Effects of Gender Equality in Education to Gender Disparities in Economic Participation: Global Evidences

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Abstract

This study explored the parity in educational attainment and economic participation and opportunities among genders through data mining, a process used to uncover characteristics of phenomena and the relationship between them. The Economic Forum's Global Gender Gap Index of 2015 was used to draw the pattern of gender parity across the globe. The findings based on the patterns generated reveal no relationship between the equality in educational attainment and economic participation and opportunities among men and women. The result indicates that educational completion and success of women do not automatically mean higher economic status or greater political participation. It is deduced further that equality in both genders in education could co-exist with disparities outside the educational domain such as in economic and political participation and opportunities. The factors of disparity include gender stereotyping in the labor market, discriminatory practices in the workplace, and cultural, ethnic, and religious norms that draw attention to gender complementarity rather than gender equality.

Key words: *Gender equality, gender disparity, economic participation, education, labor market*

Introduction

The tenet that gender equality in education leads to beneficial outcomes in the realm of economic participation is a long and widely-held belief. It has, in fact, been so entrenched in various cultures that it is almost considered a strong argument for gender equality, in general. However, such a notion needs to be re-examined in light of growing gender disparities observed in the economic and political fronts all over the world. Does gender equality in education, indeed, set the stage for equality in other fronts? Is this a fact or fiction? Thus, this paper examined available data on the subject to respond to these questions.

Irrespective of the existing proof of the

increasing progress in men and women's equality to receive education, there are still noticeable disparities between their access and participation to other opportunities across the globe (Global Gender Gap Report, 2015; Legewie & Diprete, 2012; Bird & Sapp, 2004; Siegel, 2005; Inglehart & Norris, 2000; Erosa, Fuster, & Restuccia, 2005). Moreover, the relationship of educational attainment and economic participation, to be specific in the labor force, appears to be weaker for women than for men due to the influence of intervening variables. These include discrimination by employers on the demand side, or on the supply side to educational attainment in fields of study not oriented to labor market conditions (Klosters, 2014).

Because equality in education takes a while to attain, development in education also exemplifies the wide gap in progress between educational and employment equality. In 2010, while most countries were concentrated around a secondary enrolment ratio of 1, the female/male employment ratio was much more unequal across countries and much lower on average than female/male secondary enrolment rates. Seemingly, equality in education is not sufficient for achieving equality of well-being in livelihoods including employment.

Undeniably, gender is categorically an indicator of social and economic stratification. Accordingly, regardless of one's socioeconomic class, there are systematic gender differences in material well-being, although the degree of inequality varies across countries and over time. As a result, gender inequality is a characteristic of most societies, with males on average better positioned in social, economic, and political hierarchies. Hence, the universal goal of equality should be equal participation of both genders while other spheres should remain sites for difference (Walby, 2003). Furthermore, the degree of connection among gender practices in different domains should be tightly coupled so that equality will be possible through sameness in one domain and equality with the difference in another (The Council of Europe, 1998).

The study's primary objective was to find out whether equality in education results in equality in economic opportunities and participation. It further examined the causes of economic disparities between sexes.

Theoretical Framework of the Study

Interestingly, many countries around the world have made significant progress towards gender equality in education in recent decades. It is often observed particularly in the field of research and national development. However, it is used interchangeably with the word equity, but these terms mean differently. While gender equity refers to treating men and women fairly, gender parity, on the other hand, is attained when the proportion of men and women are the same as they enter the educational system, achieve educational goals, and advance through the different cycles (UNESCO, 2017). However, gender equality connotes that equal opportunities of both genders shall include the realization of their human rights and that their contribution to and benefit from social, political, economic, and cultural development will be equal. The building blocks of equality in education are gender parity and equity (UNESCO 2003).

This research study finds an anchorage on the framework of gender equality.

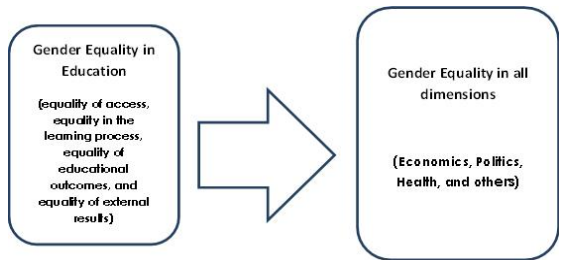

Figure 1. Schematic diagram of the study.

According to the USAID report (2008), there are four dimensions outlined in the framework of gender equality in education, namely, equality of access, equality in the learning process, equality of educational outcomes, and equality of external results.

Equality of access means that both sexes are offered equitable opportunities to gain admission to formal, non-formal, or alternative approaches to basic education. Equality in the learning process indicates that both genders obtain unbiased treatment and consideration and have equal chances to learn. This means that both are exposed to the same curricula, even though the workload may be taught otherwise to accommodate the different learning styles of girls and boys, and be exposed to gender-sensitive teaching approaches and resources. Equality of educational outcomes means that men and women will have comparable opportunities to succeed and to outputs, which are grounded in their individual differences. Also, achievements should be done using evaluation mechanisms that are free of any gender bias. The fourth dimension, equality of external results transpires when men and women have equal status in access and participation to economic, political, social, and cultural activities. Also, this happens when they have equal access, equal benefits from, and equal contribution to goods and resources. This entails that career opportunities, the time needed to secure employment after leaving full-time education, and the earnings of men and women with similar qualifications and experience are equal (Education from Gender Equality Perspective, 2008).

The four dimensions of gender equality are interrelated, but that relationship is multifaceted and not essentially direct. Parity in enrollment and greater gender equality in schooling can, and often do, coexist with inequalities outside of education. In fact, several studies have demonstrated that educational realization for women does not inevitably translate into higher economic prominence or enhanced political involvement as adults (SERNAM, 2004). At the same time, improving the chances of women in employment can give them the economic means to send their children to school. Achieving equality after learners finish their studies and enter the labor market requires interventions that go beyond the education sector (USAID Report, 2008).

Methodology

This study employed data mining using statistical linear models. According to Solarte (2002), data mining is the process of discovering correlations, patterns, trends or relationships by searching through a large amount of data stored in repositories, corporate databases, and data warehouses. The key to developing good statistical models is the identification of the specific aspect of the situation or phenomenon that requires an abstract model. The phenomena in this study are the gender gaps in economic opportunities and participation (EOP) and educational attainment (EA).

Data mining was used to uncover the characteristics of these phenomena and the relationship between them. This process includes fitting the different models into the data. For linear regression models, the coefficient of determination r^2 was used to determine the goodness-of-fit of the model. This statistics determines how close the data are to the fitted regression line. However, the residual plot was checked first to see unwanted residual patterns that indicate biased results more effectively than numbers. When the residual plots pass muster, the numerical results can be trusted and the goodness-of-fit statistics can be used as selection criterion. In general, the higher the R-squared, the better the model fits the data (Frost, 2013). In this study, the researchers used r^2 higher than 95 percent to choose the best model. Scatter plot was constructed to detect the relationship between the variables and observed patterns. Residual plots were likewise checked. Finally, models were generated based on the observed patterns for which theories were formulated.

The study utilized the data set of the World Economic Forum's Global Gender Gap Index of 2015 which is the only existing data during the conduct of the study. The World Economic Forum in 2006 introduced the Global Gender Gap Index as a milieu to capture the degree of gender disparities and to trace their development. The index benchmarks national

gender gaps on economic, political, education, and health criteria; hence it is used in this study because it provides country rankings that allow for operational comparisons across regions and income groups. One (1) is the highest possible score that denotes equality, and the lowest possible score is zero (0) that denotes inequality, thus putting together the scores of inequality and equality benchmarks. The Global Gap Index of 1 indicates equal number of women and men.

The Global Gender Gap Index Report 2015 covered 145 countries, for which 109 of these were included in the report since 2006. Twenty-four countries were from the regions of Asia and Pacific, 26 from Latin America and the Caribbean region, 16 came from Middle East and North America region, 31 from Sub-Saharan Africa, 46 from Europe and Central Asia, and two from North America region. A country must have data available for a minimum of 12 indicators out of 14 that make up the index in order for the country to be included in the report. The report shows that 145 countries closed 95 % of the educational attainment, 96% in health outcome, but only 59% of the economic outcomes gap was closed.

In 2015, eight out of the 24 countries from Asia and the Pacific closed over 70% of the gap, with the Philippines, New Zealand and Australia in the lead. At the bottom end of the rankings, two countries from the region closed less than 60% of the gender gap, Iran and Pakistan. Out of 26 countries in Latin America and Carribean region, 14 countries closed over 70% of the gender gap. Nicaragua, Bolivia, and Barbados occupied the top three spots. Paraguay, the lowest-ranked country in the region closed a little over 65% of its gender gap. In the Middle East and North Africa region (MENA), only Israel closed over 70% of the gender gap, while six countries closed less than 60% of the gender gap. United States and Canada both closed almost 75% of the gender gap. In Sub-Saharan Africa, 14 out of 28 countries closed over 70% of the gender gap, with Rwanda, Namibia and South Africa in the lead. However, Mali and Chad closed less than 60% of the gap. Out of 46 countries in Europe and Central Asia region, five countries closed over 80% of the gap, while 15 countries closed less than 70%.

Results and Discussions

A scatter plot was constructed to detect different patterns of the association between the gender gap of educational attainment and economic opportunities across different countries. Figure 1 shows the scatter plot of this correlation. Several patterns can be observed in the scatter plot that unveiled the characteristics of the phenomena. The patterns are (1) green-colored vertical line, and (2) the red and orange-colored patterns that seem to indicate polynomial or exponential models.

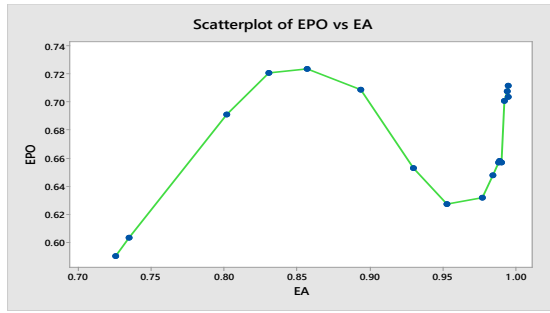

Figure 2. Scatter plot of the raw data of the Gender Gap Index on Economic Opportunities and Participation versus Educational Attainment.

In the figure, the green line suggests no linear relationship between the variables. Equality in educational attainment does not imply gender equality in economic participation and opportunities. Several countries have already attained equality in educational attainment of men and women but have not acquired equality in economic opportunities and participation. Thus, it can be construed that equality in the educational attainment can co-occur with the disparity in the economic opportunities. This result means that many countries have closed the gender gap in access to education, learning process, and educational outcomes but have not closed the gender gap in external results. These external results, according to the four

dimensions of the educational framework (USAID Report, 2008), refer to the economic, social, political activities of men and women including their contribution to, participation in, and benefits from these activities.

The notable cause for such a phenomenon can be better understood by viewing the playing fields in education and the labor market. In schooling, opportunities for men and women are more easily equalized through the development of gender-sensitive curricula. On the other hand, the labor market is an economic forefront where the principal concern is generating revenue and profits. At once, this makes the labor market a more rigid and stereotyped playing field. In other words, the mismatch between the education field and the labor market explains the apparent distortion on the relationship between gender equality in education and economic disparities between the sexes.

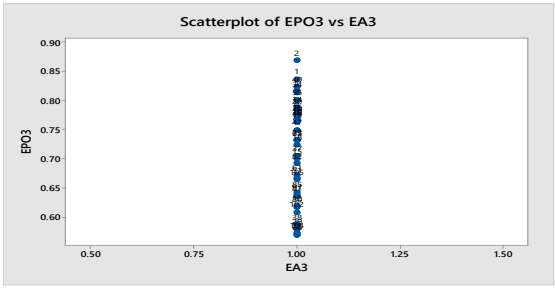

Figure 3: Scatter plot of Pattern 1.

The stereotyping of jobs for both genders can be traced back to the theory of Bem (1981) called the Gender Schema Theory. Her notion elucidates that people adjust their behavior according to the society's concept of what it means to be male and female. Bem added that in various cultures, the society defines the behavior of males and females including the descriptions of the type of jobs that the sexes have to perform. Men have to provide for the family while women have to take care of the households. To some extent, job descriptions for men and women are also extensively defined such that the traditional women's occupations are secretaries, with usual men's jobs, such as automobile mechanic (Lorber, 1997) which results to extreme stereotyping in the workplace.

Many of the countries, indicated by the green line in Figure 1, belong to Europe and Central Asia regions, the regions that control the economic movement of the world led by the European Unions. According to the Regional Report of Social Institutions & Gender Index (2016), there are countries in Europe and Central Asia with high global standards on women's empowerment and gender equality. In fact, many countries from the region show a reverse gender gap in favor of girls regarding the number of years in education and school performance. There is also a reasonable high labor force participation rates in the region. Nonetheless, such development has not eradicated inequalities in gender because restrictions and exclusion of women in many activities are still noticeable. This phenomenon is caused by discriminatory formal and informal laws, social norms and practices that restrain women's access to many opportunities including resources and empowerment. This suggests that gender equality can only be made possible in some circumstances and undoubtedly not in all domains (The SIGI Regional Report for Europe and Central Asia, 2015).

The pattern in figure 3 shows a pattern of instability as indicated by its model, the polynomial function with degree 7. Most of the countries belong to this group are coming from Sub-Saharan African countries. The low income of these countries and other factors including poor quality or education and customary practices contributed to this instability.

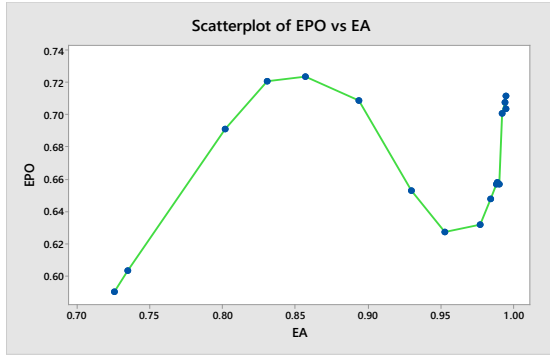

Figure 3. Scatterplot of Pattern 2.

For one thing, the educational system in Sub-Saharan region is considerably weak; first, there are not enough school places available; and second, there is poor quality of instruction (Deutsche, Stiftung Weltbevoelkerung, n.d.). This result suggests that the value of the graduates in these countries is weak such that they may only be employed in the low-paying jobs and never would be in the corporate world. In fact, the UN Women Report held that in Sub-Saharan Africa, more than 89% of women's job is informal which includes all agricultural employment including farming (Kolev, Nowacka, Ferrant, Thim, & Loiseau, 2016). That is why most women in this region are trapped in low paid poor quality work compared to men.

In another, plural legal systems and the recognition of customary law undermine women's lawful rights in the Sub-Saharan area. Discriminatory customs and practices hamper the ability of women to realize these rights despite the fact that these rights are legally guaranteed. For example, there are regulated people's rights that capture inequitable regulations and practices that curtail women's access to public space, their political voice, and their participation in public life. Inequitable laws and practices include lack of freedom of movement, the failure to vote or run for election, and negative attitudes toward women as public figures or as leaders (OECD, 2016).

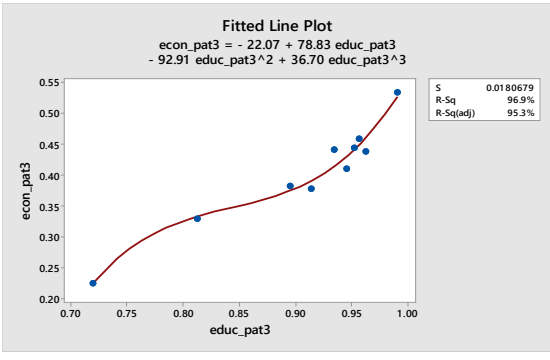

Figure 4. Scatterplot of Pattern 3.

Additionally, the orange line indicates another pattern, which is a polynomial function of degree 3 (cubic function). There is a slight fluctuation but gradual rising in the economic participation. Most countries in this pattern come from the Middle East and North Africa (MENA) Region such as Yemen, Morocco, Egypt, Algeria, Tunisia, and Lebanon.

Most countries in MENA region have adopted and enshrined the principle of equality between men and women in their constitutions and labor legislation. In practice, however, men and women are not always entitled to equal treatment and equal opportunities, and in many countries, employers continue to treat women and men differently in labor law because of gender gaps in MENA countries (OECD, 2011). In particular, women in these countries still tend to work in the traditionally feminized areas and are over-represented in the service sector. Interpretations of what is deemed acceptable or unacceptable jobs for women find reinforcement in discriminatory legal provisions that limit their type and hours of work like in Egypt, Kuwait, Morocco, Yemen, Saudi Arabia, and Syria. Such legal restrictions, along with other barriers, hamper women's access to employment in demanding fields such as the banking sector and as prosecutors.

Moreover, the Middle East and North Africa regions are subjugated by authoritarian regimes. Additionally, nations in these regions rely on Islamic law vis-à-vis family or personal status (Ebersole, Hunter, Lyons, & Wilke, 2014). The Islamic law concerning individual position is based from the concept of gender complementarity instead of gender equality. This complementarity respects the differences of both gender with a corresponding balance of rights and duties based on these differences. Mutual dependence should be emphasized in gender complementarity rather than highlighting gender differences (Mir-Hosseini, 1999). For example, women's roles as wives and mothers must be seen as fundamental to the maintenance of social order just like men's duty which is to provide financially for their family (Treacher, 2008).

The result of this study affirms the report on Chilean women (SERNAM, 2014) that emphasized the relationship of the variables related to gender equality is multifarious and not necessarily direct. The equal opportunities of schooling, therefore, can co-occur with disparities outside of education. Meaning, educational success of women does not automatically denote higher economic status or greater political participation. The equality of gender in the workforce requires more than what the education sector can offer.

Conclusions

This study found out that equality in education does not guarantee equal access to economic opportunities and participation. There are still disparities observed in the latter especially for women. The inequalities are results of gender stereotyping in the labor market and additional factors like discriminatory practices in the workplace which hamper female participation in economic activity and other cultural, ethnic, and religious norms that accentuate gender complementarity rather than gender equality. The results of the study can be the basis for policy makers in crafting policies which will include gender complementarity rather than solely focusing on gender equality. Gender complementarity means recognizing the differences between both genders but with the corresponding balance of rights and duties based on these differences. The mainstreaming of the gender equality in education can be better defined in the context of gender complementarity too. This means gender-sensitive curriculum may be designed such that the awareness of both genders will emphasize their strengths and weaknesses while respecting their differences.

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