

LOOKING TO JORDAN TO IMPROVE STEM EDUCATION IN THE U.S.

Research Question |

What are the dominant factors that have resulted in Jordan having female undergraduate engineering enrollments of 45% compared to 19% in the United States.

Methodology |

Semi-structured interviews We interviewed faculty, staff and students at the Jordanian University, as well as professional female engineers. Interviews were structured to reveal information about the Jordanian education system as well as why female students pursued engineering and what their experiences at university and in the work force were like.

Online Survey To reach a broader population of students than we could with interviews, we created a Qualtrics survey. The survey was targeted to Jordanian engineering students, both male and female. Respondents were asked about their experiences in the classroom and why they chose to study engineering.

Results |

Our research identified four main reasons why Jordanian women choose to study engineering. They are prestige, salary, family values and the high school exit exam called the tawjihi.

prestige Interviewees said the title of engineer in Jordan comes with high status and a sense of empowerment. A female student at the Jordanian University said, "Society looks favorably at women doctors and engineers, [they are] looked upon as women who have excelled." This sentiment was voiced by professionals as well. One professional female engineer said that when people hear about her profession they say, "You are an engineer? Wow!" Another professional architect said that females prefer to study engineering over medicine because medical school is costly and time consuming.

salary There is high income associated with engineering careers. A female professional architect said, "If you want to grow a family that is financially secured and you are the main resource or you are participating of the financial funding for your family, engineering as a job is somehow financially secured." Professors, students and other professionals echoed this statement. A female professor in the Educational Sciences faculty at the Jordanian University stated, "People will go to the majors that will ensure the highest income, which happens everywhere in the world."

family values One female professional engineer said that there was a "social commitment" to help support your family. This can be two-fold. Many interviewees noted the necessity of two-incomes for a Jordanian family. Some interviewees said that having a career allows them to support their children. Yet others said that they give some of their income back to their parent's family to help support them and pay for the education of their siblings.

tawjihi At the secondary level, in Jordan, women outperform men in school. Jordanian students take an exam called the tawjihi before applying to universities. In 2013, 58% of males received a passing Tawjihi score while 71% of females passed. In order to study engineering, university applicants must have high tawjihi scores. Asked to rate the influence of their Tawjihi score on their field of study on a scale from zero to ten, seven engineering students responded with an average of 4.43. Tawjihi scores are public information and are published in Jordanian newspapers.

Next steps |

Further studies could build on this research. Researchers could conduct similar investigations in other developing countries that expand upon the basis we built in Jordan. Additionally, the research could be used to inform and develop STEM curriculums and programs in the United States and improve the rates of women in STEM fields.



