institutions received higher earnings than those from non prominent ones (Solmon, 1975; Solmon and Wachtel, 1975; Morgan and Duncan, 1979; James, Alsalam, Conaty, and To, 1989; Loury and Garman, 1995; Brewer, Eide, and Ehrenberg, 1999; Dale and Krueger, 2002; Arcidiacono, Cooley, and Hussey, 2008; Light and Strayer, 2000; Long, 2010; Oyer and Schaefer, 2012). Hence, it should be worthwhile to dedicate resources in order to enroll in such schools. However, in the other side of the coin, employers’ views toward expensive cost of hiring top school graduates are also interesting. This study tries to investigate this view point by emphasizing on the view point of small building contractors to extract what the contractors have in their minds when they hire young civil engineers who graduated from top schools in terms of return from wage paid.

The Key Cost

The key cost here was the difference between wage paid to the top school engineers and one paid to the non top. To identify “top schools”, 4 surveys were conducted in April 2015, July 2015, October 2015, and January 2016 to ask opinions of contractors or their credible representatives who were working at construction sites. Accidental sampling was applied. The survey areas covered all 15 Thonburi districts of Bangkok. Rating of the top schools was measured from 8 schools the respondents selected and sorted. The most top school received 8 points, the second top received 7 points, the third top received 6 points, and so on. Points from

respondents were collected and evaluated to identify 5 schools that received the highest points. The 5 schools in turn were our interest and called by the study, “top schools”. Engineers who graduated from these schools were expected to have higher wage than ones graduated from other schools.

The first survey was conducted in Phasicharoen District, Bangkhuae District, and Nongkham District. There were 30 contractors replied. The 5 top schools were:

1. Chulalongkorn University
2. Kasetsart University
3. King Mongkut’s Institute of Technology Ladkrabang
4. King Mongkut’s University of Technology Thonburi
5. King Mongkut’s University of Technology North Bangkok

The second survey was conducted in Bangphlat District, Bangkoknoi District, Talingchan District, and Thawiwatthana District. 40 contractors replied. The schools were:

1. Chulalongkorn University
2. King Mongkut’s Institute of Technology Ladkrabang (tie)
2. King Mongkut’s University of Technology Thonburi (tie)
4. Kasetsart University
5. King Mongkut’s University of Technology North Bangkok

The third survey was conducted in Bangkokyai District, Thonburi District, Khlongsarn District, and Chomthong District. 40 contractors replied. The schools were:

1. Chulalongkorn University
2. King Mongkut’s Institute of Technology Ladkrabang
3. Kasetsart University
4. King Mongkut’s University of Technology Thonburi
5. Chiang Mai University

The fourth survey was conducted in Ratburana District, Thungkhru District, Bangkhunthian District, and Bangbon District. 40 contractors replied. The schools were:

1. Chulalongkorn University
2. King Mongkut's University of Technology Thonburi
3. King Mongkut's Institute of Technology Ladkrabang
4. Kasetsart University
5. King Mongkut's University of Technology North Bangkok

The differences of wages were captured by simple hypothesis tests to compare the difference between the mean wage of Top school and Non top school engineers.

Wage information was obtained from asking young engineers about their wage rates. Accidental sampling was applied. However, the target engineers had to meet the following criteria: not in the probationary or trial period, 28 years old maximum, 4 years maximum graduated from the engineering school, no or 4 years maximum engineering experience, no or having the paper based Toefl score of 493 (or equivalent) maximum, and no or having associate level of engineering license maximum. The surveys for wage information were conducted 4 times in May 2015, August 2015, November 2015, and February 2016 to match the contractors' top school information. The survey areas were the same as those of the contractors.

April and May 2015's information:

Top school engineers:

20 observations

25,557 Baht per month of mean wage

1,252,483 of variance

Non top school engineers:

40 observations

22,633 Baht per month of mean wage

36,594,358 of variance

Mean wage difference: 2,924 Baht

Pooled variance: 25,016,847

t-stat: 2.134**

** means a significance level of 0.05 or better.

July and August 2015's information:

Top school engineers:

24 observations

26,452 Baht per month of mean wage

6,637,567 of variance

Non top school engineers:

36 observations

21,615 Baht per month of mean wage

21,295,111 of variance

Mean wage difference: 4,837 Baht

Pooled variance: 15,482,637

t-stat: 4.665***

*** means a significance level of 0.01 or better.

October and November 2015's information:

Top school engineers:

22 observations

27,885 Baht per month of mean wage

13,718,168 of variance

Non top school engineers:

35 observations

22,389 Baht per month of mean wage

29,041,779 of variance

Mean wage difference: 5,496 Baht

Pooled variance: 23,190,945

t-stat: 4.195***

*** means a significance level of 0.01 or better.

January and February 2016's information:

Top school engineers:

20 observations

25,987 Baht per month of mean wage

8,901,114 of variance

Non top school engineers:

25 observations

22,726 Baht per month of mean wage

28,870,541 of variance

Mean wage difference: 3,261 Baht

Pooled variance: 20,046,841

t-stat: 2.428**

** means a significance level of 0.05 or better.

From these results, we can see that on average the top school engineers had significantly higher wage rate than those from the non top schools. The survey in April and May

2015 showed the mean wage difference of 2,924 Baht per month or the top school earned 12.92% more than the non top. The survey in July and August 2015 showed 4,837 Baht or 22.38% more. The survey in October and November 2015 showed 5,496 Baht or 24.55% more. Lastly, the survey in January and February 2016 showed 3,261 Baht or 14.35% more. If we approximately take the average of these figures, we can roughly say that in general the top school engineers have 4,130 Baht per month higher wage rate than that of the non top school engineers or about 18.55% more. The 18.55%, hence, is the approximate key cost for our discussion. More precisely, to hire the top school engineers, contractors have to pay wage about 18.55% higher than amount they pay the non top school engineers.

Moreover, the relationship between school rating and wage rate was found in the third survey (October-November 2015). In fact, the relationship was tested for data from every survey but only the third survey data provided significant results. To test the relationship, the researcher applied a simple correlation technique. The most rated top school received score of 6. The lower rated schools received 1 score lower respectively. However, all non top school received score of 1. Hence, for the third survey, Chulalongkorn University received score of 6, King Mongkut's Institute of Technology Ladkrabang received score of 5, Kasetsart University received score of 4, King Mongkut's University of Technology Thonburi received score of 3, Chiang Mai University received score of 2, and other schools besides the schools mentioned received score of 1. Then, the scores of schools and the engineers' wages were recorded together in a spreadsheet and carried on for hypothesis testing of correlation. The hypothesis testing result of the third survey was below:

Observations: 57

$r = 0.601$

$t\text{-stat} = 5.577^{***}$

*** means a significance level of 0.01 or better.

With a significance level of 0.01 or better, the data from the third survey told us that the linear relationship between school rating and wage rate was quite strong ($r = 0.601$). An engineer graduated from the higher rated school tended to earn more than that of the lower

rated one. Although this was a small piece of evidence of relationship between school rating and wage rate, it was quite important in wage equation. School rating could influence wage rate somehow. Hence, ranking, rating, popularity check, or poll of schools revealed to public or even value of each school in an individual's mind should not be ignored in the study of wage difference or determination of wage.

Employers' Views

One week after having names of the top schools, a team of research assistants conducted other surveys in the same areas searching for contractors or their credible representatives. The research assistants applied the accidental sampling and intended to maintain the same number of respondents. The target contractors were interviewed in order to extract information about hiring engineers, especially, comparison between engineers from top school and non top schools.

Two direct target questions that were pertinent to the title of this article were asked:

- 1) "From your experience, comparing between young engineers just graduated from the schools on the list here (the top schools) and those not on the list, in your opinion whose performance is worth wage paid?"

Respondents: 150

Top schools: 83.33%

Non top schools: 11.33%

Cannot tell: 5.33%

- 2) "Do you realize that to hire engineers graduated from the schools on the list here (the top schools), you have to pay more?"

Respondents: 150

Yes, I realize that: 62.67%

No, I do not realize that: 37.33%

Below is summary of the contractors' opinions received from the interviews regarding the view point on hiring engineers from top versus non top schools:

Top School Engineers

Pros:

- They have strong engineering knowledge.
- They produce high quality of work in timely manner.
- They are dependable.
- They are smart and energetic.
- They produce minimal waste and keep cost of production low.
- They are industrious and painstaking.
- They have high sense of responsibility.
- They have high managerial and leadership skills.
- They understand complex tasks and work well in difficult situations.
- They have high sense of creativity.
- They provide low risk of recruitment and shorten time of applicant screening.

Cons:

- They request high wage.
- They often stay with us for the short period.
- They are sometimes too vigilant and too scrupulous.
- They have low patience and humbleness.
- They are too proud and too independent.
- They firmly follow academic principles and professional ethics.

Non Top School Engineers

Pros:

- They are not fastidious about wage rate.
- They follow order.
- They are willing to work at irregular hours, weekends, and holidays.
- They are dedicated and willing to learn.
- They are quite responsible.
- They are friendly and humble.
- They coordinate well with laborers and foremen.
- They have high patience against hard works and reprimand.

Cons:

- They have superficial engineering skills.
- They have higher rate of blunders and produce higher cost of production.
- They need guidance when face complicated tasks.
- They lack self confidence.
- They are less initiative, dynamic, and self motivated.
- They sometimes blend together duty and private matters.

As we have seen from the key cost section that the top school engineers earned 18.55% more on average than the non top school engineers. In this section, we found that the contractors seemed to realize this matter. Although the contractors might not observe exact figure of how much more, the majority of the contractors (62.67%) knew that to have top school engineers working for them they had to pay more. When asked to compare worthiness of wage paid between hiring the top school engineers and the non top school ones. Overwhelmingly, the contractors said hiring the top school is worth more (83.33%). The study found that the contractors emphasized the productivity characteristics such as strong engineering knowledge,

having high work quality, and dependability that often found in the top school engineers and the contractors valued these more than other characteristics. Interestingly, the opinion of “they firmly follow academic principles and professional ethics” was seen as a weakness of the top school engineers. This could leave questions to the contractors concerning their work methods and quality controls.

Conclusion

Overwhelmingly, 83.33% of the contractors replied that the performance of the top school engineers was worth the wage paid more than that of the non top schools. This finding should help to answer the question, “does it pay to hire engineers from top engineering schools?” Together with the evidence that wage difference did exist. The top school engineers earned more than the non top schools 18.55% on average and many productive characteristics found in the top school engineers were superior and preferred. From the contractors’ standpoint, the productive characteristics might be a source of benefit that could outweigh expensive cost of hiring the top school engineers and the contractors seemed to appreciate this. Perhaps, the productive characteristics may only be in the person who enthusiastically determines to enroll in the top schools that are highly competitive at entry and during study. This implies that competition may be a key to promote productive characteristics in persons. Hence, school look, entrance examination, admission process, teaching methods, learning styles, determination, industriousness, or any factors leading to graduation from the top schools could be seen as students’ investment that should in turn provide the students with high market demand and lucrative compensation.

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