Reimagining Gender Equality in Industry 4.0 Era

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ABSTRACT
Industry 4.0 is an abbreviation of the fourth industrial revolution, which is the effect of digital technologies such as the Internet of Things (IoT), Robotics, Cloud Computing, Additive Manufacturing, Artificial Intelligence (AI), and others. Technological changes like result, artifacts, knowledge, and expertise are becoming obsolete at an exponential rate. In this research paper researcher discuss and conclude about the four issues, first increasing the female workforce to represent the world around us second narrow and close the gender pay gap, third address conscious and unconscious bias of women in the workplace and fourth nurture a work climate of inclusion and gender equality towards gender equality reimagining in Industry 4.0 Era.

Keywords: Industry 4.0, IoT, AI, Gender Equality.

I INTRODUCTION

International Women's Day (IWD) grew out of the labour movement to become a recognized annual event by the United Nations (UN) seeded in 1908. Clara Zetkin suggested the idea in 1910 at an International Conference of Working Women in Copenhagen [1].

Digitalization creates new technological foundations and possibilities for collaboration, production, company organization, sales of goods and services. Globalization has been boosted by digitalization and has significantly expanded companies and workers spheres of action in recent decades and facilitated cross border trade and communication, but also led to a marked rise in migration flows. Demographic change determines that who and with what skills can participate in value creation now and in the future, along with ongoing cultural and societal change which is transforming consumption patterns and relationships and exerts a decisive influence on which innovations are accepted and catch on [2].

Across the globe gender inequality is one of the most persistent, widespread, and pervasive forms of inequality. Women's participation in the workforce especially in Industry 4.0 is an alarming area, where numbers indicate high unemployment and overrepresentation of women in mostly less salary, low ranking, and under resourced jobs. The G20 countries constitute 85 percent of Global Gross Domestic Product (GDP) and 75 percent of global trade even across G20 countries collectively and beyond but women are paid less than men, mostly unpaid labour, part time work, and are discriminated against in the institutions, household, and markets [3] [4].

II LITERATURE REVIEW

Violeta Sima and Ileana Georgiana Gheorghe in their research paper "Influences of the Industry Revolution on the Human Capital Development and Consumer Behavior: A Systematic Review" provides an overview related to influences of the Industry 4.0 Revolution on human capital development and consumer behavior [6].

Sher Verick in his research "Female labor force participation in developing countries", describe regarding improving employment outcomes for women takes more than raising labor market participation along with importance of good jobs. Researcher explain defining the labor force participation rate and U-shaped hypothesis in an effective manner [5].

Rachel Heath and Seema Jayachandran in their research paper, "The Causes and Consequences of Increased Female Education and Labor Force Participation in Developing Countries" describe the causes of increased female employment and policies which increased girl's education. The researchers also describe the effects increases in female education and labor supply for the wellbeing of women in an effective manner [7].

Torsten Skov in his research paper "Unconscious Gender Bias in Academia: Scarcity of Empirical Evidence" describe about the unconscious gender bias in academia and concluded that there is need of empirical evidence about unconscious gender bias in academia. Researcher also concluded that the present state of knowledge must be exercised when interpreting data about gender gaps in academia. Researcher observed that the scientific literature does not support gender gaps to unconscious bias [8].

Susan R. Madsen and Maureen S. Andrade in their research paper "Unconscious Gender Bias: Implications for Women's Leadership Development" focus on conscious or deliberate biases toward women at workplace settings in an effective manner [9].

International Labour Organization in "Research Note" published in 2017 focused on the Breaking barriers: Unconscious gender bias in the workplace. The research note provides a review of unconscious gender bias and its role in impeding women's career advancement and discussed that how to mitigate and overcome unconscious gender bias in the workplace [10].

III ISSUES TOWARDS REIMAGINING GENDER EQUALITY IN INDUSTRY 4.0 ERA

(a) Increasing the female workforce to represent the world around us: According to UNESCO low skill jobs are becoming less because of automation while the high-level education jobs are booming up. In Industry 4.0 the Artificial Intelligence (AI) workforces increase by 190 % in all over the world [11].

International Labour Organization in his "Trends for Women 2018" describe that the gender gap is narrowing because of slow decline rate in women's participation rather than that of men [12].

Table 1.1 showing the share of women in top 10 countries for % share of professionals with AI Skills in 2017 [11].

Country	Women % share of professionals with AI Skills
USA	23
India	22
Germany	16
Switzerland	19
Canada	24
France	21
Spain	19
Singapore	28
Sweden	20
UK	20

The table 1.1 showing the share of women in top 10 countries for % share of professionals with AI Skills in 2017. In this table % share of women professionals with AI Skills is being compared between top10 countries. The countries include USA, India, Germany, Switzerland, Canada, France, Spain, Singapore, Sweden, and UK. The table shows that in Singapore 28 % and in Canada there is 24 % contribution of women professionals in 2017.

Table 1.2 showing the % women contribution in technical and leadership roles in selected top multinational technologies companies in 2018-2019 [11].

Multinational Technologies Companies (MNCs)	% Women contribution in Technical	% Women contribution in Leadership
FACEBOOK	23	33
APPLE	23	29
AMAZON	?	27
GOOGLE	21	26
MICROSOFT	20	20
HAUWEI	?	07
SAMSUNG	17	06

The table 1.2 is showing the % of Women contribution in Technical and Leadership roles in selected top multinational technologies companies.? data not available. Here the seven MNCs has been compared in which % of women contribution in Leadership Facebook is on top and in % of Women contribution in Technical Facebook and Apple both are on top and equal.

(b) Narrow and close the gender pay gap: In research note published in 2017 by International Labour Organization parameters used to for these issues are performance evaluation, project assignments, meritocracy, leadership development programmes, norms, perception surveys, language analysis, analysis of gender gaps, experiments, blind evaluation, structured recruitment and performance evaluation, transparency, and accountability for the narrowing the gender salary gap. These methods build on the assumption that gender gaps in workplaces arise in part from gender bias. Common gender gaps include career advancement and pay, as well as gaps in hiring and opportunities for mentoring and professional development. An analysis of these gaps may show the impact of unconscious gender bias.

(c) Address conscious and unconscious bias of women in the workplace: Unconscious gender bias is defined as unintentional and automatic mental associations based on gender, stemming from traditions, norms, values, culture and/or experience. Unconscious bias describes tendencies of favouring positive or negative people or disliking individual or groups of people. Most common biases are given below:

(i) Affinity Bias: It is a tendency to favour people who like us.

(ii) Halo effect: It is a tendency to think that a person is skilled without sympathy.

(iii) Perception bias: It is a stereotype and assumptions-based belief about an individual or group of people.

Research note published by International Labour Organization in 2017 describe about the unconscious gender bias in the workplace which includes gender bias in company practices and structures and assessing unconscious bias against women at work. In the research note Mitigating unconscious bias has been discussed Mitigating unconscious bias using Methods for objective personnel decisions and talent management, Using data and training employee.

(d) Nurture a work climate of inclusion and gender equality: A work climate culture is an important aspect towards gender equality. Educating managers about inclusion at the workplace, rethinking workforce policies towards creating inclusive workplace culture, communicating inclusion goals, and measuring progress, celebrating differences to make everyone feel included, reviewing opportunities for employee engagement, forming a diversity and inclusion committee, meeting in round robin fashion, tie diversity and inclusion efforts to everyday conversations. Establishing expectations form inclusive culture, encouraging development at all levels, evaluating paternity and maternity leaves, offering women leadership roles, ensuring ongoing training on unconscious bias, creating a culture of shared accountability, encouraging & embracing cultural humility. All these aspects can be helpful for creating gender equality culture.

IV CONCLUSION

Demand of Industry 4.0 are higher degree of cognitive skills like creativity, social intelligence, emotional intelligence. Women are considered exceedingly well to perform in soft skills. In Industry 4.0 where women will be able to leverage their inherent strengths to help companies define and adjust their workforce strategies and nurture the skills for the future, that digitalization will require.

Companies must ensure that hiring and promotion processes extend equal opportunities to men and women. Most of companies' reports having policies in place to support unbiased hiring, performance review and promotion, but those policies are not always comprehensive or implemented effectively.

Consideration of the issues like increasing female workforce to represent the world around us, Narrow and close the gender pay gap, address conscious and unconscious bias of women in the workplace and Nurture a work climate of inclusion and gender equality will remove the barriers towards reimagining Gender Equality in Industry 4.0 Era. Our fast-paced industry can be boost up if we take consideration towards these issues. Nokia is working towards this direction. But according to US Bureau of Labour Statistics September report the gender gap is increasing due to COVID Era.

Encouraging and progressive as it may sound the Industry 4.0 gender equality. Reimagining Gender Equality in Industry 4.0 Era is an important and crucial need of Industry 4.0.

V FUTURE SCOPE

We must equip ourselves with future proof capabilities to participate in a workforce that is intrinsically digital and where humans interact with machines to get the job done.

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