

**Quiz: R Project Draft**

Course Code and Number: CIS663

Course Section: 01

Name: Yang Song

Student ID: M00000995

**Instructions**

|  |
| --- |
| Please read the instructions below. Failure to comply with the instructions will result in a penalty ranging from 5% to 100% of the grade |

1. Use this document as a template for your response. In other words, type your student information and your answers into the document. Please do not delete anything from this document **[5% penalty]**
2. Please name the MS Word file that you send me as follows: “YourStudentId\_FirstName\_LastName\_CourseCodeNumber\_SectionNumber\_Project\_Draft\_SemesterYear.doc” For example, a student named John Smith with a student ID 00100001 from Section 01 will have the following file name: 00100001\_John\_Smith\_CIS663\_Section01\_Project\_Draft\_Spring2019.doc **[5% penalty]**
3. Please submit the assignment to via Canvas before the specified deadline. **There will be a penalty for every day late (please refer to the syllabus). If you don’t submit your assignment properly – your assignment will be classified as “late” until it is properly submitted.**
4. No cheating please **[100% penalty]**
   * This is an individual assignment: you must complete this assignment on your own. Cases where two or more submissions have a larger overlap or when a student doesn’t seem to be knowledgeable in the assignment that he or she submitted may be investigated
   * If you use text from the Internet, textbook, etc. please make put an appropriate citation to make it explicit that you are using information from these sources (even in paraphrased form)

**Identify Problem and Motivate its Importance [4pts]**

**Sexism**, defined as prejudice or discrimination according to sex or gender and typically against females, has been argued in the Information Technology (IT) field since IT has been becoming a more and more popular occupation, such as a high ratio of male to female, graduation rates for IT-related degrees. The statistic in history shows that only, 13.6% of computer science bachelor’s degrees were granted by females in the U.S.; it increased to 37.1% in 1984. In 2014, Google revealed that 30% of its global employees were females; At the begging of 2015, the New York Times claimed that merely 30% of their employees were females in large technology companies; in Silicon Valley, 11% of executive-level employees and 20% of software developers were females. There are only 18% of female technical employees in Google. In 2014, The New York Times also found, that females in IT obtain less income than males and males can gain dramatically 61% more than females. Some discriminable studies hold that: higher-level management believes that men employees are more capable than women employees, so they are more likely to hire men employees (Wikipedia, 2022).

Not only had sex discrimination & work situations become an illegal term in US laws, but sex-based discrimination can also impact work and companies in a lot of ways. Sexism can become an obstacle for female employees to promote; this will decrease their morale and innovative ability. It is not unusual that sexism in a workplace can make poor performance, and this can also make a company stagnant. When sexism in an IT company spread out, it will be difficult for the company to hire qualified employees; meanwhile, sexism also can blind a company to the most qualified candidates (Chron 2022).

**Literature Review [4pts]**

Females can represent fifty percent of our world’s population, but unfortunately, there is still a long way to accomplish full equality of rights and opportunities between males and females. “Among the purposes of the UN declared in [Article 1 of its Charter](https://legal.un.org/repertory/art1.shtml) is *‘*To achieve international co-operation … in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion.’” (United Nation, 2022). Therefore, sexism, the purpose of this research, is defined as “prejudice or discrimination against a person or group based on their sex or gender. It primarily affects women and girls.” (Medical News Today, 2022).

Sexism is classified in three ways, hostile, benevolent, and ambivalent; sexism also can be categorized on three levels, institutional, interpersonal, and internalized. Hostile sexism means beliefs or behaviors which are explicitly hostile against a group of people according to their gender. Examples can be: “using sexist language or insults, making threatening or aggressive comments based on a person’s gender or sex, or engaging in the physical or sexual assault” (Medical News Today, 2022). Benevolent sexism refers to views and behaviors that females as “innocent, pure, caring and nurturing, fragile and in need of protection, and beautiful” (Medical News Today, 2022). Ambivalent sexism is a mixture of benevolent and hostile sexism. An example of ambivalence can be “differentiating between ‘good’ women and ‘bad’ women based on how they dress” (Medical News Today, 2022). Institutional sexism happens when policies, procedures, and laws create or reinforce sexism, such as a shortage of sex diversity among political leaders or business executives, or gender pay differences (Medical News Today, 2022). Interpersonal sexism can occur in interactions with others, in workplaces, within relationships, or with strangers. Internalized sexism means someone has sexist beliefs about himself/herself (Medical News Today, 2022).

**Research Question(s) [3pts]**

In this project, this question will be studied: Whether Sexism exists in the IT industry?

**Theory [4pts]**

If sexism exists in the IT industry, the following hypotheses are expected to be true:

H1. Female developers are likely to earn a lower salary in comparison to male employees

H2: Female developers are likely to report lower job satisfaction than male employees

**Data[4pts]**

The data are obtained from Stack Overflow Annual Developers Survey by StackOverFolow and this study will focus on the latest five years (2017-2021). The survey has collected approximately 80,000 developers’ responses from more than 180 countries. Each year, the survey examined every aspect of developers: salary, gender, age, experience, education level, and so on. These variables will compare salary and job satisfaction among developers of various gender groups while controlling for their age, experience, and educational level.

**Methodology [4pts]**

After the data are retrieved into RStudio, they will be cleaned by removing missing values and developers outside of the U.S. this important step will help us gain more reliable findings. Next, an experimental analysis will be conducted to discover whether there is a gender pay gap or other significant related variables which contribute to salary.

After this experimental analysis, two linear regression models will be employed to verify the impact of gender on salary and stratification while holding other variables as age, experience, and so on.

**References [2pts]**

Effects of gender discrimination on mental and physical health. (2021, June 23). Www.medicalnewstoday.com. <https://www.medicalnewstoday.com/articles/effects-of-gender-discrimination#wider-impact>

‌‌United Nations. (2021). *Gender Equality*. United Nations. <https://www.un.org/en/global-issues/gender-equality>

Ways That Gender Discrimination Impacts a Company. (n.d.). Small Business - Chron.com. <https://smallbusiness.chron.com/ways-gender-discrimination-impacts-company-2848.html>

Wikimedia Foundation. (2021, October 17). *Sexism in the technology industry*. Wikipedia. Retrieved February 21, 2022, from <https://en.wikipedia.org/wiki/Sexism_in_the_technology_industry>