

Analysis of Gender Parity at Workplaces in Non-Urban Parts of India.

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Data Analytics

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Analysis of Gender Parity at workplaces in Non-Urban Parts of India

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Abstract

Gender-related issues and concerns have caught the attention of policy makers and social scientists in the post-modern era, which followed World War II. Men and women both have gender difficulties, yet it is mostly women who experience gender inequality. Since then, gender disparity has been a popular area of study in sociology. The goal of the study is to determine whether or not gender imbalance exists at workplaces in the country's non-urban areas. A thorough study was carried out among working professionals in one of Maharashtra's non-urban districts. The study findings revealed that women hold executive positions and are treated equally, but Indian society's beliefs, as well as family responsibilities and expectations, hinder women's professional success. On the dataset, several machine learning techniques were used to forecast wages and categorize the gender. The findings demonstrate that today's conditions are far superior to those of decades ago. The article discusses the issues that women face in their careers while having equal chances, as well as a male viewpoint on gender disparity.

1 Introduction

Gender inequality is described as any differential in treatment or position between women in social, cultural, and legal norms and conventions. Gender disparities obstruct gender parity by restricting or reducing women's access to opportunities and decision-making possibilities (Dabla-Norris and Kochhar; 2019). For Indian society, the term 'patrifocality' is favored over 'patriarchy' because, unlike the structure represented by patriarchy, it is not a monolithic system in which males predominate in all settings and social contexts. Rather, 'patrifocality' is unique to a highly agricultural social setting. It promotes lineage purity through the management of marriage and female sex-uality, and emphasizes the complicated link between the hierarchical family system and male domination. Strong patriarchal norms and ideology have been major impediments to women's education in India. (Gupta and Sharma; 2003)

The nineteenth-century Indian social reformers supported education for women, but they believed that women should be educated primarily to be better spouses and mothers. Since the country's independence in 1947, education has been viewed as a tool for modernization and equalizing opportunities for women. The Indian Constitution promises equality and social justice. Gender relations, however, remain generally uncontested due to the impact of tradition. Degrees in science and engineering are more prestigious and provide more work options. However, most families are less likely to invest family

resources in their girls' academic achievements than they are in their sons'. It is thought that the benefits of a daughter's education will accrue to her husband and his family after marriage.(Gupta and Sharma; 2003)

While males have typically earned power through their social positions in the workplace, women's power has traditionally come from the responsibilities they have at home. It has happened to be stated that women obtained social status in their life from the men, beginning with their dads and progressing to their husbands. This is because until recently, women's traditional role expectations were centered on marriage on motherhood, and their commitment to paid employment was considered as secondary to their other role commitments. Historically, women's social statuses were mostly determined by their families, and they were barred from positions of influence in the workplace. (Wolf and Fligstein; 1979)

However, as more women work throughout their lives, the conventional view of women's responsibilities is beginning to crumble. As a result, the social standing of the family became dependent on women's employment. Likewise, women are more prone to lead their own families and rely on their own professional activities to get power and money. In short, women's situations have altered, and many now rely on their own professional activities to achieve authority and money. In short, women's conditions have altered, and many now rely on their own professional activities as a key method for gaining societal power. In spite of these improvements, women are still more likely than males to hold positions of influence in the workplace.(Wolf and Fligstein; 1979)

According to a study done in the late 1990s by the Michigan Survey Research Center, the mean annual salary gap between men and women in late 1969 was approximately \$5000. According to research by McNulty, earnings for men and women performing the same tasks inside the same company were nearly equal. The biggest apparent income disparity was caused by a higher percentage of women working in traditionally lower paying jobs. There must be fewer obstacles for women to enter the workforce in higher earning positions if the income of women is to increase relative to that of males.(Cohen; 1971)

Despite the fact that the number of women entering the labor force has steadily increased over the last half century, and significant progress has been made towards economic equality with men, statistics show that women continue to lag behind men in career advancement, levels of compensation, and achieved status. According to the literature, women are hampered in their efforts to achieve career advancement and the associated benefits because they lack access to social capital, a valuable organizational commodity and source of the knowledge, resources, and networks necessary for career development and maturation.(Featherman and Hauser; 1976) According to the World Economic Forum's latest research, the Gender Gap Report from 2016, the global gender difference in education, economic opportunities, and politics has decreased by over 4 % over the preceding decade, while the economic gap has decreased by 3%. Anticipating from this track, the research concludes that closing the economic gap will take another 118 years, or until 2133. For instance, women are more likely than men to hold non-management positions, work part-time, and earn low wages.(Verniers and Vala; 2018)

There are now significantly more women working in the United Kingdom since the 1970s. This rise is directly related to the shift to the service sector, as well as higher levels of education and training. Furthermore, a spate of laws, including the Equal Pay Act of 1970, the Sex Discrimination Act of 1974, and the Employment Protection Act of 1982, pushed women to start working during the 1970s. However, there appears to be a

disparity in the number and quality of jobs available to women. The International Labour Organization (ILO) defines quality labor as work that pays well and gives possibilities for advancement and development. Many of the employment created in the service sector, which are primarily held by women, are low-wage, low-prospect 'pink-collar' jobs that fail to meet many of the ILO's 'decent work' standards. (Dalingwater; 2018)

Over forty years ago, a lot of scholars began to appreciate (some might argue rather belatedly) the key importance of organizational practices and decision making in preserving or changing significant social patterns of stratification (Baron and Bielby; 1980). Since then, numerous scholars have focused on organizational processes such as job assignment, hiring, training, promotion, performance evaluation, and compensation. (Baron and Bielby; 1980) found that in federal agencies, women were far more likely than men to work in jobs with relatively short career ladders, restricting women's possibilities for progress. Using the amount of the wage disparity between men and women teachers as an organizational feature, (Tolbert; 1986) discovered that larger and wealthier schools and universities had much more gender gaps in wages of the faculty. Also, a study examines the causes of disparity in the California civil service (Baron and Bielby; 1980) found that jobs with a high mix of minorities and women received a very low starting salary, especially when the occupations were distinctive and old.

Living totally offline in recent years has resembled living in a bygone era, as communication and technology have unquestionably become fundamental components of most people's everyday lives. Businesses and organizations had to quickly reinvent themselves to survive as governments around the world-imposed lockdowns and movement restrictions to combat COVID-19 infections. This had exacerbated social, gender, and racial inequalities while also putting a strain on the global economy, public health, and policy-making. It is currently anticipated that achieving gender equality will take 135.6 years, a generational jump backward from the 99.5 years projected in 2020. (Younger and Warrington; 2007)

Economic research on gender and gender equality has a long history. India has a patriarchal family system, which has influenced women's professional careers. Seven decades of freedom, however, have resulted in tremendous gains in women's educational attainment and professional career. Changes in social and economic realities compelled women to work regardless of their social rank or faith as the country expanded. xThe history of gender equality and contemporary events have shown that research is required to determine the current state of gender parity in the workplace. Although gender equality is one of the most popular themes among sociological academics, the employment environment in rural areas is rarely the subject of such investigations. This brings up the innovative aspect of the subject, which is to show the current state of affairs among working teachers in rural primary and secondary schools in a particular region of the country.

The history of gender equality and the present facts has proven that research to find the current situation concerning gender parity in workplaces is necessary. Despite the fact that the topic of gender equality issue is one of the most popular topics within sociological researchers, situation in workplaces at rural areas is rarely an object of such studies. This contributes to the topic's originality, with the goal of revealing the present condition amongst the working professionals of primary and secondary schools in rural areas of certain parts of the country. The goal of the study is to look into the administrative staff's existing makeup and attitudes toward gender equality in India's rural public schools. The purpose of the study is to determine whether vertical segregation still exists in the workplace and whether gender discrimination has an impact on how quickly someone's

career advances. The research empathizes with the primary concern that the majority of people have raised: "Equal opportunities and treatment are offered at workplaces but society's and family's expectations are still preventing professional progress."

2 Related Work

Traditionally, women's power has come from their responsibilities in the home, whereas males have gained authority through their positions in the workplace. The authors of the study conducted an empirical analysis on data pertaining to 3,359 men and 2254 women who were employed in the civilian labor force during the survey week in 1975 but were not self-employed. The employment restriction was the main cause of female sample attrition. They determined how well the three elements listed below can explain for the gender gap in authority-related aspects: (1) Qualifications of women, (2) Attitudes and practices of employers (3) Attitudes and practices of women. The authors discovered that, although women's qualifications can account for a large percentage of the gender disparity in aspects of authority, they are not the fundamental cause of women's exclusion from positions of leadership. Additionally, the authors demonstrated compelling data stating that the attitudes and actions of the women themselves are significantly fewer major contributors. Even though the authors couldn't uniquely identify that the proportion of authority gap was due to the attitude and practices of the employees, it was realized that this factor is very important in restriction of females in position of authority. (Wolf and Fligstein; 1979)

The research conducted by (Cohen; 1971) examined five hypothesis- Wage levels in the workplace, job selection and working conditions, fringe benefits, wage discrimination, and women's qualifications and productivity, which explained the difference wage disparities between men and women. The analysis was conducted on the data from survey in 1969 of working conditions in American workers. In 1969, researchers discovered a \$5,000 wage gap between full-time working males and women. Workers who were not professionals, aged 22 to 64, had stable jobs, worked the same number of hours, and the difference was only \$2,500. Approximately 42% of men and 27% of women said their occupations exposed them to physical hazards or hazardous environments, respectively. The concentration of women in lower paying jobs was the main cause of the variation in average income between men and women.

The researchers published their examination of gender variations in large firm employee compensation attainment processes that are specific to the employer. Although the two main ideas about inequality identified discrimination and the primary driver of pay disparities, they identified various structural sources of discrimination throughout the exchanging area for employers and employees. According to the wage discrimination hypothesis, employers' pay policies directly contribute to women's economic disadvantage since they provide them "unequal remuneration for equal effort." According to the employment segregation or crowding theory, inequality originates from differences in how jobs and promotions are distributed across companies. As a result, segregation along sexual lines occurs, with women being consigned to positions with lower pay. The results demonstrated that disparity is a result of salary exclusion as well as sexual exclusion in the employment and rank structures of the organization, but that the latter is more important. (Halaby; 1979)

The gender composition of occupations is less important in understanding the gender

disparity in job autonomy than the authority position at work. The authors of this study looked into the effects of gender, occupational segregation, and authority position on several types of job autonomy. The authors conducted an empirical study inspired by theoretical concerns about the role of occupational features and authority position in explaining the gender disparity in job autonomy. After controlling for numerous person and employment-related factors, the findings of the Ordinary Least Squares regression revealed that authority position, but not female-dominated occupation, explains a major percentage of the gender disparity in job autonomy. Also, logistic regressions revealed that after controlling for all other characteristics in the model, no gender differences in the likelihood of having any of the five components of occupational autonomy remained. (Adler; 1993)

Finding of the survey conducted by (Elliott and Smith; 2004) confirm ideas concerns the varied access that white males and minorities have to authority in the workplace. Specific study showed that all groups experience rising compared to white men, inequality at higher levels of power exists, but only black women seem to be directly affected by discrimination in this way. Additional investigation reveals that network support is more of an indirect cause, rather than this form of discrimination. Lastly, analysis demonstrates that homosocial reproduction is the primary mechanism by which most groups come into power, but the capacity for homosocial reproduction—at which white males excel—is what distinguishes one group from another. These findings indicate that while minorities and women have less likelihood of obtaining higher levels of workplace influence than white men, the causes for this disadvantage varied amongst groups and will likely necessitate diverse solutions.

The results of a newspaper frame analysis commentary about women from November 2000 to November 2002, *The National Post* and *The Globe and Mail* published articles on workplace inequality. are presented in this paper. Newspaper stories were examined in terms of how gender frames and shapes them as a social organization. Women's experiences with unequal employment were discovered to be portrayed as an output of the failure to juggle between work and home duties, fit in and their natural choices. Further examination revealed that these facts reflect a dominating gender ideology of male breadwinner and female caretaker, suggesting that views about gender are influenced within the discussion of the news.(Gazso; 2004)

To reach its full potential, the digital economy of the twenty-first century requires unique skills that women possess. Even though women make up half of the workforce in industrialized nations, they are still underrepresented in senior positions where their perspectives might be valuable. Gender inequality in organizations continues to produce working conditions in which women are unable to contribute differently. The authors concentrated on research and consulting projects that involved financial institutions that demonstrated the polarized gender dynamics which are not easy to change. The recent financial crisis and present economic hardships highlight our culture's one-sidedness, which is harmful to both men and women. Using current and contemporary psychoanalytic perspectives, the role of culture on gender psychology is stressed. According to the author, certain elements of each gender are idealized, while others are split off and projected based on cultural prescriptions, resulting in a stasis of forced division. Resulting to the fact that, women struggle finding ways to engage while men control the organizations. Women voices and viewpoints distinct when they concentrate on blending in. The author argued for the significance of assisting women in making greater contributions to employment and the environment in which we live. Half of all knowledge would be lost

if women did not make an equal contribution. (Reciniello; 2011)

This study looked into the importance of social income in the development of workplace management, specifically how gender affects the creation of social capital and how its rewards are distributed. To investigate the significance of social capital in organizational behavior and its relationship with a person 's gender, relevant scholarly literature was studied. Even though the proportion of female students, the labor force has steadily grown over the last 50 years, and significant progress has been made toward economic equality with men, statistics show that women continue to lag men in career advancement, levels of compensation, and achieved status. The literature contended that women are hampered in their efforts to achieve career advancement and the associated benefits because they lack access to social capital , resources, and networks required for maturing and developing a career. (Timberlake; 2005)

This study sought to uncover the causes concerning the inequality faced by working women in Cyprus, explore potential impediments to women's advancement, and pinpoint organizational policies that support employees in striking a work-life balance. A voluntary, anonymous, and confidential questionnaire that was distributed to women in four distinct occupational levels was used to collect the data. Stereotypes, competing job and family responsibilities, lacking in female role models and lacking in confidence are just a few of the obstacles that have been found to be standing in their way of success. This study raised women's awareness of the obstacles to professional advancement and gender discrimination in the workplace. It emphasized the development of corporate initiatives that could aid women in growing and progressing their professions in addition to achieving work-life harmony, such as mentoring programs, refresher training, flexible work schedules, and on-site daycare. (Michailidis et al.; 2012)

(Stamarski and Son Hing; 2015)developed a human resources gender discrimination model that highlights the reciprocal nature of gender difference inside organizations. Differences in gender across organizational structures, practices, and policies, they argue, are the core reason for gender discrimination in HR-related practices and decision-making. Human resource policy, along with leadership, organizational environment, structure, strategy, and culture, were all discussed. The levels of among organizational decision-makers, there is sexism may also influence their likelihood of implementing sexist HR policies and/or making anti-women decisions. Organizational structures that discriminate, procedures, and behaviors that are institutionalized not just have a significant impact on procedures of HR, but it also plays a significant role in corporate socialization. Even though gender difference is portrayed as a self-reinforcing system that may be sustained, they identified substantial levers for eradicating prejudice.

This article assessed the performance of the South African Commercial Catering and Allied Workers Union's (SACCAWU) separatist approach for addressing the problem inequality based on gender. The union's intention to establish a "seperate area " inside the women's group was scrutinized. The data required for the study was gathered through an analysis of the SACCAWU's gender policy and materials (including discussions, workshops, and union- run programs). 22 male and female members from SACCAWU were interviewed regarding gender policy through semi- structured interviews and participant observation, disparities, and their own gendered practices. The data indicate that the rebel approach was very successful in the terms of enhancing women's self-esteem and developing leadership among the women in the union. Furthermore, the findings highlighted the obstacles that remain in the union, such as how patriarchy continues to impact how resources are allocated based on gender, and attitudes and behaviors create concerns

of gender inequality in the workplace. (Paxton et al.; 2006)

This paper evaluated and expanded on current research on inequality based on gender in the workplace. The author performed analysis and estimation about the female survivors of sexual assault by kind of offender, overall sexual harassment charges, occurrence and effects of sexual assault and harassment in the US, and total sexual harassment charges utilizing and reproducing information from the Washington Post, GEH, Graphiq, Raliance, Stop Street Harassment, U.S. Equal Employment Opportunity Commission, CAP, ABC News, and the Centers for Disease Control and Prevention. (Halaby; 1979)

The South African government is aware of the study's conclusions, according to the study's findings. of the concerns with gender inequality and employment discrimination. South Africa's majority of women still experience it despite the implementation of numerous legislative initiatives, plans, and regulations intended to reduce gender disparities and unlawful work discrimination. Women are underrepresented in senior management and leadership positions. Women are underrepresented in all four highest occupational levels (a professional level, senior management, top management, and professionally qualified), while males continue to be in charge. All legislation pertaining a thorough assessment of unfair discrimination between women and men is necessary.

Women have been battling for an equal treatment in society for many years. Although they now make up almost half of the workforce and statistically hold the majority of higher education degrees, they still make a lot less money. In 2015, there was a 16.3% gender pay disparity in Europe, with Estonia having the highest rate at 26.9%. (Zaleniene et al.; 2016)

A four-step analysis was conducted by the researchers. The first stage was to do an initial hierarchy regression analysis to determine the contributions of demographic factors, sexism, and myths about motherhood to hostility to work of a woman. The second phase involved conducting Confirmatory Factor Analyses to test the the proposed measuring model's construct validity. The final phase entailed putting the postulated mediation to the test. Finally, a trial of the predicted moderated mediations was performed. The study's purpose was to investigate the psychosocial factors that lead to the persistence of gender discrimination against working women. 51632 people from 18 different countries supplied data between the period of 1994 to 2012. The proposed mediation was supported by modeling with structural equations. Overall, the results provide insight on how parenting myths reinforce the gender hierarchy in nations where gender equality is gaining traction. (Verniers and Vala; 2018)

3 Methodology

The research methodology followed in the project is Knowledge Discovery of Database (KDD) which involved 9 steps as follows:

3.1 Understanding the dataset

The project's goal was to determine if gender parity existed in rural Indian workplaces. Information about employees from a small-town group of people was needed for the study. Raigad, previously Colaba, is a district in Maharashtra, India's Konkan region. The district was renamed from its previous name, Rairi, to Raigad in commemoration of the fort that served as the initial capital of the historic Maratha Empire. Early in the 1980s, the British assumed control of the ancient Colaba and created 30 government schools

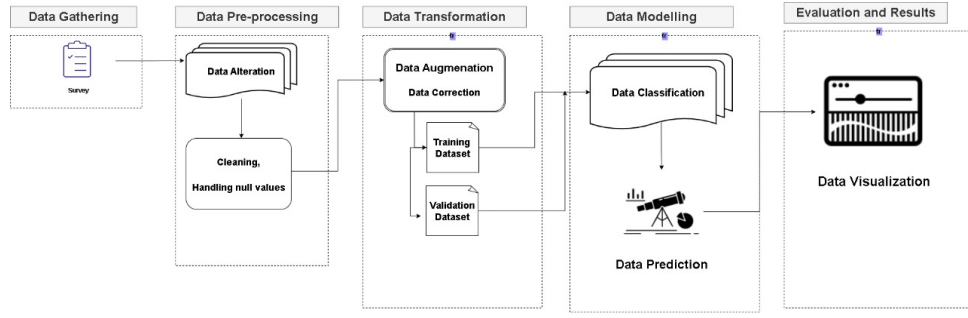


Figure 1: Research Methodology

in addition to four Anglo-Vernacular speaking schools. Today, a number of institutions and schools are managed by the Maharashtra state board. District Council Raigad, also known as the State Government-Zilla Parishad Raigad, is the district council in charge of the Raigad (Colaba) district in Maharashtra, India. Every District Council in the State is home to a network of elementary and secondary educational institutions. Information from workplaces and workers in non-urban regions was needed for the study. Due to the rich history of the region and the dearth of studies conducted in such rural areas, the District Council of Raigad’s schools were chosen as the study’s subject.

3.2 Data Selection

Variable	Description of Variables	Data Type
sex	Gender of the person	Object
Qualification	Qualification of the person	Object
Start Salary	Salary per month when the person started working	Integer
Promotion	Promotion if any in their entire service.	Object
Awards	Awards if any in their entire service	Object
Current Salary	Current salary per month	Float
Experienced Gender Equality?	Has the person experienced gender inequality?	Object
What inequality?	Details if they have experienced it	Object
Would you be in a different position if you were of opposite sex?	does the person agree if he/she would be in a different position if they were of opposite sex.	Object
Why do you think so?	Reason if they agree with the previous question.	Object
Rate your career satisfaction	Rate the career satisfaction	Integer
years of experience	years of experience	Integer

Figure 2: Dataset Description

The teacher’s current involvement was necessary to gather the data for the research.

A survey was conducted in order to get the data. The survey was a questionnaire, and it included questions about a person's gender, name, present position and function at work, qualification, date of joining, salary at that time, current salary, and whether or not they had ever experienced gender inequity during their whole career. A few topics, such as compensation and the challenges they faced because of gender issues, were left as optional. A second survey was done on the same group of individuals after the first survey and focused on a particular topic that was brought up by the majority of respondents to the first survey. The second study included only one question: Despite the fact that women are in positions of leadership and administration in the country, are society and family expectations still holding them back? The second question was an optional one that asked respondents how they related to this if they agreed on the first.

This survey was done online through the distribution of a Google form. A message detailing the study and cause for the survey, as well as the link to the form, was shared on the people's WhatsApp groups. Mr. Shivaji Yadav, the head of one of the subdivisions, was contacted and informed about the entire research. Mr. Yadav was quite helpful and supportive of the entire survey and study. He helped in communicating the information to his colleagues and motivating them to participate in the survey. The responses were not gathered from persons working in various organizations and professions; rather, the study was conducted in one specific area of the government workplace where employees have been working for many years. Their whole reaction revolved upon their time at that workplace. The questionnaire was the same for both genders. This is how the form was kept from being biased.

3.3 Data Preprocessing

A survey was used to obtain the information. The survey was carried out in Marathi, the regional language. There were around 100 submissions for the first survey and almost 60 for the second survey that matched the expectations. The first and most crucial thing that was done with the data was to translate everything from Marathi to English. The procedure of translating data into English was made easier by the fact that I am from the region of the nation and am proficient in the language. The majority of the conversion was done online utilizing an online tool ¹. Even after the conversion, a human double check was necessary, and adjustments were made where they were necessary. For instance, the program was unable to translate some Marathi terms since some people had typed them using the English alphabet. As an illustration, the word "Nahi," which means "no," is written using the English alphabet. Python was used to carry out a portion of the cleaning programmatically. There were no missing values or outliers that needed to be removed. Every piece of information was thought to be valuable for the study. The data was imported as a dataframe in Python after being translated by the online tool. Programmatically, the data underwent further alteration.

3.4 Data Transformation

Using python, the data was loaded as a dataframe after translating it into English. The Jupyter notebook was used to complete the programming. There were still a lot of adjustments and improvements needed even after manual editing and online translation. For the first dataset, there were 101 rows and 16 columns, and for the second, there were

¹www.onlinedoctranslator.com

58 rows and 2 columns in the initial data. The second dataset didn't require any change. The first dataset went through multiple data alterations.

Column names were renamed to shorten the length. Columns such as 'School Name', 'Educational Qualifications', 'Date included in the account', 'Starting Salary', 'Promotion (if any), position', 'Year of promotion', 'Have you experienced gender inequality in your workplace throughout your career?', 'Do you think you would be in a different position in your career right now if you were the opposite sex?', 'a scale of 1 to 10, how happy are you with your career?' were renamed to 'School', 'Qualification', 'DOJ', 'Start Salary', 'Promotion', 'Promotion Year', 'Experienced Gender Inequality?', 'Would you be in a different position if you were of opposite sex', 'Rate your career satisfaction'.

Words such as 'Feminine' and 'Masculine' were replaced by 'Female' and 'Male'. Unwanted column – 'timestamp' and 'Awards' were dropped. Multiple entries with the same meaning were found in the "Qualification" column, such as "BA, D.Ed." being recorded as "BADED," "BA Ded.," "B.A. DEd.," etc. All of these entries were collected in a single form. Many additional column values had the same issue, and it was resolved by programmatically bringing them all into one form. The column values of column 'Current Salary' and 'Start Salary' required cleaning and brought to one datatype. Null values of certain columns were replaced by 'not defined'. Null values of salary columns were replaced by mode values. A new column 'years of experience' was created using the column 'DOJ' (Date of Joining). One hot encoding technique was applied on the column in order to fit the dataset for application of models.

4 Design Specification and Implementation

After studying the final dataset, certain machine learning algorithms were applied to the dataset. Logistic regression with accuracy 0.4615, KNN classifier with accuracy 0.3846, Support Vector Mechanics Classifier with accuracy 0.4320, Kernel Support Vector Mechanics Classifier with accuracy 0.6153, Decision Tree Classifier with accuracy 0.3076 and Random Forest classifier with accuracy 0.4615 algorithms were obtained to the first dataset to classify the gender between male and female based on 'current salary', 'experience of gender inequality' 'years of experience'.

Logistic Regression	KNN	SVM	Kernel SVM	Decision Tree Classifier	Random Forest Classifier
0.4615	0.3846	0.4230	0.615	0.307	0.461

Figure 3: Results of the models implemented

Liner regression, polynomial regression, Multiple regression, Random Forest, SVR, Decision Tree regression algorithm were applied to predict the current salaries. The models were trained first on 1/3 of the dataset and then were applied to the test dataset.

Figure 5. is a plot of current salary by rate of career satisfaction separated by gender and whether they have faced gender inequality. It can be seen that even though the number of male and female faced gender inequality looks almost same.

Figure 6. shows that the average current salary of men is more than women

In the second survey a response of 39 women and 30 men was recorded out of which all the women and around 25 men agreed on the topic brought up by majority of people

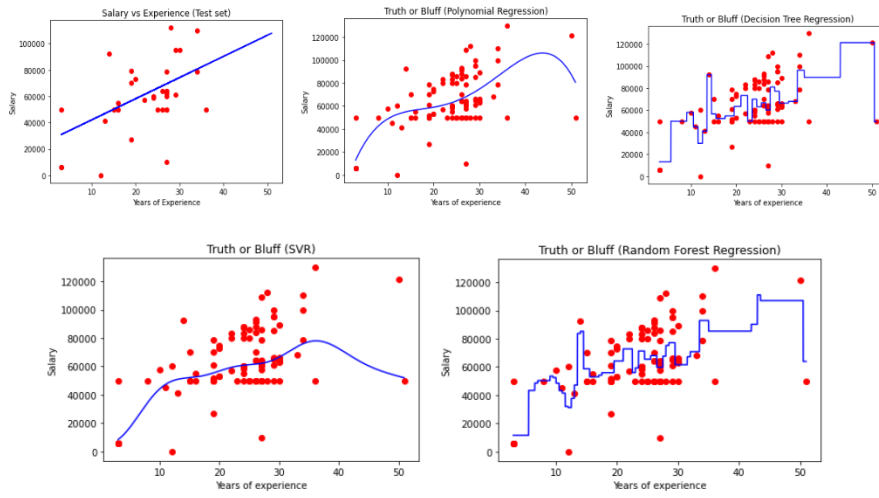


Figure 4: Plots for classification models

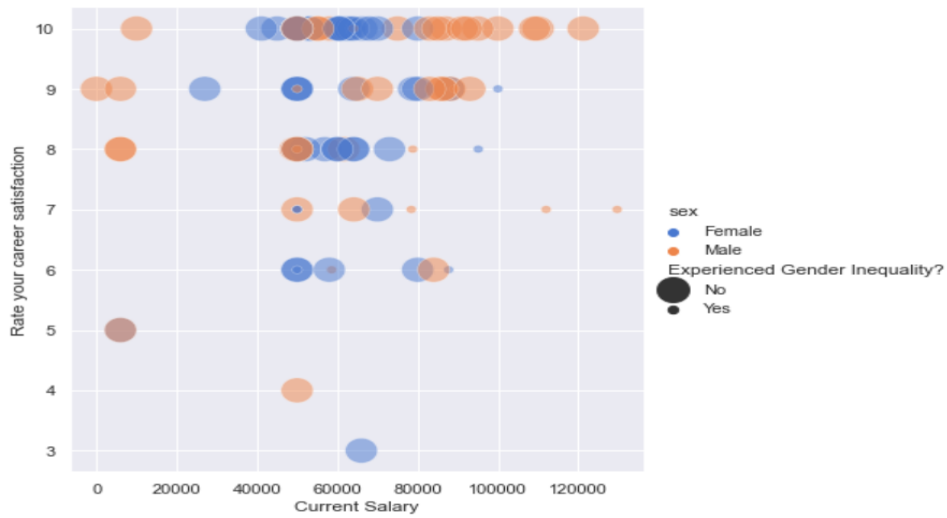


Figure 5: Data Visualization

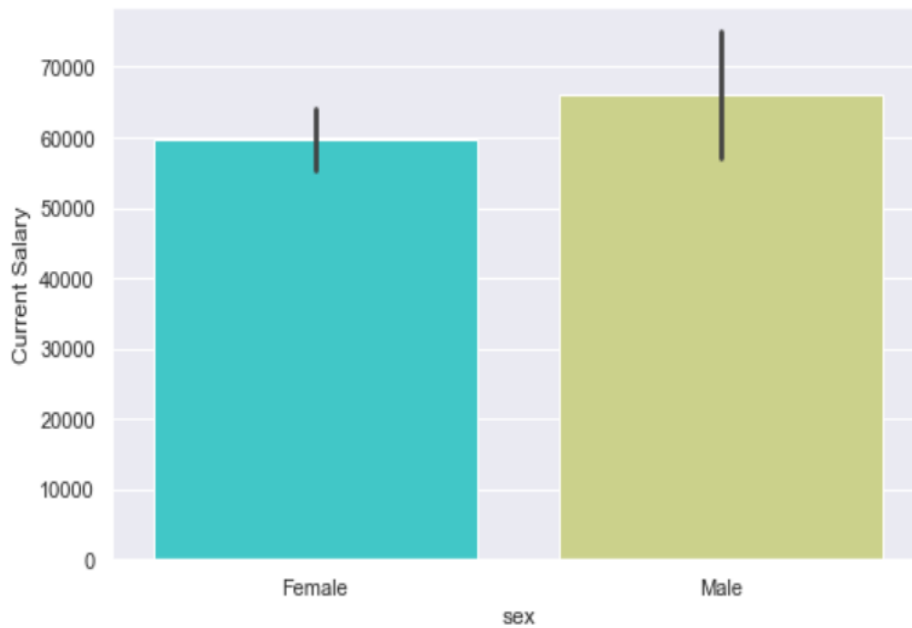


Figure 6: Data Visualization

in first survey which is- Despite the fact that women are in positions of leadership and administration in the country, are society and family expectations still holding them back?

5 Evaluation

5.1 Studying the dataset

The statistical description for the final dataset of the first survey was developed. There were no missing values in the final dataset. Figure 8

There is no autocorrelation between the variables as per the correlation matrix. According to the Pearson Correlation Coefficient, there is very little correlation between the variables. The strongest correlation is between 'Current Salary' and 'years of experience' I.e., 0.57. The lowest correlation is between 'start salary' and 'Current Salary'. Figure 11

The variables 'experience' and 'current salary' are normally distributed. The variable 'first salary' is left skewed and 'rate your career satisfaction' is left skewed. Figure 11

5.2 Application of machine learning algorithms

The model which were applied to classify the gender based on characteristics like current salary, experience of gender inequality, years of experience gave very low accuracies. Kernel SVM gave the highest accuracy of 0.615, which cannot be considered as a very acceptable score. Thus, it can be said that the factors doesn't affect the fact that what gender a person is. Experiencing gender inequality, the amount time a person has worked or their salary doesn't affect their gender.

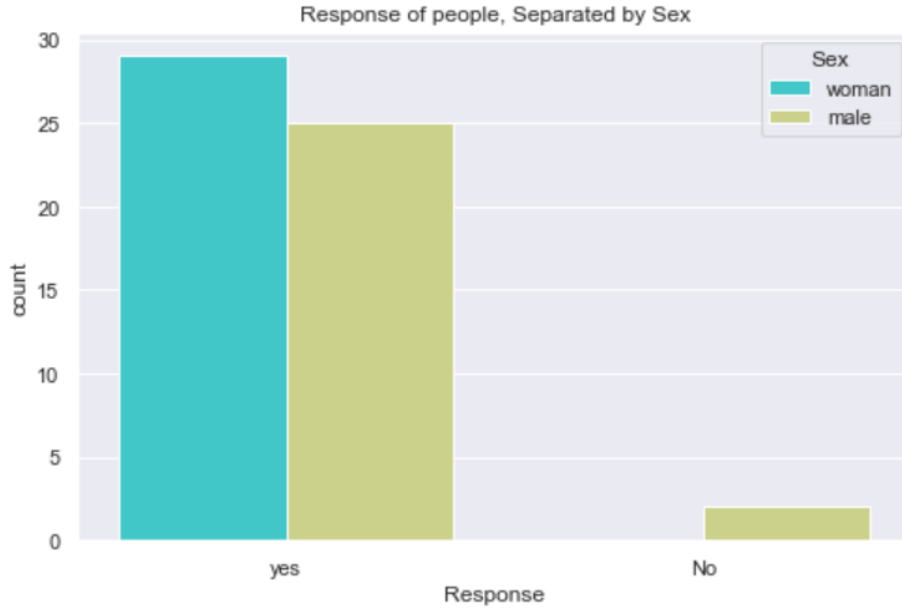


Figure 7: Data Visualization

```
df_data1.describe()
```

	Start Salary	Current Salary	Rate your career satisfaction	years of experience
count	101.000000	101.000000	101.000000	101.000000
mean	3181.029703	62778.049505	8.613861	23.594059
std	3506.579044	24561.056223	1.568249	8.420425
min	400.000000	0.000000	3.000000	3.000000
25%	1800.000000	50000.000000	8.000000	19.000000
50%	3000.000000	60400.000000	9.000000	26.000000
75%	3000.000000	80000.000000	10.000000	27.000000
max	28800.000000	129700.000000	10.000000	51.000000

Figure 8: Data Description

5.3 Results from the survey

5.3.1 Women have equal chances, but society's expectations limit them.

Women's status in the nation is very different now than it was a few decades ago. In the past, women were not allowed to hold positions of leadership. Following are the inputs of some men and women in the surveys conducted.

"Women still deal with family issues nowadays. Because, while receiving equal treatment at work, they do not receive it at home. Because she worries about whether society would accept her or not, she often feels guilty in society when she speaks out against injustice. Because of societal and familial inequity, women are left behind".

```

sex 0
Qualification 0
Start Salary 0
Promotion 0
Awards 0
Current Salary 0
Experienced Gender Inequality? 0
What inequality? 0
Would you be in a different position if you were of opposite sex 0
Why do you think so? 0
Rate your career satisfaction 0
years of experience 0
dtype: int64

```

Figure 9: No Missing values in final dataset

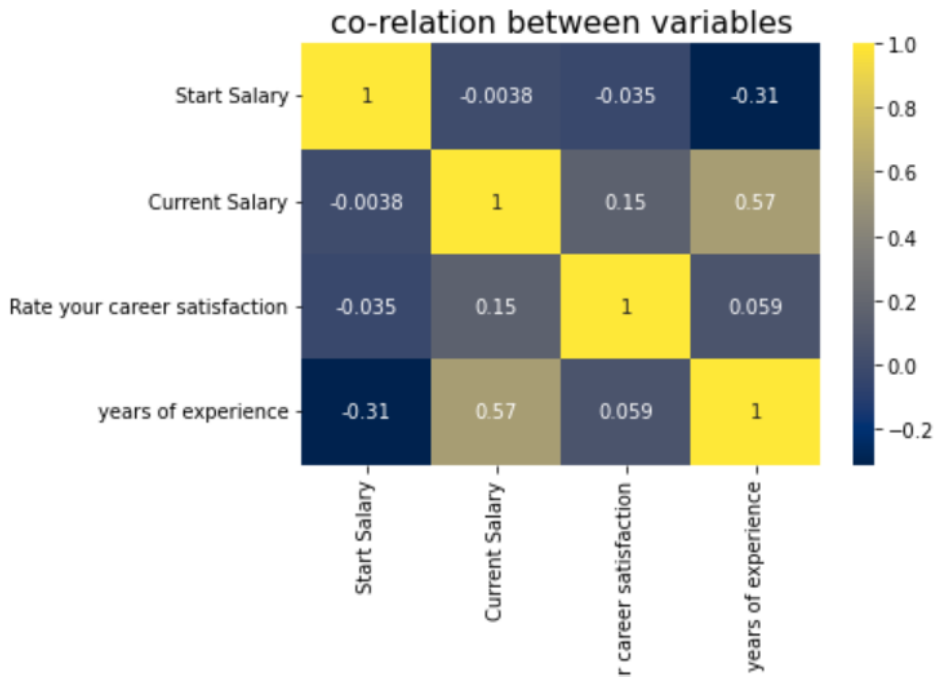


Figure 10: Correlation Matrix

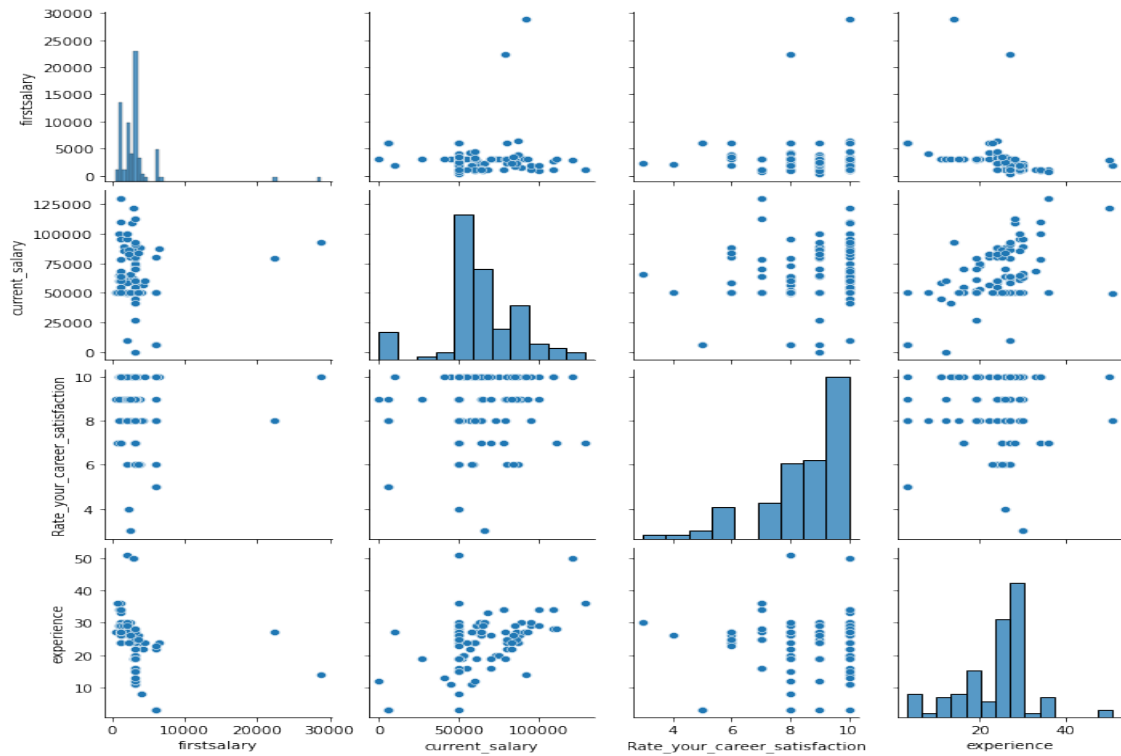


Figure 11: Pairplot

“Maintaining a work and a house is difficult for all women. Women’s independence from domestic duties cannot be reduced, even if we are working to advance the notion of gender equality. Women still do not have the same level of independence in society as they should. In reality, we shall witness a different sight behind the screen. Women should also endeavor to develop themselves by keeping their cultural history and traditions. The notion of modernity is only offered in full through talks and writings on the platform. Maintaining family health is important. Combine contemporary ideas with the virtues of the past”.

“A preschool child is likely to suffer if his or her mother works” and “All in all, family life suffers when the woman has a full-time job”

“Despite the fact that women have achieved equality in all spheres, efforts are being made to push them back into societal standards that only apply to women and do not apply to males. There should be equality in everything”.

“As a woman, there is a very little time to carry out the responsibilities of home, children, in-laws, relatives and neighbor to pursue a career”

“A woman has a great deal of responsibility, as the proverb goes, ”A learned mother leads the home ahead.” Because women have effectively carried out this role in the past, yet today’s increased expectations for women are a result of education”.

“Discrimination between men and women in the society should be eliminated. Women should be given equal respect and honor for their achievements and efficiency without giving them secondary treatment”.

“When I decided to concentrate on my job following the loss of my spouse, I came under fire from the public and even some of my own coworkers. Today, I elevated my school to a new level. Only if I had received a little bit more encouragement and gratitude

from others.”

“This is the actual circumstance. No matter how high a woman’s status, her hearth and children are still at risk. Social restrictions abound as well”.

“Women have a very limited amount of time to manage the duties of the house, children, in-laws, relatives, and neighbors while still pursuing a job”.

5.3.2 Despite equal compensation, women are offered concessions for difficult or dangerous labor.

According to (Kimmel; 2009), despite significant progress, these gains only constitute a partial triumph for women due to the remaining barrier to gender equality - men’s behaviors and attitudes. According to the author, ”changes among males indicate the next phase of the women’s equality movement - that change among men is critical if women are to attain full equality.” Men must recognize that gender equality is in their best interests as men.” Following are some inputs from men about their views on inequality. “Men are prepared to put in longer hours, meet deadlines, and travel widely in addition to taking part in residential training sessions”

“No female teachers are appointed in very rural areas”

“Concession for women in work, more risky works for men”

“It is true that women are given less preference than males somewhere in the system. Men are seen as the family’s main source of income, which is another reality. Society makes judgments about males who don’t work, but not about women”.

5.4 Discussion

The aim of the study was to analyze if gender inequality exists in the workplaces in non-urban areas of India. The prediction and classification models applied on the dataset gave results which proved that very few people have experienced gender inequality in their career. Current salaries of the employees were predicted based on gender and years of experience. Decision tree regression model gave the best results. Kernel SVM classifier gave highest accuracy of 0.65 to classify into male and female.

The data visualization revealed that the fact that people feel gender equality is independent of their wealth, education, or years of experience. It has very little to do with gender. The study placed a greater emphasis on the female perspective. A more extensive poll with a focus on male opinions would have aided in the examination of both genders’ perspectives. Following the initial survey, a second survey was conducted on the same group of people, focusing on a specific subject raised by the majority of respondents to the first survey. The second research merely asked one question: Despite the fact that women hold positions of leadership and administration in the country, do society and family expectations continue to hold them back? The results obtained were as expected where 98% of people agreed on the fact.

6 Conclusion and Future Work

The study’s goal was to determine if gender disparity still exists in Indian workplaces. Since the previous few decades, the region has been the subject of much investigation. Finding out how things were going in rural workplaces was the key goal. The staff of the government department where the research was conducted worked there for roughly

ten years. The opinions of these working professionals were documented in an empirical investigation that was undertaken. According to the study's findings, the situation is far better—or, in other words, radically different—than it was a few decades ago. Women now work in every sphere of life as a result of economic advancement and legal opportunities for them. Women are in executive positions, and they receive equal opportunity and treatment, but Indian society's perceptions and families' obligations and expectations are what are preventing women from advancing professionally. Another major concern people had was that the ladies are given a gentle treatment, despite the fact that both genders get the same wage and employment roles. The dataset was subjected to a few machine learning algorithms, however they produced results with extremely low accuracy, demonstrating that gender inequality is unrelated to things like experience, pay, or qualifications.

The study, however, missed a male viewpoint, which may be considered in the future. A comprehensive set of questions geared to elicit male perspectives will be devised for the survey.

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