

# Choice of college major influences lifetime earnings more than simply getting a degree

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A new study based on longitudinal data confirms a college degree provides an advantage in lifetimes earnings, but a related decision once students make it to college could prove to be even more crucial.

The study that includes a University of Kansas researcher found large lifetime earnings gaps depending on a student's field of study. For examples, men who major in science, technology, engineering and mathematics, or STEM fields, and earning a bachelor's degree achieved roughly \$700,000 to \$800,000 higher 40-year lifetime earnings from ages 20 to 59 than social science or liberal arts majors.

"That means the decision for whether for you going to college versus what kind of major you want to study, the latter decision is more important for your lifetime earnings," said Kim, a KU associate professor of sociology and the study's lead author.

Below are the top five degree programs, based on lifetime earnings, for men and women:

**1.** Medicine or dentistry graduate degree: \$5.25 million for men; \$2.12 million for women

**2.** Business graduate degree: \$2.91 million for men; \$1.89 million for women

**3.** Law graduate degree: \$2.9 million for men; \$1.77 million for women

**4 and 5.:** A STEM graduate degree comes in fourth for men at \$2.82 million earned; it is No. 5 for women at \$1.74 million. A STEM undergraduate degree is No. 5 for men at \$2.66 million and No. 4 for women at \$1.76 million.

The full list is below.

Social science or liberal arts majors with a bachelor's degree in social science or liberal arts majors still earn \$400,000 more than [high school](#) graduates, but gaining an advanced degree in social science does not

raise lifetime earnings substantially compared to a bachelor's degree in the same major, the study found.

Kim said the study is meant to show the labor-market differentials across field of study because there is little research right now in this area. However, the researchers don't dispute there are other benefits to earning a liberal arts or humanities degree.

"When you are educated, you have a better lifestyle. You can maybe enjoy more complicated books, so you have more engaging or more interesting conversations with value," Kim said. "There is a whole other benefit of education. A liberal arts education is good, but it doesn't necessarily transform into a high salary."

Surprisingly, men who have a college degree in an education major earn only \$46,000 over 40 years compared to [high school graduates](#). When a 4 percent annual discount rate is applied for future earnings, the lifetime value of college degree for some majors compared to a high school degree turns out to be slightly negative.

The journal *Sociology of Education* recently published the [article](#) "Field of Study in College and Lifetime Earnings in the United States" online, and the study will appear in the October edition of the journal *Sociology of Education*.

This is the first study to use nationally representative survey data matched to longitudinal earnings data spanning a long stretch of the same person's life to document how lifetime earnings vary by field of study and how lifetime earnings change by getting an advanced degree in different fields. Past studies had relied on either one year or a limited number of years of data with projections and did not estimate the effect of field of study on lifetime earnings for those who have an advanced degree.

The researchers examined Social Security Administration personal income tax data to follow the earnings of the same individuals over 20 years and then estimated the long-term effects of fields of study for U.S. men and women. The study included three measures of lifetime earnings: gross lifetime earnings by majors; net lifetime earnings after accounting for demographic and high school performance related factors; and net present value at age 20 after applying a 4 percent discount rate.

Kim said the overall findings likely aren't surprising because engineering and professional jobs that require STEM or business degrees do gain higher economic returns in the open market. However, he said the degree of difference in earnings suggested the horizontal stratification in education across field of study appears to be more consequential than the usual focus on vertical stratification, which refers to the earnings gap between levels of education.

For one, it illuminates the importance of foregoing some earnings, especially in your 20s while attending graduate school, especially for students in majors that wouldn't typically earn high returns over their lifetime. Attending graduate school in the social sciences or liberal arts added much less earnings than a graduate student in a professional field, for example.

"The reason why going to graduate school is not going to be very beneficial for some majors in terms of financing is to get the degree you need to spend your time in school for an extended period of time. That's time you're not going to be working. Even though you earn more after getting a degree, it is not enough to substantially raise your [lifetime earnings](#)," Kim said.

However, the findings could be key in two other areas: examining the effects of gender on earnings and economic inequality.

Related to gender, college degrees no matter the field of study seem to benefit women with higher earnings compared with women who only graduated high school. For men in some fields of study, the earnings return would not be as high as a woman over her high school counterparts.

"This is not because college-educated women earn more than equally educated men," Kim said, "but because labor market opportunities for less educated women are so scarce."

Also, other studies have found that students from less-educated families tend to flock more to STEM fields or others with higher earnings returns than students of educated parents, who might be more inclined to choose a liberal arts degree.

"This kind of major choice we have is one mechanism to actually reduce economic inequality," he said.

**More information:** The full list of majors, divided by gender:

Estimated net lifetime earnings by field of study:

## Men

1. Medicine or dentistry graduate degree - \$5.25 million
2. Business graduate degree - \$2.91 million
3. Law graduate degree - \$2.9 million
4. STEM graduate degree - \$2.82 million
5. STEM bachelor's degree – \$2.66 million

6. Business bachelor's degree - \$2.26 million
7. Health science bachelor's degree - \$2.11 million
8. Social science graduate degree - \$1.98 million
9. Liberal arts/humanities bachelor's degree - \$1.88 million
10. Social science bachelor's degree - \$1.86 million
11. Education master's degree - \$1.86 million
12. Liberal arts/humanities master's degree - \$1.81 million
13. Education bachelor's degree - \$1.53 million
14. High school graduate - \$1.49 million

## **Women**

1. Medicine or dentistry graduate degree - \$2.12 million
2. Business graduate degree - \$1.89 million
3. Law graduate degree - \$1.77 million
4. STEM bachelor's degree - \$1.76 million
5. STEM graduate degree – \$1.74 million
6. Education graduate degree - \$1.5 million
7. Health science bachelor's degree - \$1.44 million

8. Social science graduate degree - \$1.39 million
9. Business bachelor's degree - \$1.38 million
10. Liberal arts/humanities master's degree - \$1.19 million
11. Social science bachelor's degree - \$1.05 million
12. Education bachelor's degree - \$1 million
13. Liberal arts/humanities bachelor's degree - \$0.98 million
14. High school graduate - \$0.73 million.

Provided by University of Kansas

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