

Aligning Construction Management Students' Minors with the Needs of Industry Professionals

Isaac Maximov

California Polytechnic State University
San Luis Obispo, CA

While in college, students will have to decide if they want to pursue a minor, in addition to their bachelor's degree. To pursue a minor one has to take additional units, and one usually does this without any free electives, meaning their graduation date is most likely delayed. A minor, in theory, should provide additional benefits such as being more hireable and earning potential; however, in the construction industry, the minors construction management students are taking do not align with the needs of construction industry professionals in. And while most students believe having a minor will increase their salary, this is not the case most of the time. Trying to pursue a minor will most likely cost a student additional time in school, and they will not be more hireable, or get a salary increase when hired full time. However, industry professionals are very interested in minors that are directly related to construction that are not yet currently offered at California Polytechnic State University San Luis Obispo. If these were offered as minors it could potentially give students the advantages listed above.

Key Words: Minor, Construction Management Students, Hireable, Salary,

Introduction

While in college, students have the opportunity to expand their knowledge separate from their degree courses with the option of pursuing minors. "Minors can either counterbalance or complement a main area of study" (Slatalla, 2008). Many students believe achieving a minor will make them a more desirable candidate for a full-time job, and if they have a minor their salary will be higher compared to someone with just a bachelor's degree; I was one of those students who believed this to be true. This paper will discuss what minors Construction Management students at California Polytechnic State University are taking, and how long it takes students to achieve their minor. It will show how industry professionals feel about the minors students are taking, and if they believe if there are any benefits for having a minor, and what minors industry professionals would like to see students taking.

Background

When the author began his junior year of college at California Polytechnic State University, I wanted to minor in Sustainable Environments and began taking classes to receive this minor. If I continued to pursue a minor my graduation date would have been delayed by approximately two quarters to complete the additional units required for the minor. During my summer internship I told my project manager, and project engineer that I was planning on minoring in Sustainable Environments, they both told me if they saw that on a resume it would not carry any significance with them on deciding to hire me as an employee or not. Instead of continuing to pursue a minor, I decided to stop and just focus on my major courses and graduate on time with just my bachelor's degree.

Purpose

The purpose of this paper is help align students who want to minor in something that meets the needs and wants of industry professionals, and to help students figure out what minors will make them more hireable and desirable in the construction industry. In addition, the author would like to see if there is any correlation between having a minor and a raise in salary. The author would like to help the Construction Management Department formulate ideas about new minors or concentrations directly involved with the construction industry, and help figure out if they would provide additional benefits to the Construction Management students.

Methodology

The objective of this educational research are as follows:

- Consider what the most common minors are taken by Construction Management students.
- Consider what minors industry professionals find desirable.
- Understand if there is a correlation between having a minor and an increase in starting salary.
- Consider if pursuing a minor will delay graduation for students.
- Give this information to current and future Construction Management students so when they choose a minor they can base their decision on what companies want.
- Align the minors of the current and future Construction Management students to meet the needs of industry professionals.
- Give suggestions to the Construction Management Department on creating specific construction related minors.

The methodology chosen for this educational research was primarily qualitative. The qualitative study was done through several surveys. The first survey was sent to all of the Construction Management students at California Polytechnic State University. In the first survey, the author asked for general information on the student, which included what year they are, and if they are pursuing/considering to pursue a minor. The author wanted to get more specific information on the minors, so the students were asked which minors they are taking, the extra amount of units needed to complete the minor, and if their graduation is delayed in pursuit of the minor. The purpose of the first survey was to collect current data on what minors students are taking, and use that information to see if industry professionals are more interested in students with minors, and if there is certain minors they would like to see over another.

The second survey was sent out to a large pool of industry professionals from various sectors of the construction industry. Based on the survey results most of the responders are directly related to hiring new employees for their respected companies. The author asked the industry professionals to say what they majored in while attending college, and if they pursued a minor. The author listed the most common minors, and asked them to rank each minor based on if they believe if they believe the minor would either “greatly impact hiring”, “may impact hiring”, or have “zero hiring impact”. They were also asked if any of the minors would give a student a higher salary compared to someone without one. Lastly the industry professionals were asked how they feel about students taking construction specific minors if they were offered. The purpose of the second survey was to see if having a minor provides any clear benefits for students. In addition the author wanted to see if industry professionals would like to see construction related minors as part of student’s curriculum.

Once the data was collected from the first survey, the author analyzed the data trends of what minors students are taking, and the repercussions pursuing one has on graduation. The data from the first survey was used to create the second survey. The author analyzed the responses from the second survey to create a consensus if there are any additional benefits to taking a minor.

Results

The data collected came from the two different surveys conducted by the author. Both surveys were anonymous, the first survey was sent to every student that is majoring in Construction Management at California Polytechnic State University. The second survey was sent to wide pool of industry professionals who have a relationship with the Construction Management Department.

Construction Management Student Survey

The first survey was sent to every student major in Construction Management, out of the fifty-four responses received nearly 54% of students are either currently, or considering, pursuing a minor. Figure 1 pictured below, shows the percentages of each minor based off the survey results. 29.7% of construction management students pursue a Real Property Development minor, 20.4% are pursuing an Architectural Engineering minor, and the third most common minor is a Spanish minor with 11.1% of students trying to receive this minor.

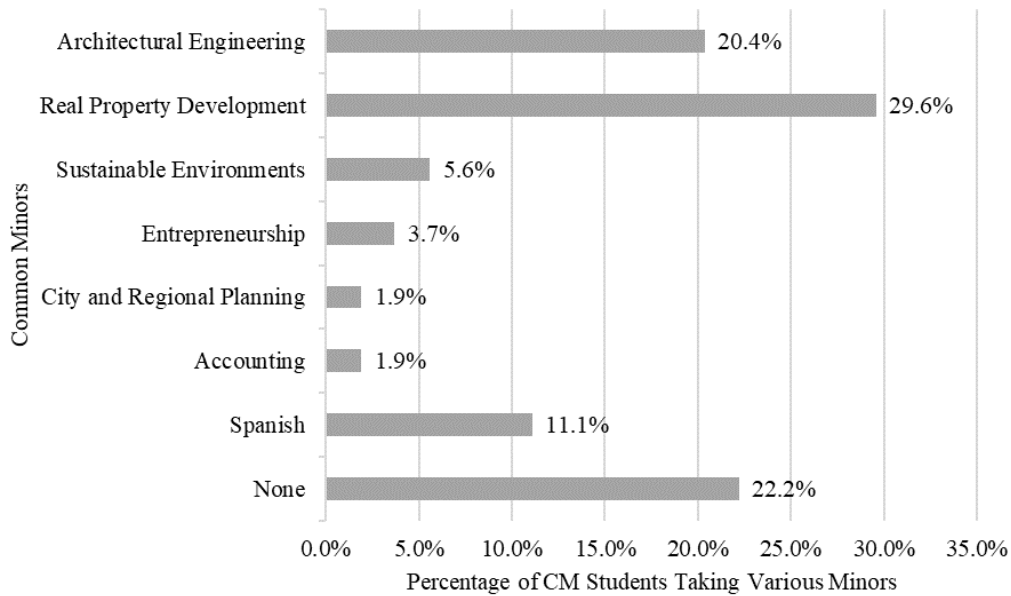


Figure 1: The most common minors taken by Construction Management students

While completing a minor students will have to take additional units to achieve their minor, this most likely means additional time at school. According to the California Polytechnic State University catalog; to achieve a Real Property Development minor requires a student to take an additional 24 units. An Architectural Engineering minor requires 27-28 additional units, and a Spanish minor requires 24 units. In the first survey the author asked the students if pursuing a minor will push their graduation date back, the results show 46% of students taking a minor will have their graduation date pushed back to complete it. Figure 2 shows how many quarters pursuing a minor will push their graduation back.

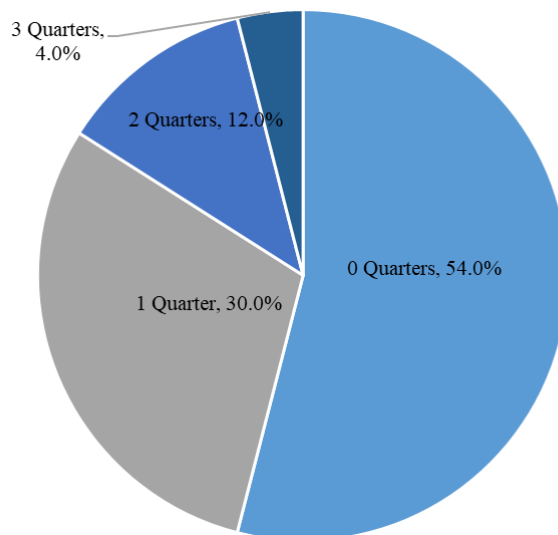


Figure 2: The amount of quarters students' graduation are pushed back in order to pursue a minor

For most students to complete a minor they must push back their graduation in order to complete all the additional units. 30% percent of students will need only one extra quarter, 12% require two extra, and 4% will need three quarters which is an entire school year. Pursuing a minor is a large commitment and requires additional amount schooling, this also means it will cost the student as well. According to the Cal Poly San Luis Obispo administration website, tuition cost is \$3,144.00 per quarter. A student could be paying roughly \$3,000- \$9,000 to receive a minor, this does not include opportunity cost of graduating on time and potentially starting their career and earning a salary. In the first survey the author asked the students why they are pursuing a minor, and nearly 40% of students said they are pursuing a minor strictly for career purposes. Since this is the case the author then conducted a survey to figure out what minors industry professionals view as desirable when hiring a new employee, and if it is worth the student's time and money to seek one out.

Industry Professionals Survey

The second survey the author conducted was sent to industry professionals from various companies, who work in all different sectors of the construction industry. Of the 75 respondents, 100% of them went to college, 63% majored in Construction Management, and the second highest being Civil Engineering at 15%, and out of the 75 responses 81.3% did not minor in anything while attending college. Nearly 91% of the industry professionals who responded to survey have a direct impact in hiring new employees.

Based off the results of the previous survey given to construction management students, the author took the statistics of the most common minors and asked industry professionals to rate the minors on which minors they believe would either: greatly impact hiring, may impact hiring, or if that minor has zero impact on the hiring decision. According to the survey results, 18.0% of industry professionals said having an architectural engineering minor would greatly improve your chances at getting hired. 19.2% of the industry professionals believe an accounting minor would greatly impact their hiring decision. Accounting also received the lowest amount of responses on having zero impact while hiring, only 17.8% said of the industry professionals said it would have "zero impact". This leads the author to believe that Accounting is the most desirable minor to the industry professionals who responded to the survey.

City and Regional Planning is the minor that industry professionals believe would create the least at amount of impact when it comes to hiring a new employee. 50.7% said a prospective employee with a City and Regional Planning minor would have zero impact on their hiring decision. It also received only 4.1% responses of "greatly impact hiring" this leads the author to believe a City and Regional Planning minor is the lease desirable minor to the industry professionals. The most common response for every minor was "may impact hiring" with an average of 53%, the second most common response was "zero impact on hiring" with an average of 35%, and finally the average for "greatly impact hiring" is 12%. The results for all of the response for every minor are listed below in (table 1).

Table 1

Hiring impact of having a minor

	Greatly Impact Hiring	May Impact Hiring	Zero Impact on Hiring
Real Property Development	5.5%	53.4%	41.1%
Architectural Engineering	18.0%	59.7%	22.2%
Spanish	16.4%	50.7%	32.3%
Sustainable Environment	9.6%	54.8%	35.6%
Entrepreneurship	10.9%	46.6%	42.5%
City Regional Planning	4.1%	45.2%	50.7%
Accounting	19.2%	63.0%	17.8%

Along with being asked to rank the minors on hiring impact, the author also asked the industry professionals believe having a minor will increase a prospective employee's starting salary. 51% of industry professionals believe there is no compensation difference from a new employee with a minor compared to a new employee without one. 6.8%

believe there is a small compensation bonus of \$500-\$1,000, 18.9% believe there is a bonus of \$1,000-\$2,500, 18.9% believe there is a bonus of \$2,500-\$5,000, and 4.1% of the industry professionals believe there is a compensation bonus of \$5,000 or more. Given these numbers, the author would recommend students who are pressed for money, like most college students are to examine these numbers and know that if they do decide to pursue a minor, they will most likely not receive any compensation bonus, and if they do receive one it will be a very small number, that will most likely not cover one quarter at California Polytechnic State University San Luis Obispo.

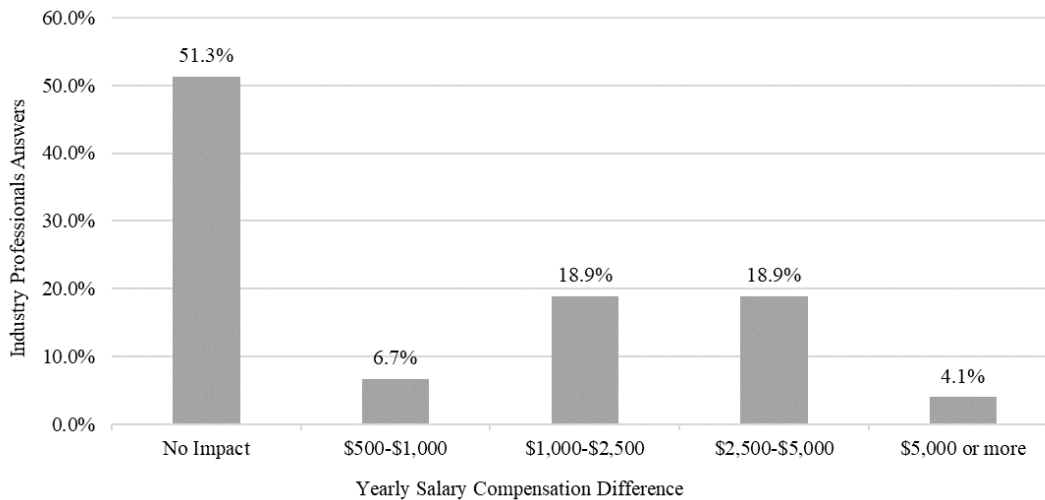


Figure 3: Change in salary based on having a minor

The information presented in (Figure 3) does show a majority of industry professionals believe having a minor will not impact a new employee's salary, and only 23% believe it would raise a prospective employee's salary enough to pay off what one additional quarter at California Polytechnic State University San Luis Obispo would cost. This leads the author to believe students who pursue a minor are losing their return on investment strictly based on a monetary value.

Conclusion

According to the data collected in the surveys, nearly 20% of Construction Management students are minoring in Architectural Engineering, and 18% of industry professionals believe having this minor would greatly impact hiring that person. Architectural Engineering is the second most common minor taken by Construction Management students and it is also the second highest minor that would greatly impact hiring. Accounting is the highest rated minor that industry professionals believe would greatly impact getting hired, however only 1.8% of Construction Management students are minoring in accounting. The three minors that industry professionals believe have the highest impact in hiring a new employee are Accounting, Architectural Engineering, and Spanish (in that order). The three most common minors taken by Construction Management students are Real Property Development, Architectural Engineering, and Spanish (in that order). 40% of students are pursuing a minor for career purposes, those who are should be taking the minors that industry professionals believe will greatly impact them if they are hired or not. The author would recommend to choose one of the three minors listed above, if their goal in receiving the minor is to become more hireable. The author also asked if there are any other extra-curricular activities they would like to see on a resume, and a lot of the industry professionals said they are always looking to see if a new employee participated in an ASC competition.

According to the second survey 77% of industry professionals believe having a minor will have either zero impact or a small compensational impact, not enough to pay for one quarter at Cal Poly San Luis Obispo. For the students

whose graduation will be pushed back in lure of pursuing a minor will most likely not be able to pay back the additional cost of school required to receive the minor. From a monetary standpoint, the author believes if a student has to stay additional quarters to complete their minor, it would not be a good return on investment. There is a small chance it raises their salary, and if it does it most likely does not cover the cost of one quarter at school, in addition for all the minors the author asked the industry professionals to rank there was an overwhelming majority that each minor may impact hiring, meaning having a minor does not necessarily make a student a stronger candidate for hire. It leads the author to believe that minors will help a student become more hireable if they are looking at a very specific type of job in the construction industry.

Future Research

The most common minors taken by Construction Management students do not seem to make a difference for most of the industry professionals. Accounting had the highest percentage of interest from industry professionals who believe it would make a big impact in hiring with 19.2%. The author asked the industry professionals if they believe students with minors directly related to construction would have a higher chance of getting hired, the author suggested several construction related minors, and also asked the industry professionals to list any other minors they would like students to see. These suggested minors are not currently offered at California Polytechnic State University San Luis Obispo. (Table 2) shows the construction related minors that are not currently offered, and the percent of industry professionals that believe these potential minors would make a construction management student more hireable.

Table 2

Minors that are not currently offered

Minors not currently offered	Percentage of industry professionals
BIM/VDC	72%
Carpentry	51%
Jobsite Management	76%
Estimating	40%

A majority of the industry professionals who responded to the survey believe if students have these suggested minors, they would become more hireable. It might be in the interest of the Construction Management Department, and the College of Architecture and Environmental Design of California Polytechnic State University San Luis Obispo to look into creating programs to develop these specific construction skills as minors, or perhaps as a concentration a Construction Management student can take to develop their skills in a specific area of construction.

References

- Architectural Engineering Minor* (2018) [WWW Document]. URL <http://catalog.calpoly.edu/collegesandprograms/collegeofarchitectureandenvironmentaldesign/architecturalengineering/architecturalengineeringminor/>
- Hoyt, E. (2017, June 23rd) *What can a college minor do for you?* [WWW document]. URL <https://www.fastweb.com/college-search/articles/what-can-a-minor-do-for-you>
- Quarterly Registration and Tuition Fees* (2018) [WWW document]. URL <https://afd.calpoly.edu/fees/>
- Real Property Development Minor* (2018) [WWW Document]. URL <http://catalog.calpoly.edu/collegesandprograms/collegeofarchitectureandenvironmentaldesign/realpropertydevelopmentminor/>

Slatalla, M (2008, April 20th) *What's your minor?* [WWW document]. URL

<http://www.nytimes.com/2008/04/20/education/edlife/guidance.html>

Spanish Minor [WWW document]. URL

<http://www.catalog.calpoly.edu/collegesandprograms/collegeofliberalarts/worldlanguagescultures/spanishminor/>