Shodhsamhita : Journal of Fundamental & Comparative Research
Vol. VII, No. 10(I): 2021
ISSN: 2277-7067

THE EFFECT OF GENDER DIVERSITY ON TEAM PERFORMANCE

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1. Introduction:

We are being a part of world where diversity forms the fabric of modern society, diversity in the business environment includes everything ranging from gender, race and ethnicity to individuals dealing out diverse religious and political views, education levels, socioeconomic upbringings, cultures and even disabilities. However, the coming together of these people of different backgrounds, genders, ethnicities and different experiences in cities and societies is a key driver of innovation.

A diverse workplace is one where employees from different backgrounds, with different personalities, opinions or experiences, work together to solve organisational goals. Gender diversity refers equitable or fair representation of people of different genders. The term simply means an equal representation of men and women in the workplace. In addition, it also means that men and women are hired at a similar and consistent rate, are paid equally and are given the same working opportunities with the same promotional opportunities.

However, gender equality remains a major issue in the corporate world. From an early age boys and girls are unconsciously treated differently causing stereotypes when it comes to what they think they can achieve. It's not always well known that girls generally perform better at school yet in their working lives is it frequently the case that they earn less and occupy less leadership positions than men. These differences in upbringing have dangerous impacts.

Whilst women make up around 40% of the global workforce, only about 5% of those are in CEO and upper management positions and even then, annual salaries or men in similar positions are far from equal. In fact, studies have suggested that women earn only 80% (or less depending on ethnicity) of what their male counterparts do. In addition, it's only natural that CEOs and board members tend to think of their friends and colleagues for board openings. And since most CEOs and board members are men, they tend to think of other men first. Getting more women on boards is critical because substantive change in the workplace must start at the top – whether its pay equality or workplace culture that allows both women and men to do their best work, grow in their careers and have balance between work and the rest of their lives.

Gender inequality takes different forms. Although the global average female labour force participation rate hovers around 45 percent, the average rate masks significant cross-regional differences in levels, from only about two-fifths of women participating in the labour market in the Middle East, North Africa, and Central Asia to almost two-thirds in sub-Saharan Africa. Gender wage gaps continue to be a global issue. Although some countries have made important progress in closing earning gaps, on average, women's earnings are about half those of men. Low inclusion of women in the labour market and political positions also reflects unequal opportunities in access to education and health from early childhood and to financial services. It is also impeded by the pervasive presence of gender-based legal restrictions in many countries.

2. Gender Diversity in the Indian Workforce

India is one of the fastest growing economies in the world with an estimated growth rate of 7.2% in the current fiscal. While there has been a growth in GDP in comparison to the previous year's 6.7%, the country is yet to leverage its full potential. With only 24% of its 497 million women population participating in the workforce (Census 2011), the country is nowhere close to what it can fully achieve.

Out of 131 countries, India currently holds the 120th position in terms of the female labour force participation rates and gender-based violence witnessed. Despite constituting 48% of the

population, women and girls lack education and access to skill building and employment opportunities, resulting in to a fall in female employment rates from 35% of the workforce in 2005 to 28% in 2018. Female LFPR is currently 50% lower than male LFPR in India, with 95% women (195 million) employed in the informal sector. By comparison, the female LFPR in Sweden is 88%.

In addition to this, female labour force participation has faced a huge fall from 36.7% in 2005 to 26% in 2018, with 95% (195 million) women being employed in the unorganised sector or engaging in unpaid work. India has amongst the lowest female labour force participation rates in the world. Less than a third of women – 15 years or older – are working or actively looking for a job.

3. Need of the research:

Gender diversity in the workplace is a pertinent issue, especially in India, where women often lack leadership positions. To tackle this issue, many companies are taking concrete steps like promoting collaborative culture, greater industry exposure for women employee and equal pay for equal work. Through this paper, the researchers has attempted to find a link between gender diversity and team performance. The global labour male to female participation ratio is highly skewed, and this ratio only worsens as one climbs higher up the corporate ladder, especially on company boards and in developing countries. The rampant systems of discrimination and bias mentioned earlier only worsen this divide.

The researcher hopes to examine one of the many ramifications of such a gender divide its effect on team performance. By not allowing fair representation of the opinions and perspectives of an entire gender- which is what happens on most company boards, managerial roles and parliaments- the researcher believes that teams, businesses and entire economies loose on vital input and creative solutions that such diversity can bring to the table. As a result of this, this research paper aims to provide "A detailed study of the impact of gender diversity on team performance".

4. Objectives of the study :

The objectives of this study are as follows:

1. To shed light on the highly skewed gender composition in businesses, company boards and parliaments around the globe.
2. To compare the performances of teams with different levels of gender diversity.
3. To establish whether a correlation between a team's performance and its gender composition exists.
4. To examine whether such diversity positively or negatively impacts team performance.
5. To offer suitable reasons as to why companies, governments and institutes should improve gender diversity in their organisation.
6. To offer practical suggestions to companies, governments and institutes to improve gender diversity in their organisation.

5. Statement of the hypothesis:

For this research paper, the following hypotheses have been devised:

Null Hypothesis:

H_0: Gender Diversity has no impact on the performance of a team.

Alternative Hypothesis:

H_1: There is a significant impact of Gender Diversity on team performance.

H_1 (a) Gender diversity positively impacts the performance of a team.

H_1 (b) Gender diversity negatively impacts the performance of a team.

6. Research Methodology :

While gender diversity most commonly refers to an equitable ratio of men and women, it may also include people of non-binary genders. For the purpose of this paper, the researcher has chosen to adopt the first definition only i.e. an equitable ratio of men and women.

In order to determine the performance of a team, the sample teams were each given the same case study with the same set of questions at the end. They were then asked to discuss the study and note down their answers as a group, which were then graded out of a total score of 15. This score determined how well a particular team performed.

7. Population and Sample :

All individuals working in and around Pune city was the universe for this study. For this paper, a total of 15 teams, each with varying levels of gender diversity, were considered. Each team was composed of 4 individuals who meet the above criteria. Therefore, the sample size for this paper consists of 60 such individuals, divided into 15 teams of 4 members each.

There was a total of 5 gender compositions defined and 3 teams of each composition were created. Three sets of responses were created, with each set having 5 teams of the 5 gender compositions mentioned below. (Set 1 has teams 1 to 5, set 2 has teams A to E and set 3 has teams I to V.) The gender compositions and respective teams are as follows:

Team 1, A and I: Male, Male, Male, Male
Team 2, B and II: Male, Male, Male, Female
Team 3, C and III: Male, Male, Female, Female
Team 4, D and IV: Male, Female, Female, Female
Team 5, E and V: Female, Female, Female, Female

Gender diversity/composition of a particular team was determined by calculating the ratio of one gender to the other (with the underrepresented gender, if any, taking precedent). Therefore, for a team having 3 females and 1 male, the gender diversity/composition of that team is equal to 1/3 i.e. 0.33 (or 33%). Zero represents the lowest possible gender diversity i.e. such a team consist of members of just one gender. On the other hand, 1 (or 100%) represents the highest possible gender diversity i.e. both genders are equally represented in such a team.

The gender diversity for each team is as follows:

Team A, 1 and I: 0 or 0%
Team B, 2 and II: 0.33 or 33.33%
Team C, 3 and III: 1 or 100%
Team D, 4 and IV: 0.33 or 33.33%
Team E, 5 and V: 0 or 0%

8. Sampling method:

Sampling is a process in which a predetermined number of observations are taken from a larger population. In other words, it is a procedure for selecting sample members from a population. For this study, due to limited time and financial resources available to the researchers and due to the restrictions imposed by the Covid-19 lockdown, convenience sampling was used. Data collection for this paper was achieved via conference calls, video calls, messages and emails- all relatively fast, easy and pocket-friendly options.

9. Sources of data collection:

The primary data for this paper was collected by providing each team with the same case study and set of questions. Each team had to discuss this study amongst themselves and then answer the questions at the end as a group. Their responses were then analysed. Data was collected via conference calls, video calls, messages and emails.

Research papers, studies and articles available online served as references for this paper. The list of articles/papers referred to is available in the Webliography section of the project.

10. Examination of the gender composition in businesses, company boards and parliaments around the globe

10.1 An Overview

The male to female ratio in the workplace is highly skewed in favour of the male gender. Despite progress, women and men do not have the same opportunities to participate in economic activity, and when women do participate, they do not receive the same recognition, wages, or benefits as men. Whilst women make up around 40% of the global workforce, only about 5% of those are in CEO and upper management positions and even then, annual salaries or men in similar positions are not equal. In fact, studies have suggested that women earn only 65 to 80% of what their male counterparts do.

Out of 131 countries, India currently holds the 120th position in terms of the female labour force participation rates and gender-based violence witnessed, with women accounting for only 23-24% of the total labour force. However, even in counties where labour force participation rates are high, the quality of jobs differs for men and women. In many countries women are predominantly involved in the informal sector with low-paying and vulnerable jobs.

The lack of basic legal rights also prevents women from participating fully in economic and political opportunities. According to the IPU (Inter-Parliamentary Union), the global participation rate of women in national-level parliaments stands at just 24.5%. Such a number is extremely problematic especially when there are entirely male dominated panels voting on women's rights or on issues that should have a fair representation while voted on. Low inclusion of women in the labour market and political positions also reflects unequal opportunities in access to education and health from early childhood and to financial services. For example, in India, only sixty-five percent of women are literate as compared to 80 percent of men.

10.2 Determining the correlation present between the gender diversity and team performance

To determine the extent of that relation between gender diversity and team performance Pearson's coefficient of correlation technique is used. Pearson's correlation coefficient (r) measures the statistical relationship, or association, between two variables. In this case the two variables in question are gender diversity and team performance (represented by their marks obtained). Pearson's coefficient is often known as the best method of measuring the association between variables of interest because it is based on the method of covariance. The correlation coefficient (r) has a value that must fall between -1.0 and +1.0, with +1.0 indicating a perfect positive correlation and -1.0 indicating a perfect negative correlation. A perfect positive correlation means that that as one variable moves, either up or down, the other variable moves in lockstep, in the same direction. A perfect negative correlation means that two assets move in opposite directions, while a zero correlation implies no relationship at all.

In order to combat difference of in marks allotted to each team, the individual correlation coefficients of each set were first calculated before taking the average of the three coefficients to arrive at the final value.

Set 1 Analysis:

Team	Gender Diversity	Team Performance i.e. Marks Obtained (out of 15)	Pearson's correlation coefficient (r)
I	0	6	**0.8604**
II	0.33	11	
III	1	13	
IV	0.33	9	
V	0	9	

The correlation coefficient (r_1) for Set 1 is **0.8604**, which indicates a significant and positive correlation between the two variables. This means that as the gender diversity of a team increases,

its performance increases as well. In other words, more gender diverse teams perform better than teams comprising of just one gender.

Set 2 Analysis:

Team	Gender Diversity	Team Performance i.e. Marks Obtained (out of 15)	Pearson's correlation coefficient (r)
A	0	7	
B	0.33	10	
C	1	13	**0.9412**
D	0.33	10	
E	0	9	

The correlation coefficient (r_2) for Set 2 is **0.9412**. This also represents a very strong positive correlation, which means that as the gender diversity of a team increases, its performance increases as well. In other words, teams that exhibit high levels of gender diversity outperform teams comprising of just one gender. For example, team C (which has the best gender composition of the group) performed much better than teams A and E (which comprised of members of just one gender, thereby having the lowest gender diversity at 0%).

Set 3 Analysis:

Team	Gender Diversity	Team Performance i.e. Marks Obtained (out of 15)	Pearson's correlation coefficient (r)
I	0	9	
II	0.33	11	
III	1	12	**0.9384**
IV	0.33	10	
V	0	9	

The correlation coefficient (r_3) for Set 3 is **0.9384**. Like in the above sets, this too indicates a strong positive correlation, which implies that as the gender diversity of a team increases, so does its performance.

Correlation Constant (r) for the whole sample

As mentioned earlier, each set of responses was graded. It is important to note that due to minor differences in grading styles, slight variances in marks allotted to each team may arise. In order to combat such variances, the individual correlation coefficients of each set were first calculated before taking the average of the three coefficients to arrive at the final value. Therefore, the correlation constant (r) for the whole sample = $(r_1 + r_2 + r_3)/3$

$r = (0.8604 + 0.9412 + 0.9384)/3$

$r = 0.9133$

Since the **correlation constant (r) for the whole sample is 0.9133,** it implies that the **gender diversity of a team has a significant and positive impact on its performance.** In other words, **as gender diversity of a team increases, so does its performance.** Due to this, teams exhibiting high levels of gender diversity i.e. a balanced ratio of both genders (such as teams 3, C and III) tend to outperform those teams that comprise of members of just one gender (such as teams 1, 5, A, C, I and V).

11. Hypothesis Testing

In the case of this research paper, the two mutually exclusives statements are H_0 (the null hypothesis) and H_1 (the alternate hypothesis):

Null Hypothesis:

H_0: Gender Diversity has no impact on the performance of a team.

Alternative Hypothesis:

H_1: There is a significant impact of Gender Diversity on team performance.

H_1 (a) Gender diversity positively impacts the performance of a team.

H_1 (b) Gender diversity negatively impacts the performance of a team.

In order to determine whether any relationship existed between the two variables (gender diversity/composition and team performance), Pearson's Correlation Coefficient (r) was calculated and the value of this coefficient was a **positive 0.9133**.

If the test concludes that the correlation coefficient is significantly different from 0, the correlation coefficient is "significant" and vice versa. However, this value alone (0.9133) is insufficient to prove or disprove the hypothesis stated above. Pearson's correlation coefficient, tells us about the strength of the linear relationship between the two variables on a regression plot. But the reliability of the linear model also depends on how many observed data points are in the sample (i.e. the sample size represented by n). Hence, it is imperative to look at both the value of the correlation coefficient (r) and the sample size (n). In order to take into account the sample size and minimize type 1 errors, the level of significance and critical values must be defined.

The level of significance is a key input in hypothesis testing. The significance level, also denoted as alpha or α, is the probability of rejecting the null hypothesis when it is true (i.e. a Type 1 error). For example, a significance level of 0.05 indicates a 5% risk of concluding that a difference exists when there is no actual difference. Since this project falls under the domain of social science, the researcher has chosen to adopt the customary **0.05 significance level** based on R. A. Fisher's argument that a one in twenty chance represents an unusual sampling occurrence. This allows for 95% level of confidence while rejecting the null hypothesis.

The degree of freedom is calculated by subtracting 2 from the sample size. For this research project, the sample consists of 60 individuals divided into 15 teams, each with varying levels of gender diversity. Hence, **n=15** and the **degree of freedom (df)= 13** (15-2).

Therefore, the corresponding **critical values** for df = 13 are **+ and – 0.514.** This means that if Pearson's Correlation Coefficient (r) falls between -0.514 and +0.514 (the acceptance range), we accept the null hypothesis (H_0) and reject H_1. On the other hand, if r is either less than or greater than -0.514 and +0.514 respectively, we consider the correlation significant and reject H_0.

Since the correlation coefficient (r) for our sample is a positive 0.9133 and is greater than 0.514, we consider the correlation significant and reject H_0 (Gender Diversity has no impact on the performance of a team) and accept H_1 (a) (Gender diversity positively impacts the performance of a team) since the value of r is positive. This indicates that as the gender diversity of a team increases, so does its performance.

12. Findings and conclusions:

1. After an analysis of the gender composition and diversity of the workforce in businesses, company boards and parliaments around the globe, one can conclude that the male to female ratio in the workplace is highly skewed in favour of the male gender. Despite progress over the last few decades, women and men do not have the same opportunities to participate in economic activity, and when women do participate, they do not receive the same recognition, wages, or benefits as men.

This gender divide manifests itself in politics as well. According to the IPU (Inter-Parliamentary Union), the global participation rate of women in national-level parliaments stands at just 24.5%. Such a number is extremely problematic especially when there are entirely male dominated panels voting on women's rights or on issues that should have a fair representation while voted on. Low inclusion of women in the labour market and political positions also reflects unequal opportunities vis-à-vis access to education and health and to financial services.

2. Since the value of this correlation for the whole sample was a positive 0.9133, it indicates that gender diversity of a team has a significant and positive impact on its performance. In other words, as gender diversity of a team increases, so does its performance. Due to this, teams exhibiting high levels of gender diversity i.e. a balanced ratio of both genders outperform those teams that comprise of members of just one gender.

3. In addition to the ethical and moral responsibility that companies, governments and institutes have towards correcting the blatant gender divide mentioned earlier and to tackling discrimination in their organisations, they also have a responsibility towards ensuring the decisions they make are beneficial towards both society and the organisation itself. By taking steps to eliminate, or at least reduce this divide (such ensuring unbiased hiring and job advertising), companies can gain from not just more a competent workforce but from the benefits of diversity as well- such an inflow of new opinions, varied perspectives, higher innovation and ultimately more profits.
4. According to McKinsey Global Institute (MGI), by just ensuring a more equal gender composition in the workforce, i.e. by enabling women to participate in the economy on par with men, India can increase its 2025 gross domestic product (GDP) by between 16% and 60%. Equal participation by women would add as much as $28 trillion, or 26%, to the world's 2025 GDP—roughly equivalent to the size of the combined US and Chinese economies today.
5. Businesses have the power to create change in society as well. By ensuring a workplace free from gender-bias and discrimination and one where in both genders are equitably represented, we are one step closer to creating a world free from gender-bias and discrimination as well.
6. It will take government, individual and business-led interventions to create an environment that offers women better opportunities- that enables them to train for and work in skilled, better-paying roles and where social norms and attitudes support work–life balance. Gender equality is more than a goal in itself; it is a pre-condition for meeting the challenge of reducing poverty, building good governance, and promoting sustainable development.

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