

# *What Disparities Exist in the Compensation and Representation of Faculty in the Colleges of Business at Texas Public Institutions?*

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**Abstract:** When observing representation and compensation within college of business faculty in Texas public universities, what disparities exist? Further, do the compensation and representation of University faculty reflect higher education's intent of promoting equality and diversity within its institutions? Research has demonstrated improvements in representation and wage rates throughout the last several decades; however, concerns regarding a disparity in the business industry exist today. To investigate the range of the disparity, this study will conduct statistical analyses on three public universities in Texas. These universities include the University of North Texas, the University of Texas at Arlington, and Texas Tech University. Data will be collected on the annual salaries and the gender of the college business faculty members in attempts to determine whether or not gender is a statistical determinant of salary in higher education. The study will further suggest potential attempts to close the gap in modern day higher education, as well as within the business industry at large.

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## **Introduction & Overview**

As thousands of public universities nationwide attempt to diversify and provide equal opportunities among their student body, it is worth examining whether or not the higher education faculty body resembles the same diversity and equality. In response to this question, this study investigates the representation and compensation of business faculty at three public Texas institutions. Representation in this study is defined as the percentage makeup of male faculty members compared to female faculty members at the universities investigated. The universities investigated in this study are the University of North Texas, the University of Texas at Arlington, and Texas Tech University. These institutions have been selected to participate in this study as a result of the following commonalities: a comparable undergraduate enrollment size (31,000-34,000), a similar faculty size (1,200-3,500), and the benefit that they are public universities lawfully required by the Higher Education Act of 1965 to overtly display the annual data needed for this study.<sup>1</sup> Each of the selected universities additionally holds an R1 research status from the Carnegie Classification of Institutions of Higher Education,

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<sup>1</sup> The Carnegie Classification of Institutions of Higher Education. (n.d.). [http://carnegieclassifications.iu.edu/classification\\_descriptions/basic.php](http://carnegieclassifications.iu.edu/classification_descriptions/basic.php)

positioning them as “very high” on research activity and advancement.<sup>2</sup>

Existing literature expresses concern that a disparity exists in both compensation and representation, favoring Caucasian male faculty. This is a concern reinforced by the historical opposition faced by women and minorities in society, as well as the barriers faced in times of desired success or advancement dating back to the colonial era in the United States.<sup>3</sup> The present study provides a history of the roles and advancement of women in higher education from the 17th to the 21st century. This historical overview will be presented in attempts to explore possible remuneration and representation disparities of university faculty within the colleges of business at the respective universities. Following the collection, an analysis of data will be performed to reach an understanding of any existing disparities, similarities amongst the colleges in the universities studied, and trends across the industry in its entirety. A conclusion is integrated in this study in attempts to suggest ways to approach the gender gap within the higher education system as well as the business industry at large.

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<sup>2</sup> Ibid.

<sup>3</sup> Solomon, B. M. (1985). *In the company of educated women: A history of women and higher education in America*. Yale University Press.

### Literature Review

Prior to performing a data collection and analysis, it is essential to identify factors that have contributed to representation and compensation in higher education today. These factors include the evolution of gender roles, socio-economic status, and the history of impediments to obtainable opportunities.

The discussion of pay gaps, types of occupations held, underrepresentation, and organizational hierarchy pertaining to women is largely tied to the gender roles that have persisted in American society for centuries.<sup>4</sup> Beginning in the 1600s, women were expected to be the unchanging element in a changing world.<sup>5</sup> Females were believed to have had a “God-given talent” to be a mother, wife, caregiver, homemaker, religious example, domestic laborer, and the embodiment of purity and delicacy for their families and society.<sup>6</sup> In attempts to preserve this role, females were largely excluded from education, business, and other opportunities that could potentially exceed the socially accepted subordinate role a female was expected have in relation to their male spouse.<sup>7</sup> A notable advancement of the 18th century is the growth of female representation in small urban businesses and institutions, a direct result of men leaving home to fight in the Civil War and the need for women to support the open positions men left behind. This was a pivotal moment in history as women began not only investing in their own education, managing family businesses, developing authority in the household, and establishing organizations that advocated for the rights of women, but were extending this new knowledge to their children of both sexes.<sup>8</sup> With an open opportunity for societal change, female activists caught the attention of a multitude of male leaders, businesses, governments, and institutions while paving the way for what would be the beginning of women’s education in America.<sup>9</sup>

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<sup>4</sup> Solomon, B. M. (1985). *In the company of educated women: A history of women and higher education in America*. Yale University Press.

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

Though coeducation provided new learning opportunities for women, they were not treated as equals in these institutions. Women’s education was viewed as beneficial by many in society, as it allowed females to educate their sons (creating stronger male leaders), mature in their domestic roles, and potentially provide support for those females who never married.<sup>10</sup> While attending these institutions, women maintained their societal roles as they darned socks for the male students, cleaned classrooms, and cooked meals, while men did field work and performed repairs to the property.<sup>11</sup> Additionally, women were faced with a conflict in the late 18th and 19th century when they graduated from these institutions, as they struggled with living up to their education while maintaining their female role in a society that still embraced traditional gender roles.<sup>12</sup> Despite the developing urban lifestyle and increasing opportunities across multiple industries, the image of the domestic woman was still an expectation.<sup>13</sup> For those women who were fortunate enough to secure a position in the occupational realm, it was common for them to hold a role in the organization that was considered to be more feminine or of less importance to the success of the company, thus creating the foundation of “sex-typified” jobs.<sup>14</sup>

For decades, this struggle for advancement and opportunity in education and occupational roles persisted and can potentially be considered a contributing factor to the discussion surrounding the gaps and shortcomings some females experience today. A recent 2019 research study by Cornell University indicates that women who enter male-dominated careers today are subject to experience a “lack of support, lower income, a perception of incompetence, mistreatment and unfairness in their

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<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

<sup>12</sup> Ibid.

<sup>13</sup> Elson, D., & Pearson, R. (1981). “Nimble fingers make cheap workers”: An analysis of women’s employment in third world export manufacturing. *Feminist Review*, 7, 87-107. doi:10.2307/1394761

<sup>14</sup> Lawrence, A. T., & Weber, J. (2014). *Business and Society: Stakeholders, Ethics, Public Policy* (15th ed.). McGraw-Hill.

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role, and an overall lack of voice.”<sup>15</sup> Additionally, a 2006 study from *The Gender Gap in College* suggests that only 52% of female first-year college students rate themselves as having “above average intellectual self-confidence” in their abilities.<sup>16</sup>

Table 1: Gender Differences in Major Selection Among First-Year Students<sup>17</sup>

Gender Differences in Major Selection Among First-Year Students, Fall 2006			
Major	Women (%)	Men (%)	Diff. (W-M)
Engineering	2.5	14.5	-12
Business	13.6	23.6	-10
Computer Science	0.4	3	-2.6
History/PolSci	4.5	5.7	-1.2
Physical Sciences	2	2.8	-0.8
Agriculture or Forestry	0.4	0.9	-0.5
Architecture	0.4	0.7	-0.3
Mathematics/Statistics	0.6	0.9	-0.3
Technical/Applied Majors	1.1	1.3	-0.2
Fine Arts	5.5	4.8	0.7
Social Sciences	3.3	2.6	0.7
Undecided	7.8	6.4	1.4
Humanities/English	5.2	3.7	1.5
Biological Sciences	9.2	7.4	1.8
Journalism/Communication	5.1	3	2.1
Psychology	6.6	2.6	4
Education	12.5	5.9	6.6
Health Professionals	15.7	6.2	9.5

A third 2006 study displays the desired major selections of first-year students.<sup>18</sup> This data suggests that women tend to select more social, educational, and liberal arts roles, while males largely selected majors with a focus in STEM careers, all of which typically average a higher annual income than those majors selected by women.<sup>19</sup> Though this study seeks to explain gender disparities through the lens of higher education, it is essential to acknowledge that a gender gap exists on a far greater scale than simply the academic dominion.

Women are generally expected to attend a university, select a major that filters into a female-dominated occupation, and hold a sex-typified role within the occupation, arguably maintaining

wage gaps, gender roles, and a lower self-esteem in females.<sup>20</sup> The question is raised as to why women are selecting these types of majors, how the outlook of “sex-typified” jobs continue to persist, and what factors allow these trends to endure over two centuries past women’s arrival in higher education.<sup>21</sup>

While all of this research supports that normalization of current gender roles is a large contributor to the divisions among males and females in education and the workplace, it is essential to recognize the role that biological characteristics among men and women play in this discussion as well. Niaro Shah conducted a research study at Stanford Medicine concerning the correlation between genes and the differences in behaviors among the sexes.<sup>22</sup> This study found that as a direct result of the biological composition of males and females (specifically due to testosterone in men and estrogen in women), “there are inherent differences in how men and women’s brains are wired and how they work.” Further, these differences can be observed in the first two to three months of a baby’s life. For example, female infants respond more readily to faces, begin talking earlier, and develop a stronger coordination between the two hemispheres of the brain. The study states that male infants, on the other hand, “react earlier in infancy to experimentally induced perceptual discrepancies in their visual environment and possess a greater physical strength than females.” These same differences were observed in adulthood, as “women remained more oriented to faces, men to things.” The biological differences between the sexes results in differing physical and psychological behaviors among men and women and can arguably be a contributing factor to the gender roles that have persisted in society.

It is important to note, however, that these differences do not suggest either sex is incapable of

<sup>15</sup> Cornell HR Review. (2019, August 30). Women in male-dominated careers. <http://www.cornellhrreview.org/women-in-male-dominated-careers/>

<sup>16</sup> Sax, L. J. (2008). *The gender gap in college: Maximizing the developmental potential of women and men*. Jossey-Bass.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

<sup>19</sup> Powers, A. (2017, December 14). Some of the highest paying jobs of 2017 were in STEM fields. *Forbes*. <https://www.forbes.com/sites/annapowers/2017/12/02/highest-paying-jobs-of-2017/#bc7a68e1c1e8>

<sup>20</sup> Solomon, B. M. (1985). *In the company of educated women: A history of women and higher education in America*. Yale University Press.

<sup>21</sup> Lawrence, A. T., & Weber, J. (2014). *Business and Society: Stakeholders, Ethics, Public Policy* (15th ed.). McGraw-Hill.

<sup>22</sup> Goldman, B., & DuBois, G. How men’s and women’s brains are different. *Stanford Medicine*. <https://stanmed.stanford.edu/2017spring/how-mens-and-womens-brains-are-different.html>

performing certain tasks or possessing certain skills. For example, women were historically favored (and are currently favored in many third world countries) for employment in factories as their “small, nimble fingers” were more fit for the tedious work of manufacturing.<sup>23</sup> This does not infer that males are incapable of successfully performing this same task, but rather, that the job became “typified” in the favor of women and consequently rid this industry of male representation.<sup>24</sup>

Similarly, in *Pink Brain Blue Brain*, neuroscientist Lise Eliot explores the differences in the biological composition of the sexes and suggests that the largest contributor to the gender differences prevalent today are the stereotypes, presumptions, and predispositions adopted by society, all of which have previously been imposed on ourselves and consequently imposed onto others.<sup>25</sup> Eliot suggests that “by appreciating how sex differences emerge – rather than assuming them to be fixed biological facts – we can help all children reach their fullest potential, close the troubling gaps between boys and girls, and ultimately end the gender wars that currently divide us.”<sup>26</sup> In providing examples such as transgenderism, neuroplasticity, and the brain as a unisex organ, Eliot proposes fluidity between the sexes. Arguably, the biological differences between males and females result in differing behaviors, personalities, and physiques; however, Eliot challenges us to question if these differences are truly as big as the gaps that separate them today.

According to an article published by the American Association of University Women, on average, women earn less than 80 cents for every dollar a man makes, and the pay gap widens as women grow older, regardless of an educational background. Females carry more student debt than men, and mothers

(including those who never left the workforce) receive less compensation than women.<sup>27</sup> These facts highlight some of the major barriers to equality faced by women in society and open the doors to answer the question: What disparities exist, if any, in the representation and compensation of university faculty at public institutions?

### Research Methodology Statement

The following research methodology will describe the potential theory-based data analysis types, the chosen theory-based data analysis method, the sample size parameters of the study being conducted, the contextual framework in which data is explained, and the quantitative statistical measurement techniques used in analysis for shaping a conclusion.

As stated in *Theory Based Data for the Social Sciences*, the potential candidates for a data analysis method include exploratory, descriptive, elaborative, or explanatory research, each supported by qualitative, quantitative, or a combination of the two types of data presentations.<sup>28</sup> In this study, I have chosen to implement an explanatory research model supported by quantitative statistical data published by the universities investigated. This model supports causes that “share a connective contribution to an effect.”<sup>29</sup> Further, this approach questions if “an independent variable influences the dependent variable in the manner presently envisioned by theory.”<sup>30</sup> The independent variable in this study is the gender of the college of business faculty member. The dependent variable is the respective salaries of these faculty members. Extraneous variables that can potentially be a contributing factor to the dependent variable include total publications of faculty members, industry experience, educational background, position held within the department, gender representation, ethnic representation, or number of years employed by the current university.

<sup>23</sup> Elson, D., & Pearson, R. (1981). “Nimble fingers make cheap workers”: An analysis of women’s employment in third world export manufacturing. *Feminist Review*, 7, 87-107. doi:10.2307/1394761

<sup>24</sup> Lawrence, A. T., & Weber, J. (2014). *Business and Society: Stakeholders, Ethics, Public Policy* (15th ed.). McGraw-Hill.

<sup>25</sup> Eliot, L. (2012). *Pink brain, blue brain: How small differences grow into troublesome gaps--and what we can do about it*. Oneworld.

<sup>26</sup> Ibid.

<sup>27</sup> American Association of University Women [AAUW]. *Eight facts about the gender pay gap*. <https://www.aauw.org/2019/04/02/8surprising-facts-about-the-gender-pay-gap/>

<sup>28</sup> Aneshensel, C. S. (2013). *Theory-based data analysis for the social sciences*. Sage Publications.

<sup>29</sup> Ibid.

<sup>30</sup> Ibid.



## What Disparities Exist in the Compensation and Representation of Faculty?

As my research identifies the variables that have contributed to the phenomenon of the gender-gap in present day society, my data analysis seeks to explain this “connective contribution” between gender and salary in the realm of higher education through a feminist theory framework. Additionally, this study will further explain whether the factor of the type of position held within the college of business by a faculty member of a respective gender has an influence on salary. It is necessary to acknowledge the subjectivity of this type of analysis. Such subjectivity includes, but is not limited to, the following: all data collected is secondary to prior researchers; understanding the weight of each independent variable in terms of its contribution efforts to the causation of the issue at hand is unclear; secondary data can be scarce; other potential contributing factors to salary (such as total publications, experience, degree type, etc.) are not accounted for in this analysis; and data is not drawn from large-scale data sets, potentially hindering my ability to make generalized statements pertaining to the industry at large.<sup>31</sup>

The samples used for statistical analysis in this study include faculty in the Colleges of Business of the following Universities: University of North Texas, University of Texas at Arlington, and Texas Tech University. All data sampled from these universities are derived from the University publications, the Chronicle of Higher Education, and the National Center for Education Statistics, the leading source for rigorous, independent education research, evaluation, and statistics, as stated by the US Department of Education.<sup>32</sup> The data in the samples are pulled from 2017-2018 publications.

The analysis first takes into account the overall mean salaries of the colleges of business at each university, as well as the upper and lower control limits around each mean salary. Next, the mean, upper control limit (UCL), and lower control limit (LCL) of the gender-specific salaries are derived. In attempts to understand the strength of the correlation between gender and salary, a two sample means z-test at a 95% confidence interval is performed. In this test, the null hypothesis, which

states that male salaries are *not always* greater than female salaries, will either be rejected or failed to be rejected depending on the relationship between the calculated z-score and the z-critical value. Following this evaluation, a t-test will be performed to discover whether or not the consideration of position held by a faculty member of each gender in the College of Business changes the rejection or failed rejection results.

### Data Analysis

Data analysis was conducted to quantitatively analyze the relationship between gender and salary. The overall data set includes information collected on individual faculty position, salary, and gender within the colleges of business at the specified universities. For each university, a statistical analysis was run on the overall data of both sexes to determine the mean salary, upper control limits (UCL), and lower control limits (LCL) of the salaries in the data set (for both males and females inclusively). In calculating this information, a statistical analysis can then be performed on male and female specific salaries to be compared to the overall faculty statistical analysis. Table 2 demonstrates the statistical analysis of all faculty members in the respective colleges of business.

Table 2: Total COB Faculty Statistical Analysis  
Total COB Faculty Statistical Analysis

Total COB Faculty Statistical Analysis			
	LCL (25%)	Mean	UCL (75%)
University of North Texas	58,485.25	97,163.06	135,840.87
University of Texas at Arlington	64,980.59	108,623.00	152,265.41
Texas Tech University	45,585.19	114,095.75	182,606.30

From the data set, a composite average salary of \$106,627 with a mean standard deviation of +/- \$50,276 is calculated among the three universities examined. The average UCL of the overall data collected is \$158,971, while the average LCL of the data collected is \$58,417. This implies that across the universities in the study, within one standard deviation from the mean, 68% of faculty members lie within the bounded limits of a salary of \$58,417 to \$158,971. This is a fairly wide distribution. A contributing factor to the wide distribution is the range between salaries of the positions held within the colleges of business. For example, a part-time lecturer could have an income of <\$60,000, while a full-time professor maintains an annual salary over

<sup>31</sup> Aneshensel, C. S. (2013). *Theory-based data analysis for the social sciences*. Sage Publications.

<sup>32</sup> National Center for Education Statistics (NCES) Home Page, part of the U.S. Department of Education. Retrieved from <https://nces.ed.gov/>.

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six figures. With an understanding of the overall salary distribution across the colleges of business at the respective universities, data was divided into male and female salaries for each of the universities in attempts to derive a statistical analysis that is specific to gender. Table 3 demonstrates the findings of this analysis.

Table 3: COB Gender Salaries- Statistical Analysis

COB Gender Salaries- Statistical Analysis			
University of North Texas			
	LCL (25%)	Mean	UCL (75%)
Female	57,356.39	126,774.36	146,105.83
Male	64566.86	142,077.00	161,362.57
University of Texas at Arlington			
Female	44,723.77	94,149.02	143,574.27
Male	43,342.77	109,102.20	174,861.63
Texas Tech University			
Female	47,421.22	108,189.37	168,957.52
Male	66,716.54	119,910.41	173,104.28

Though the means of female salaries at two of the universities fall in the left-most half of the average normal distribution of the total faculty analysis, and the female salaries average a lower rate than male salaries for all three universities, a conclusive statement regarding the strength of the influence of gender on salary cannot yet be determined. This is due to the need to account for the variety of positions held by faculty members as well as the disproportions among gender representation.

In attempts to statistically determine a more precise reasoning surrounding the strength of a correlated relationship between gender and salary, a two sample means z-test at a 95% confidence interval was performed. This test seeks to either reject or fail to reject a null hypothesis. If, in the analysis, the z value is less than the z critical value, we fail to reject the null hypothesis. In this study, the null hypothesis (to either be rejected or failed to be rejected) states that male salaries are *not always* greater than female salaries. The alternative hypothesis states that male salaries can *always* be assumed to be greater than female salaries. The following tables display the results of the analysis for each of the universities.

Table 4: Texas Tech University

Texas Tech University		
z-Test: Two Sample for Means		
	Male	Female
Mean	158910.411	148189.367
Hypothesized Mean Difference	0	
<b>z</b>	<b>0.65183023</b>	
P(Z<=z) one-tail	0.25725535	
<b>z Critical one-tail</b>	<b>1.64485363</b>	
P(Z<=z) two-tail	0.5145107	
<b>z Critical two-tail</b>	<b>1.95996398</b>	

Table 5: University of Texas at Arlington

University of Texas at Arlington		
z-Test: Two Sample for Means		
	Male	Female
Mean	99984.7326	87422.4468
Hypothesized Mean Difference	0	
<b>z</b>	<b>1.24228007</b>	
P(Z<=z) one-tail	0.10706662	
<b>z Critical one-tail</b>	<b>1.64485363</b>	
P(Z<=z) two-tail	0.21413325	
<b>z Critical two-tail</b>	<b>1.95996398</b>	

Table 6: University of North Texas

University of North Texas		
z-Test: Two Sample for Means		
	Male	Female
Mean	142077.005	126774.359
Hypothesized Mean Difference	0	
<b>z</b>	<b>1.61304421</b>	
P(Z<=z) one-tail	0.0349125	
<b>z Critical one-tail</b>	<b>1.84485363</b>	
P(Z<=z) two-tail	0.069825	
<b>z Critical two-tail</b>	<b>1.95996398</b>	

As seen from each of the analyses presented above, the z critical value is greater than the z-value at all three universities; therefore, we fail to reject the null hypothesis, and we arguably conclude that male salaries are *not always* greater than female salaries at these universities.

Though the z-test attempts to understand the relationship between gender and salary, it does not take into account the influence of factors such as the position a faculty member holds in the college of business, their total publications, prior experience, or years served at the current university. Working within the limits of resources in the data set, this study will attempt to account for the factor of positions held by faculty members as an influence on the conclusion reached in the z-test. To assure that department position is taken into account in the analysis, salaries have been further sorted into faculty positions by gender within the colleges of business for evaluation through a two-sample t-test with unequal variances. Data on faculty positions at Texas

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Tech University is not accounted for in the t-test, as this resource is not publicly published. A t-test with gender and faculty position as independent variables determining salary is conducted for the other two universities below.

Table 7: University of North Texas

University of North Texas	
t-Test: Two-Sample Assuming Unequal Variances	
Degrees of freedom	132
<b>t Stat</b>	<b>1.2140273</b>
P(T<=t) one-tail	0.11782499
<b>t Critical one-tail</b>	<b>1.7056179</b>
P(T<=t) two-tail	0.23564998
<b>t Critical two-tail</b>	<b>2.05552944</b>

Table 8: University of Texas at Arlington

University of Texas at Arlington	
t-Test: Two-Sample Assuming Unequal Variances	
Degrees of Freedom	129
<b>t Stat</b>	<b>1.53344934</b>
P(T<=t) one-tail	0.00127602
<b>t Critical one-tail</b>	<b>1.73960673</b>
P(T<=t) two-tail	0.00255205
<b>t Critical two-tail</b>	<b>2.10981558</b>

In the conducted t-tests, the t statistic is less than the t critical value, so we fail to reject the null hypothesis that position held in the college of business of a faculty member of a specific gender is *not always* a statistical determinant of salary.

The data analysis concerning the relationship between the gender of faculty members and compensation also offers insight into the relationship between gender and representation. The relationship between gender and representation is of relevance as it too is a potential factor of influence on the conclusions made in the statistical analysis previously performed. The percentage makeup of the sexes in accordance with the colleges of business of the investigated universities was researched and is presented in the following bar charts. In observance of the College of Business at the University of North Texas, females make up 40.97% of the 134 College of Business faculty members researched, while males make up 59.03% of this population. A fairly similar observation has been seen through researching the faculty in the College of Business at the University of Texas at Arlington. This university ratio includes a 35.32% female representation and a 64.66% male

Table 9: UNT COB Gender Rep

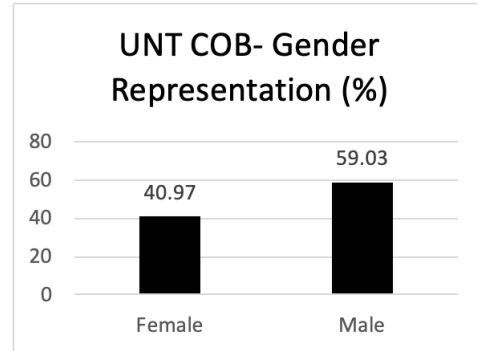


Table 10: UTA COB Gender Rep

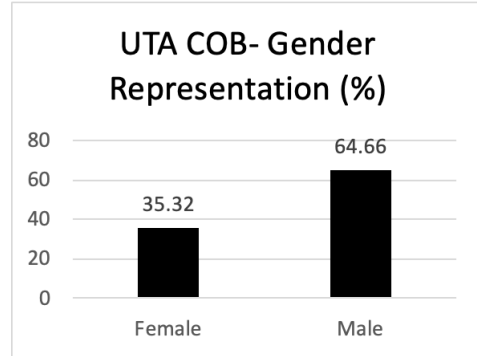
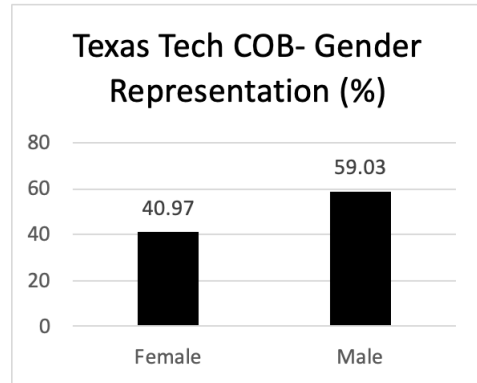


Table 11: Texas Tech COB Gender Rep



representation out of the 131 researched faculty members. Lastly, the most widespread ratio observed regarding gender representation in the College of Business is Texas Tech University, maintaining 32.04% female representation and 67.96% male representation of the total 118 faculty members researched. Through an overall observation of the female to male representation in Texas public

colleges of business, representation of females to males is arguably maintaining an approximate 2:3 ratio.

### Research Findings & Conclusion

The findings of the statistical analysis performed suggest that male salaries are *not always* greater than female salaries. This implies that the analysis could not determine a statistical correlation between gender and salary. The analysis also explains that the study fails to reject the null hypothesis that position held in the college of business of a faculty member of a specific gender is a statistical determinant of salary. Despite these findings, it is impossible to ignore the fact that female salaries average a lower rate than male salaries, and females are underrepresented in college of business faculty positions by an approximate 2:3 ratio across the three universities. If it is not statistically proven in this study that the gender of an individual determines their salary, the question is raised as to what contributors have caused the average female salary to be lower than males and led to female underrepresentation in these universities. Potential reasons that the null hypothesis in both of the statistical analyses resulted in a “failure to reject” test score include the historical sex typification of education, the history of gender roles, and the idea that colleges of business may display progressive hiring practices as compensation experts abound in this field.

A 2018 Stanford study on the occupational segregation in higher education across the nation states that “among millennials, a college-educated woman who works 40 hours a week and has average years of experience has a predicted hourly wage that is \$2.74 less (about 7.4%) than a man with similar attributes.”<sup>33</sup> On average, this aggregates to women making nearly \$5,700 less per year, as compared to men with similar attributes. Taking into account the positions held by faculty members of a respective gender in higher education, the Stanford study further states that “this gap decreases to \$1.98 after adjusting for occupation,” implying that occupations

<sup>33</sup> Weeden, K. A. (2018, May 1). Occupational segregation. *Stanford Center on Policy and Inequality*. <https://inequality.stanford.edu/publications/media/details/state-union-2018-occupational-segregation-dafna-gelb-giser>.

explain about 25 percent of the gender gap.<sup>34</sup> This study suggests that a greater amount of males, rather than females, tend to hold higher positions within the business industry, resulting in higher wage rates for a largely represented male population. Though this could be a large contributor to the disparities observed in average compensation of males compared to females, it does not explain the underrepresentation of females in higher education faculty.

According to Hargens and Long (2002), women obtained nearly 62% of baccalaureate degrees, as well as 45% of doctoral degrees in 2017.<sup>35</sup> Specifically, of these doctoral degrees, for those focused in education, women represented 69.4% of the degree recipients (for a ratio of 226.8 females per 100 males).<sup>36</sup> Of master’s degrees in education, women accounted for 76.3% (a ratio of 321.9 females per 100 males) of education degrees.<sup>37</sup> It is clear that women are maintaining a prominent student representation in higher education, dominating in representation of education majors by 69%+, graduating with prestigious degrees, and yet are still falling short of the representation and compensation in higher education faculty positions. What is it that is deterring qualified women from obtaining the high-paid positions they are eligible for? The 2017 report from the Council of Graduate Schools further notes that women are more inclined to assume they are not skilled enough to get into the top programs or that they will ultimately be unsuccessful in those programs.<sup>38</sup> It also may be the case that women who consider or visit these programs find the environment within the program itself unfriendly or unsupportive.<sup>39</sup> This research arguably calls for an investigation of gender disparities in the business industry at large, hiring

<sup>34</sup> Ibid.

<sup>35</sup> Hargens, L. L., & Long, J. S. (2002). Demographic inertia and women’s representation among faculty in higher education. *The Journal of Higher Education*, 73(4), 494-517.

<sup>36</sup> Ibid.

<sup>37</sup> The Council of Graduate Schools. 2017 reports. <https://cgsnet.org/2017-reports>.

<sup>38</sup> The Council of Graduate Schools. 2017 reports. <https://cgsnet.org/2017-reports>.

<sup>39</sup> Ibid.



processes in higher education, confidence levels of females compared to males, and an understanding of the transition from receiving a degree to obtaining a full-time position.

As this study focuses on faculty in the college of business, it is acceptable to consider the gender disparities in the business industry at large. The gender disparities in CEO salaries are the largest pay gaps in the industry. Of the Fortune 500 list in 2019, only 24 of the 500 CEOs are female.<sup>40</sup> This number is 25% less than the record-breaking 32 female CEOs on the list in 1995. In relation to the average worker in the United States, a CEO makes 278 times the salary.<sup>41</sup> With females accounting for less than 5% of some of the highest paid positions in the world by a multiple of 278, the gender gap across the industry at large is not surprising. As Hargens and Long's (2002) study states, it is possible that majority of females in the business industry feel unsupported, view the environment as unfriendly, simply do not have the confidence to ask for a raise or a promotion, or do not have the confidence to even apply for a high position.<sup>42</sup> According to Kim Elsesser, "women's reluctance to negotiate for higher salaries has long been considered a major factor in the gender pay gap."<sup>43</sup> Women are less likely to ask for a raise, become persistent about a promotion, or negotiate position/salary in an interview.<sup>44</sup> Additionally, Sax's (2008) self-survey on the personality of college

students states that 13.9% more males than females believed they could be successful if they owned their own business.<sup>45</sup> This survey also states that 78.1% of males rate themselves as having "above average" intellectual self-confidence compared to only 59% of females. Taking into account the history of women in education, the historical barriers to opportunities obtainable for women entering the workforce, the disparities in confidence and personality among genders, and the current underrepresentation and under-compensation of females in the industry, it is understandable that women entering the workforce may be at a disadvantage. The Council of Graduate Schools Organization states that "gender segregation is still so extreme that it will take another 125 birth cohorts to reach full integration (if one projects out the pace of change observed between the oldest and youngest millennials)."<sup>46</sup> As a conclusion to this study, suggestions for attempts at closing the gender gap are presented as well as directions for further research.

In attempts to close the gender gap in higher education, this study raises four propositions. First, organizations should reevaluate recruiting practices, as current statistics demonstrate a disparity in male-to-female representation. Potentially opening recruitment to new demographic areas could increase the number of qualified females that take on leadership roles and further balance the average gender pay rates. As the leadership gap widens for women as they advance further in their career, this re-direction of recruitment strategies could influence more females to feel less inclined to take on sex-typified jobs and more inclined to take a risk by applying for male-dominated or leadership roles.<sup>47</sup> Second, organizations should put forth efforts to create an environment that is comfortable and inviting to individuals of all backgrounds. The

<sup>40</sup> Mejia, Z. (2018, May 21). Just 24 female CEOs lead the companies on the 2018 Fortune 500-fewer than last year. *CNBC*. <https://www.cnbc.com/2018/05/21/2018s-fortune-500-companies-have-just-24-female-ceos.html>

<sup>41</sup> Cox, J. (2019, August 16). CEOs see pay grow 1,000% in the last 40 years, now make 278 times the average worker. *CNBC*. <https://www.cnbc.com/2019/08/16/ceos-see-pay-grow-1000percent-and-now-make-278-times-the-average-worker.html>

<sup>42</sup> Hargens, L. L., & Long, J. S. (2002). Demographic inertia and women's representation among faculty in higher education. *The Journal of Higher Education*, 73(4), 494-517.

<sup>43</sup> Elsesser, K. (2016, September 8). Research stating "women ask for pay raises as much as men" is misleading. *Forbes*. <https://www.forbes.com/sites/kimelsesser/2016/09/07/research-stating-women-ask-for-pay-raises-as-much-as-men-is-just-wrong/#299003093983>

<sup>44</sup> Ibid.

<sup>45</sup> Sax, L. J. (2008). *The gender gap in college: Maximizing the developmental potential of women and men*. Jossey-Bass.

<sup>46</sup> The Council of Graduate Schools. 2017 reports. <https://cgsnet.org/2017-reports>.

<sup>47</sup> Tarr, T. (2018, April 6). How these two things could close the gender gap permanently. *Forbes*. <https://www.forbes.com/sites/tanyatarr/2018/04/05/how-these-two-things-could-close-the-gender-gap-permanently/#33415b67bf02>.

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previously mentioned re-evaluation of recruitment strategies could be a large contributor to this goal, as it increases the diversity of representation. Another contributor to this idea could be upholding affirmative action in hopes of creating a tolerant community that provides an equal playing field for a greater number of individuals. Though debate exists around the arguments for and against affirmative action, the idea of targeting an underrepresented or under-compensated range of qualified prospects could result in a significant effect on the identified disparities. Third, schools and universities should implement programming to help women achieve their goals in any industry. After reaching an understanding of the differences in confidence levels amongst young females compared to males, it is necessary to attempt to advance female confidence early in the system. In raising personal expectations, females can raise workplace, and further, societal expectations for women. Fourth, potentially requiring the transparency of salaries of an organization could have positive ethical impacts. This would require government assistance to prevent organizations from fearing retaliation, but it could encourage organizations to place a large focus on the equality of their compensation and representation.

It is necessary to acknowledge the potential limitations of this study. First, only three out of the 5,300+ public universities in the United States are accounted for in the research conducted; therefore, my findings cannot speak for the industry at large. Further, the three universities selected are all located in Texas, where the political values and economic conditions may differ from other parts of the country. Second, this study is limited to R1 institutions, potentially resulting in all data to be collected from some of the most advanced institutions in the country (excluding liberal arts colleges). Third, all data collected in this study relies on the information published by the selected universities through the National Center for Education Statics (NCES), resulting in a variety of presented formats, samples of data, and selective information (in favor of the universities) shared by the university publishers. In attempts to overcome the stated limitations, institutions have been selected with variability in size and location, and data is gathered from university policies, the U.S. Census Bureau, NCES, *The Texas Tribune*, and several works on the history of women

in higher education, gender gaps in college, and data analyses in the social sciences.

This study concludes with directions for further research. To increase the reliability of this study as well as to provide a national analysis, further research could potentially investigate and analyze other universities across the United States. This research could also seek to investigate universities of larger population. In doing so, future research could account for diverse political and economic factors outside of the state of Texas. Future research could also attempt to take into account the extraneous variables previously specified to potentially have an effect on the dependent variable (salary). During the statistical analysis process, inquiries regarding the disparity within both gender and ethnic representation were additionally raised. Though this was acknowledged in the study, further investigation of hiring processes could be discovered to be a potential contributor to the compensation and representation gaps. Lastly, future research should seek to understand ways to empower females during the transition process from being a student to obtaining a full-time leadership position.

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