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A study on the Perception of Factors Influencing Gender Pay Gap in the Information Technology Industry of Kerala

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Abstract:- *Gender pay gap has been part of scholarly discussions for quite some time. In our study we highlight the perception of employees of Information Technology on gender pay gap and the factors influencing the same in the region of Kerala, in which, not many studies have been conducted. Through a focus group discussion, the data was collected, converted into quantitative and then analyzed through factor analysis. We found out that the majority of the respondents perceived gender pay gap in their organizations. Our study also found out that,the respondents perceived, Working for long hours, Bargaining power, Networking with Superiors, Projecting Oneself ,Gender Discrimination as the main factors that influences the gender pay gap.*
Keywords:- *Information Technology, Gender, Gender Pay Gap, Perception*

I. INTRODUCTION

In spite of a substantial decline in the gender wage gap since the 1960s, women still earn significantly lower wages than men. There is an ample improvement in terms of education, labor market qualifications, experience etc. over the past 40 years. Moreover, technological change and industrial restructuring has led to an increased demand for white-collar workers. However, empirical evidence from an international meta-analysis indicates that men with similar labor market qualifications as women earn a wage premium of 25% on average and that this varies considerably between countries. [1]

According to the report by ILO 2009 report, the progress in decreasing the gender pay gap is very slow in Europe and central Asia. In the United States the pay gap persistent has declined only slightly. The report by ITUC 2008 report shows that across African countries women are engaged more in informal and unpaid employment and due to this there is little official data available on the pay gap.

Now why this gender gap? According to ILO, in a broad-spectrum, there are two main reasons for the pay gap; direct gender discrimination in labor markets and occupational segregation direct discrimination occurs when people who possess the same level of educational attainment and work experience are treated differently because of their gender. This can be different pay levels for the same work or different job requirements for the same pay level. According to the ILO 2009 report , even though women represent 40.4 percent of the worldwide workforce, the proportion is not across the various sectors. Service sector seems to be the most preferred with 46.3 percent of women employees, followed by agriculture sector with 35.4 percent employees while only 18.3 percent in the industrial sector, compared to 26.6 percent of employed men.

Despite the efforts of the government by introducing several laws to prohibit inequalities or discrimination against women workers, there still exists a wide gender pay gap in India. This arises the question: Does the so called glass ceiling still exists in Indian workplaces? Data shows yes and hence the objective of the study is to find out the perception of glass ceiling with respect to pay and the factors that influences the same.Insipte of the efforts by corporate and government to reduce the pay gap, the reality is our corporates are not free from this. It's not the case with Indian corporates it's applicable to all most all the countries. Hence it's a serious concern and since there are not many studies conducted with IT sector Kerala on pay gap studies, we decided to choose the IT employees of Kerala. The paper is divided into five parts. We started with theoretical framework followed by literature review, objectives, findings and discussion and conclusion.

II. THEORETICAL FRAME WORK

Gender pay gap measures the difference in earnings between women and men in a labor market. Different theories have been devised to explain the gender pay gap .The most prominent one is the Human capital model and the labor discrimination model. Studies by Becker, MincerPolachek (1974)[2].have proved that factors like education, training, experience are contributors to productivity which in turn will affect the wages.According to their study, women accumulate less human capital and hence less wages compared to men. This is because of the traditional division of labor within the family and voluntary choices exercised by women to invest less in human capital. This alone need not be the reason for pay gap.Discrimination in the labor market can be explained as the result of employer's tastes or preference. Some employers have a taste for discrimination against women workers and thus, hiring women imposes an additional psychic cost on them.

[3]In this paper, we also consider an important theory on gender pay gap that has roots in the psychological differences in the behavior of men and women. Studies also argue that a powerful cause of women's disadvantage is that they tend to have a lower opinion of themselves than men so do not ask their bosses for what they want and passively accept wage offers rather than bargain for better conditions. [4]

III. LITERATURE REVIEW

The gender gap in wage is not a contemporary issue, but has long been an issue that has attracted both political and scholarly discussions. There appears to be inequity in pay in corporate India, fifty seven percent women think that they need to work harder than men to prove their competence. Having children tend to result in higher wages for men, whether they're straight or gay, married or partnered. Women are not so fortunate; Most mothers make less than childless women, A study conducted on US Grads shows that 45% said female grads would face some form of gender bias at world,13% said female grads would find it more difficult to network,33% said gender would affect female grads' pay, but only 13% believed that gender bias would affect them personally, 7% believed that networking would be harder for them personally, only 27% believed that gender would affect their own pay.[5]

A study on wages earned by male employees and female employees of Netherland [6] shows that despite major improvements in women's labor market attachment, women still earn considerably less than men. It's found that female executives tend not to reap the rewards of strong corporate performance. Data shows that women's bonuses stay flat how well the company is doing in contrast to the wages of the male counterpart. International research shows that although the gap in characteristics between men and women is diminishing, changes in the wage structure counteract this change. A study that focuses on whether this 'swimming upstream' phenomenon is also playing a role in the rather slow convergence between male and female wages in the Netherlands shows that te that this is not the case; most of the changes in the Dutch wage structure have been rather favorable to women. The lacking convergence in wages has to be explained from the fact that despite the favorable changes, the Dutch wage structure still contains a considerable implicit gender bias.

A Research in India to explore the impact of economic liberalization on the earning gap during the period of 1987-1999 shows that the gender earnings gap had narrowed considerably between these two years, for all earnings deciles and for all education cohorts. The narrowing of the earnings gap can be attributedlargely to a sharp increase in the returns to the labor market experience of women. [7]

There is no such single cause for gender pay gap.Barriers in hiring Sexual harassment and Unequal access to promotion are all hindering factors that contribute to less pay for women .Research suggests that discrimination, occupation segregation and undervaluation of women work are the major causes of gender pay gap [8]More recently institutional and situational variables arealso used.[9]The study conducted by the government t of Australia has found out that there is gender pay gap of 17.5% and the factors are discrimination, the different balance of paid and unpaid work that women and men undertake in their lifetime, the different industries in which women work compared to men and the under-valuationof the occupations in which women are largely employed (e.g. in caring and personal service roles) the way pay is set. [10]

IV. OBJECTIVES OF THE STUDY

Most of the studies quoted above showed that there is gender pay gap. But very few studies have done in Kerala. Hence we took Kerala and we selected the IT industry which is one of the promising industries of Kerala. Theobjective of our study was to find out,the perception ofthe existence of gender pay gap in the IT sector of Kerala. Our focus was then to find out the perception of thefactors that influence gender pay gap. We also identified the important factors perceived by the respondents as the one that influences the gender pay gap

V. METHODOLOGY

This research was undertaken in 15IT organizations of techno park Trivandrum through Focus Group Discussion with20 employees. There were 10 HR managers and 10 IT employees. The break up was as follows Ten HR managers with 10-15 years of experience, Two employees from top level Six from mid-level and Two from entry- level. The discussion was done to find out the various perspectives on the causes of gender based pay.

After this, the data from the discussion was combined and then the opinions were quantified using a 5point likert scale. Wereduced the data, as well as, removed some redundant variables, through factor analysis, which helped us to remove variables (highly correlated) from the data file, perhaps replacing the entire data file with a smaller number of uncorrelated variables.

We started with descriptive statistics of all the variables and KMO and Bartlett test was done to measure the sampling adequacy

Next in the Total variance chart the variance explained by the initial solution, extracted components, and rotated components is displayed. This first section of the table shows the Initial Eigenvalues. The total column gives the eigenvalue, or amount of variance in the original variables accounted for by each component .The % of Variance column gives the ratio, expressed as a percentage, of the variance accounted for by each component to the total variance in all of the variables. The Cumulative % column gives the percentage of variance accounted for by the first n components.

In the initial solution, there are as many components as variables, and in a correlations analysis, the sum of the eigenvalues equals the number of components. Once the factors are extracted next a rotation of components were done.Rotation maintains the cumulative percentage of variation explained by the extracted components, but that variation is now spread more evenly over the components. The large changes in the individual totals suggest that the rotated component matrix will be easier to interpret than the unrotated matrix. We used Varimaxrotation an orthogonal rotation of the factor axes to maximize the variance of the squared loadings of a factor (column) on all the variables (rows) in a factor matrix, which has the effect of differentiating the original variables by extracted factor. This will help us to derive either large or small loadings of any particular variable. A varimax solution yields results which makes it as easy as possible to identify each variable with a single factor. This is the most common rotation option. The scree plot helps to find out the optimal number of components. The eigenvalue of each component in the initial solution is plotted. Generally, you want to extract the components on the steep. The components on the shallow slope contribute little to the solution. Thus through factor analysis we identified the major factors that influences pay. There were totally nineteen statements from which we identified five factors.

VI. FINDINGS AND DISCUSSION

The discussion data was aggregated and to identify the representative constructs through factor analysis we could describe the variability among the nineteen observed, correlated variables in terms of a potentially six unobserved variables or factors.

6.1Findings 1

The results of the perception of the Male respondents showed that 42% Strongly Agree, 36% Agree and 22 % agree to some extent, that there is gender pay gap among the IT employees of Kerala. Among the Female respondents, 68% strongly agree 28% agree and 4% agree to some extent that there is gender pay gap.

The results of the descriptive statistics for the causes of Gender pay Gap as displayed TABLE 1, Quality of output and, Bargaining power both with a Mean 4.50 are rated as the most important factor)that causes gender pay gap . This was followed by Quality of output (Mean 4.40) and Working for long hours (Mean 4.35).

One respondent *commented "working for long hours will create an impression among the superiors that the employee hard working. May be there is no extra output. Note, may be in many times it happens like that."*

The other factors which the respondents rated high are men are available after office hours with a mean of 4.25 and negotiating influences the pay again with a mean of 4.25.

Another respondent commented *"Usually men work for long hours, I mean sit in the office after the office hours.Doesnt mean that they are doing extra work compared to men I finish and leave he continue sitting there without any extra out*".

Then the male responded commented "*It definitely helps me to have an informal relation with my other colleagues as well as networking with my boss. And many of the ideas are generated during this discussion".*

Table1 Descriptive Statistics of FactorsInfluencing gender pay gap

Descriptive Statistics			
Variables	Mean	Std. Deviation	Analysis N
Working for long hours	4.3500	.67082	20
Sits in the office after office hours	3.9000	.85224	20
Women cannot sit after office hours	2.0000	.85840	20
Even if the work is over men stay back at office	3.7500	.91047	20
Men are available after office hours	4.2500	.63867	20
Bargaining Power Influences Pay	4.5000	.51299	20
Negotiating with superiors Influences pay	4.2500	.71635	20
People who ask will get more salary	4.1000	.64072	20
Networking influences pay	3.6500	.74516	20
Good relation with boss increases pay	3.7000	.73270	20

Interpersonal relation with boss increases pay	3.5500	.99868	20
Impression management influences pay	4.0000	.64889	20
Men work long hours which enhances impression and pay	3.9000	.71818	20
Men is good in impression management and enhances pay	3.8500	.58714	20
Quality of output enhances pay	4.5000	.51299	20
Whatever be the strategy quality matters lot	4.4000	.50262	20
Gender discrimination influences pay	2.7000	.73270	20
Women will not get high pay	3.7500	.71635	20
Whatever be the quality gender influences pay	3.0500	.60481	20

6.2Findings 2

KMO test was done to measure the proportion of the variance in the 19 variables that might be caused by the factors. High values (close to 1.0) generally indicate that a factor analysis may be useful with the data. If the value is less than 0.50, the results of the factor analysis probably won't be very useful.The KMO Result of .318 (TABLE 2) shows less compact and would yield less distinct and less reliable factors.Bartlett's Tests would indicate whether the variables are unrelated and therefore unsuitable for structure detection. Small values (less than 0.05) of the significance level indicate that a factor analysis may be useful with the data**.**The Bartlett's test ofspherecity of our study (Table 2) was .000($p<.005$) and hence was highly significant

Table 2: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of		.318
Bartlett's Test of Sphericity	Approx. Chi-Square	453.111
	df	171
	Sig.	.000

6.3Findings 3

The total variance chart (TABLE 3) Shows that only 5 factors in the initial solution have eigenvalues greater than one. If a factor has Eigenvalue less than 1.0, it explains less variance and is rejected. SPSS default is to keep any factor with an Eigene value larger than 1.0.The eigenvalue for a given factor measures the variance in all the variables which is accounted for by that factor. The ratio of eigenvalues is the ratio of explanatory importance of the factors with respect to the variables. If a factor has a low eigenvalue, then it is contributing little to the explanation of variances in the variables and may be ignored as redundant with more important factors. Eigenvalues measure the amount of variation in the total sample accounted for by each factor.The first Eigene value was 6.693 followed by second factor with a eigenvalue of 3.740, third factor with a eigenvalue of 2.397, fourth factor with a eigenvalue 1.866 and fifth factor with a eigenvalue of 1.294. As the theory predicts the first factor has the largest value which explains the greatest amount of variance. It then lists the percent of the variance accounted for by this factor (eigenvalue divided by the total number of variables) and this was followed by a cumulative percent. In our study, together the five factors accounted for 84% of the originality in variables. This means that 84% of the perceptions of respondents are explained through five factors

6.4Findings 4

A scree plot was obtained to conform the five factors. As shown in Fig 1 below, five to six factors would be appropriate for explaining the factors.

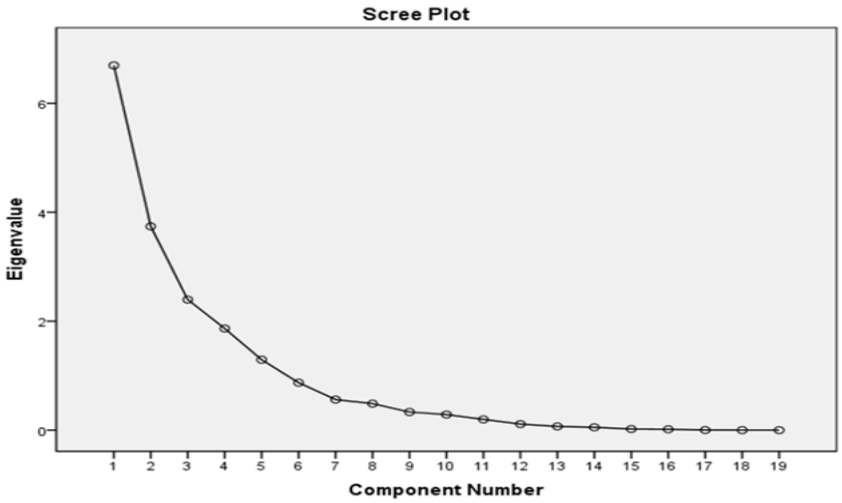

Figure 1: Scree Plot

Table 3: Total variance

Total Variance Explained									
	Initial Eigenvalues			Loadings			Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.696	35.240	35.240	6.696	35.240	35.240	4.751	25.005	25.005
2	3.740	19.683	54.923	3.740	19.683	54.923	3.336	17.557	42.562
3	2.397	12.614	67.537	2.397	12.614	67.537	3.180	16.735	59.297
4	1.866	9.820	77.357	1.866	9.820	77.357	2.556	13.453	72.750
5	1.294	6.809	84.166	1.294	6.809	84.166	2.169	11.416	84.166
6	.872	4.589	88.755						
7	.561	2.954	91.708						
8	.487	2.562	94.270						
9	.333	1.753	96.023						
10	.286	1.507	97.530						
11	.197	1.038	98.568						
12	.112	.592	99.160						
13	.068	.360	99.520						
14	.052	.272	99.792						
15	.021	.109	99.901						
16	.016	.084	99.985						
17	.002	.010	99.995						
18	.001	.004	99.999						
19	.000	.001	100.000						

6.5Findings 5

Next we obtained the component matrix and rotated component matrix.(TABLE 4) Extraction method was done through principal component analysis in which the Factor weights are computed in order to extract the maximum possible variance, with successive factoring continuing until there is no further meaningful variance left. Using principal component analysis 5 factors were extracted.

Table 4 Rotated component matrix

Rotated Component Matrix					
Variables	Component				
	1	2	3	4	5
Sits in the office after officehours	.895	-.094	-.225	.202	.038
People who ask will get more salary	.814	.255	-.196	-.226	-.168
Interpersonal relation with boss increases pay	.814	.324	.196	-.154	-.103

Networking influence spay	.751	.175	.282	-.325	.044
Negotiating with superiors influences pay	.741	.465	-.278	-.109	-.242
Men are available after office hours	-.106	-.819	.245	.324	.065
Whatever be the strategy quality matters lot	.185	.809	.011	.270	.334
Women cannot sit after officehours	.047	.693	.463	.173	-.153
Quality of output enhances pay	-.608	-.666	.100	.018	.219
Evenif the work is over men stay backoffice	.445	.627	.135	.136	-.481
Projecting oneself influencespay	-.223	-.041	.870	.138	.143
Women will not get high pay	-.043	-.060	.858	-.297	-.099
Goodrelation with boss increases pay	.174	.049	.678	-.265	-.140
Bargaining power influences pay	-.167	.202	-.132	.897	.031
Working for long hours	-.565	-.032	-.110	.711	.046
Genderdiscrimination influences pay	.300	-.215	-.518	.666	-.298
Men isgood in impression management which enhances pay	.004	-.056	.075	-.086	.942
Men work long hours which enhances impression and pay	.523	-.173	.413	-.112	-.566
Whatever be the quality gender influences pay	-.323	-.373	-.406	.382	.547

Once the factors have been selected, the next step is to rotate them. Rotation is needed because the original factor structure is mathematically correct but is difficult to interpret. The goal of the rotation is to achieve what is called simple structure that is high factor loadings on one factor and low loading factors on all others. Factor loadings vary between +1.0 to -1.0 and indicate the strength of relationship between a particular variable and a particular factor in a way similar to correlation. We used Varimax Rotation with Kaizer normalization. Rotations converged in 8 iterations. We then derived the items coming under each factor. The rotated component matrix helps you to determine what the components represent.

As shown in TABLE 5,the **first component** is highly correlated with the variables 1)Sits in the office after office hours, 2)People who ask will get more salary, 3)Interpersonal relation with boss increases pay, 4)Networking influence pay5)Negotiating with superiors influence pay and hence we identified the factor as Networking with boss. **The second component** is highly correlated with variables1) men are available after office hours,2) whatever be the strategy quality matters lot,3) women cannot sit after officehours,4)quality of output enhances pay,5)even if the work is over men stay back office.Hence we developed the factor working for long hours. **The third component** is highly correlated with three variables 1) projecting oneself influences pay, 2) women will not get high pay,3)good relation with boss increases pay. **The fourth component** is highly correlated with the three variables 1)bargaining power influences pay,2)Working for long hours,3)Gender discrimination influences pay. Among this the first variable bargaining power influence is a better representative and hence we developed bargaining power as the fourth factor that influences pay. The final and **fifth component** has yet another three variables with high correlation. They are1) male employees create good impression which enhances pay, 2) Male employees work long hours enhances impression and pay, 3) Whatever be the quality gender influences pay

Table 5 Exploratory analysis of perception of Factors Influencing gender pay gap

Variable Number	Constructs and items	Factor Loading
Factor: Networking with Boss(Eigenvalue:6.696)		
2	Sits in the office after office hours	0.895
8	People who ask will get more salary	0.814
11	Interpersonal relation with boss increases pay	0.814
9	Networking influence pay	0.751
7	Negotiating with superiors influence pay	0.741
Factor: Working long hours(Eigenvalue:3.740)		
5	Men are available after office hours	0.819
16	Whatever be the strategy quality matters lot	0.809
3	Women cannot sit after office hours	0.693
15	Quality of output enhances pay	0.666
4	Even if the work is over men stay back office	0.627
Factor: Impression Management/Projecting Oneself(Eigenvalue:2.397)		
12	Projecting oneself influencespay	0.87
18	Women who doesn't project oneself will not get high pay	0.858
10	Good relation with boss increases pay	0.678

Factor: Bargaining Power(Eigenvalue1.866)		
6	Bargaining power influences pay	0.897
1	Working for long hours	0.711
17	Gender discrimination influences pay	0.666
Factor: Gender Discrimination(Eigenvalue:1.294)		
14	Male employees create good impression which enhances pay	0.942
13	Male employees work long hours enhances impression and pay	0.566
19	Whatever be the quality gender influences pay	0.547

VII. CONCLUSION

Pay is one of the most important factors that motivate an employee to work. Gender pay gap, even though is not a new concept has become important because of its inexorable presence in all the corporates. Indian corporates are also of no exception. There are many studies conducted on gender pay gap. The present study focused on finding out the perception of factors causing gender pay gap in the IT industry of Kerala.We decided to go for an exhaustive focus group discussion so that we could explore deeply the perception of employees on factorsthat cause the pay gap. The study is thus different because we made an attempt at IT employees of Kerala where very few studies have conducted on the same. The focus group discussion data was converted into quantitative data using a five point likert scale and then analyzed through factor analysis. From the nineteen unobserved data we have derived five main factors. We selected Networking with Boss as the first which is highly correlated with the variables 1)Sits in the office after office hours, 2)People who ask will get more salary, 3)Interpersonal relation with boss increases pay, 4)Networking influence pay5)Negotiating with superiors influence pay and hence we identified the factor as Networking with boss. The second component is highly correlated with variables1) men are available after office hours,2) whatever be the strategy quality matters lot,3) women cannot sit after officehours,4)quality of output enhances pay,5)even if the work is over men stay back office. Hence we developed the factor working for long hours. The third component is impression management which highly correlated with three variables 1) projecting oneself influences pay, 2) women will not get high pay,3)good relation with boss increases pay. The fourth component is highly correlated with the three variables 1)bargaining power influences pay,2)Working for long hours,3)Gender discrimination influences pay. Among this the first variable bargaining power influence is a better representative and hence we developed bargaining power as the fourth factor that influences pay. The final and fifth component we identified is gender discrimination which has yet another three variables with high correlation. They are1) male employees create good impression which enhances pay, 2) Male employees work long hours enhances impression and pay, 3) whatever be the quality gender influences pay. Thus the study shows that the respondents perceived the existence of pay gap and according to them, the above said factors influences the pay gap. The study will be more useful if it can be extended to find out the perception of a large number of employees. However, mere perceptions may be inadequate; hence there isa much great scope for studying the real causes of gender pay gap and the various measures that can be adopted to overcome this issue.

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