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**Assessment Cover Page**

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I further confirm that this work has not previously been submitted for assessment by myself or someone else in CCT College Dublin or any other higher education institution.

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**Women in Technology Industry**

# Project proposal

## Introduction

The present report focuses on analysing women's participation in the technology industry, highlighting the challenges and opportunities we constantly face. The low representation of women in technical and leadership roles in the technology industry is a problem that affects gender equity and limits the potential for innovation and growth in that sector.

Women face persistent gender barriers in the technology industry, the lack of role models and stereotypes that perpetuate gender inequality in this field, to quote the civil rights activist Marian Wright Edelman, “You can’t be what you can’t see”.

## Objectives

### General Objective:

To investigate and understand the gender gap in the technology industry, focusing on women's participation in technical, leadership, and entrepreneurial roles.

### Specific Objectives:

Analyze gender distribution in different contexts, including by country and age group, using data from the Kaggle ML & DS Survey.

Identify the most common job titles among surveyed women and their educational levels to better understand trends in women's participation in technology.

Explore potential areas for improvement to promote gender equity in the technology industry by analyzing the challenges and barriers faced by women in technical and leadership roles.

## Problem definition

The gender gap in different roles and leadership positions in the technology industry limits professional advancement opportunities and decision-making for women. Gender stereotypes deeply ingrained in society perpetuate the perception that women are not as competent in technological fields as men, affecting their confidence and recognition at work.

The male-dominated work culture in technology companies creates an environment that is not inclusive for women, making it difficult for them to integrate and progress within the organization. Furthermore, gender bias in evaluation and promotion processes result in lower salaries, limited promotion opportunities, and less recognition for women.

# Scope and Methodology

## Scope

This project will focus on investigating the gender gap in the technology industry, exploring women's participation in the technical, leadership, and entrepreneurial roles. Gender distribution will be analyzed across different contexts, including representation by country and age group, and will suggest potential areas for improvement to promote gender equity in technology will be identified.

The project scope will include analyzing gender distribution by country and age group, as well as exploring the most common job titles among surveyed women and their educational levels. Advanced data analysis methods such as machine learning and text mining will be used to identify patterns and trends in women's participation in technology. Any analysis not directly related to the gender gap in the technology industry will be excluded.

## Methodology

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## Accomplishment Data

The Gender Statistics database is a comprehensive source for the latest sex-disaggregated data and gender statistics covering demography, education, health, access to economic opportunities, public life and decision-making, and agency.

## Attributes

### Multiple\_choice\_responses.csv

This file contains responses to single-choice questions in separate columns. For questions with multiple responses, each option was split into its own column. Text responses were encoded to safeguard user privacy, and countries with fewer than 50 respondents were grouped as the “other.”

* The dataset comprises 19,718 rows and 246 columns.
* Each column represents a different question or provides additional metadata related to the survey.

### Other\_text\_responses.csv

If "Other" was selected, respondents had the option to provide a text response. These responses were separated and shuffled to protect privacy.

* This DataFrame includes responses to open-ended survey questions.
* It consists of 19,718 rows and 28 columns.
* Each column represents an open-ended question, with responses stored as text.

### Questions\_only.csv

This file lists the questions from the 2019 Kaggle Data Science and Machine Learning Survey.

* All columns are of the 'object' data type.
* The DataFrame has dimensions of 1 row and 35 columns.

### Survey\_schema.csv

This dataset describes which questions were presented to which respondents in the survey. Generally, respondents with more experience were asked more questions.

* It contains 10 rows and 35 columns.
* All columns have the data type 'object'.
* The survey scheme dataset serves as a key reference for understanding the structure and content of the data.

# References

Mooney, P. (2019). 2019 Kaggle Machine Learning & Data Science Survey. Kaggle. URL: <https://www.kaggle.com/competitions/kaggle-survey-2019>.

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Douglas M. Branson (2018) The Future of Tech Is Female : How to Achieve Gender Diversity. New York: NYU Press. Available at: https://research.ebsco.com/linkprocessor/plink?id=e3b09355-de83-37e4-b1bf-678f33012b68 (Accessed: 27 March 2024).