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The relationship between women entrepreneurship and gender equality

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Abstract

The degree at which entrepreneurship affects the economy depends on numerous factors, including the quality, gender composition, and type of entrepreneurial activity. Gender equality and female entrepreneurship are key factors in economic development. In order to study the relationship between gender equality and the rate of female entrepreneurship, this paper investigates how gender-related economic development and women entrepreneurial activity are related. We characterize the relationship between gender-related development indices (introduced by the United Nations) and different stages of women entrepreneurial activity (created by Global Entrepreneurship Monitor, GEM) through a correlation analysis. Our results suggest that female entrepreneurial activity is not significantly correlated with gender equality.

Keywords: Entrepreneurship; Women entrepreneurship; Gender equality; Economic development

Background

Economic development cannot be achieved without active participation of women in all aspects of life. There is consensus among scholars that women can play key role in the entrepreneurial phenomenon. The share of women's contribution to the economic and social development depends on the promotion of gender equality and gender blind support from the institutions. Although women constitute about fifty percent of the world population, compared to men, they have less opportunity to control their lives and make decisions (Revenga and Sudhir 2012). Various studies show that entrepreneurs contribute to economic development, job creation, and different aspects of well-being through creative destruction. According to Schumpeter, the entrepreneurial process is a major factor in economic development and the entrepreneur is the key to economic growth. All countries consider entrepreneurial promotion as a crucial policy for sustained employment creation, as well as innovation in products, production processes and organizations (OECD Council Report, 2012). Countries with high total entrepreneurial activity rates are also associated with high female entrepreneurial activity rates (Verheul et al. 2004). The number of female entrepreneurs across the world has been gradually growing in the recent years; researchers and policy makers have been paying more attention to female entrepreneurship (Nedelcheva, 2012). Despite the efforts by some international organizations, e.g., the United Nations and the World Bank, to bridge the gender gap in access to opportunities, gender inequalities are still widely

prevalent and women are deprived of having equal rights with men” (Sarfaraz & Faghih, 2011). Treating women as the second gender means ignoring and underestimating huge potential human resources. Women entrepreneurs can play crucial roles in the process of economic development if they have equal opportunity and access to resources. In spite of the growing number of female entrepreneurs, the share of female entrepreneurship is still significantly low compared to their participation rate (Minniti and Arenius 2003). Especially in Less Developed Countries with high female unemployment rate, for some women who need to work at home, entrepreneurship can be a practical solution to earn income and reduce their unemployment rate and poverty (Sarfaraz et al. 2013). Gender equality is expected to increase the support for female entrepreneurship (Baughn et al. 2006). Entrepreneurship often gives women the flexibility to handle their domestic responsibilities at home, while also providing financial support for their family (Bertaux and Crable 2007). Women’s entrepreneurship has been known as an important unexploited source of economic growth in the last decade (Georgeta, 2012). According to the GEM Women’s Report 2012, an estimated 126 million women were starting or running new businesses and an estimated 98 million were running established businesses. The distribution of female total entrepreneurial activity does not follow the same pattern across regions. While Sub-Saharan Africa shows the highest rate of female entrepreneurship (27%), the female entrepreneurs in MENA region report the lowest rate of 4% among regions. Moreover, region-wise, the greatest gender inequality in Total Early Entrepreneurial Activity (TEA) is in the MENA/Mid-Asia (men four times that of women) while, on average, the greatest gender equality in TEA is in Sub-Saharan Africa and Developing Asia.

Recognizing the factors affecting female entrepreneurship requires knowledge and understanding of women entrepreneurship and its relation with economic development. “Although it is widely acknowledged that entrepreneurship is an important force shaping the changes in the economic landscape, our understanding of the relationship between entrepreneurship and development is still far from complete” (GEM 2008 Executive Report). Some consistent cross-national measurements of entrepreneurial activity, provided separately for men and women by GEM, have paved the way for research and comparative studies across countries. This can help scholars and policymakers to gain knowledge on entrepreneurship by gender and facilitate framework condition for women entrepreneurship. The goal of this paper is to study the relationship between gender equality and female entrepreneurial activity.

Gender, economic development and entrepreneurship

The concept of gender describes the socially created roles, norms, behavior, expectations and activities attributed to women and men. Gender equality has been highlighted as one of the eight Millennium Development Goals, and as a key to achieving the other seven goals by the (United Nations Population Fund, 2013). There is consensus among scholars that women can play key role in the entrepreneurial phenomenon. Gender inequality exists in terms of economic development as well as the rates of entrepreneurial activity. There is a significant gender gap in the entrepreneurial activity rate across the world (Allen et al. 2008). A GEM study of 18 economies from 2002 to 2010 suggests that women’s entrepreneurial activity is lower than that of their male counterparts at different stages of

development (Kelley et al. 2011). However, the likelihood of women engaged in entrepreneurial activity is lower in the developed areas compared to the developing countries (ibid).

Women in developed countries enjoy more equal opportunities than women in developing countries. Different measures of gender equality improve as per capita income increases (Dollar and Gatti 1999). Can one assume that entrepreneurial activity increases as gender equality improves? Or in other words, do more developed nations who enjoy more gender parity display a higher rate of female entrepreneurship? "In general, female TEA rates track similarly to that of males, albeit at lower levels" (Kelley et al. 2013). GEM Women's Report, 2011 shows that over time, the gender gap between entrepreneurs increased in some countries and decreased in others. Overall, as the economies move to a higher level of development, the rate of entrepreneurial activity decreases, regardless of gender. So, in more developed economies that both men and women have different options for employment, individuals seem to be more interested in having secured jobs rather than starting their own businesses. However, in general, the entrepreneurial gap between women and men decreases with economic development level (Kelley et al. 2011). As the economies move from factor-driven stage to efficiency-driven stage and to innovation-driven stage, the gap between men and women entrepreneurs decreases from 5.2 percentage points (lower for women) to 4 points and to 3.4 respectively (ibid).

Apparently, it may be assumed that gender equality may lead to more female entrepreneurship. As a result one may conclude that in the economies where women are more likely to have equal opportunities with men, the prevalence of women entrepreneurial activity is higher compared to the economies where women experience greater rate of gender inequality. The main contribution of this paper is that it gives a comprehensive evaluation of whether gender equality leads to higher rate of female entrepreneurship; the results of our study confirm the results obtained by Baughn et al. (2006) stating that overall, gender equality itself does not predict the proportion of female entrepreneurs.

Methods

This research is an empirical study and attempts to answer the following question: does gender equality lead to more women entrepreneurial activity? The answer to this question is approached by analyzing secondary data, i.e., the Global Entrepreneurship Monitor's (GEM) women indices in entrepreneurial activities and the United Nations (UN) gender-related indices, in order to compare and analyze the gender inequalities reported by the two international organizations. The UN indices to be used here include gender empowerment measure index (GEMI) and gender-related development index (GDI). The GEM indices to be used are those corresponding to women early-stage entrepreneurial activity, women established business owners, and women overall entrepreneurial activity. In this regard, the following hypotheses will be tested by correlation analysis:

- Women early stage entrepreneurial activity is positively correlated with gender empowerment.
- Women established entrepreneurial activity is positively correlated with gender empowerment.
- Women early stage entrepreneurial activity is positively correlated with gender-related development index.

- Women established entrepreneurial activity is positively correlated with gender-related development index.
- Women overall entrepreneurial activity is positively correlated with gender-related development index.

The data used in this research are obtained from the GEM 2007 Women Adult Population Surveys (APS) (Allen et al. 2007) and the United Nations 2007/2008 Development Index. The GEM data set for 2007 includes 41 countries across the globe. From a total of 145,248 individuals interviewed in GEM 2007 APS, 49.9% were women. According to GEM, entrepreneurial activity includes early-stage entrepreneurial activity, established business ownership activity, and overall entrepreneurial activity (see Additional file 1: Appendix).

The UN indices used in this research include:

- Gender empowerment measure index (GEMI), a composite index measuring gender inequality in three basic dimensions of empowerment (i.e., economic participation and decision-making, political participation, and power over economic resources).
- Gender-related development index (GDI), measuring average achievement in the three basic dimensions captured in the human development index (i.e., a long and healthy life, access to knowledge and a decent standard of living) (United Nations Development Program, 2007-2008).

A correlation analysis is employed to examine the relationship between gender empowerment and the following indices: women early-stage entrepreneurship, women established entrepreneurial activity and women overall entrepreneurial activity. Furthermore, the relationship between the gender-related development index and the following indices are also investigated: women early-stage entrepreneurship, women established entrepreneurial activity and women overall entrepreneurial activity will also be obtained through for the 41 GEM member countries in 2007. The results are then analyzed and discussed.

Data analysis

The corresponding UN gender development data and the GEM women entrepreneurial data for 41 GEM member countries have been analyzed by employing SPSS software. The 41 countries are categorized, based on their GDP per capita and GDP growth rate, into 19 low/middle-income countries (including 8 countries in Europe/Asia, 11 countries in Latin America/Caribbean, regions) and 22 high-income countries (defined by GEM2007), in order to differentiate the levels of development.

Results

Tables 1 and 2, show the correlation coefficients between GEM entrepreneurial phases in the three stages of early entrepreneurial activity, the established business owners and the overall entrepreneurial activity and the United Nations' GDI and GEMI indices. However, before analyzing these coefficients, regarding both Tables 1 and 2, it should be pointed out that in this analysis, countries were initially considered as non-Gaussian populations and non-parametric analysis was carried out. Since the results in both cases of parametric and non-parametric analysis for the high income country group

Table 1 Correlation coefficients between Gender Development Index (GDI) and different levels of women entrepreneurial activities

Factors compared	Economic development level	p-value	Pearson correlation coefficient	p-value	Pearson correlation coefficient
Women early-stage entrepreneurial activity and GDI	The high income countries	0.957	0.013	0.000	−0.532
	The Latin American and Caribbean low/middle-income countries	0.026	−0.769		
	The Europe and Asia low/middle-income countries	0.479	−0.254		
Women established business owner-managers and GDI	The high income countries	0.492	−0.159	0.151	−0.234
	The Latin American and Caribbean low/middle-income countries	0.085*	−0.643		
	The Europe and Asia low/middle-income countries	0.935	−0.030		
Overall women entrepreneurial activity and GDI	The high income countries	0.623	−0.114	0.005	−0.442
	The Latin American and Caribbean low/middle-income countries	0.031	−0.753		
	The Europe and Asia low/middle-income countries	0.718	−0.131		

Table 2 Correlation coefficients between and different levels of women entrepreneurial activities and GEMI index*

Factors compared	Economic development level	p-value	Pearson correlation coefficient	p-value	Pearson correlation coefficient
Early-stage entrepreneurial activity and GEMI	The high income countries	0.950	−0.015	0.045*	−0.331
	The Latin American and Caribbean low/middle-income countries	0.681	0.173		
	The Europe and Asia low/middle-income countries	0.927	−0.036		
Established business owner- managers and GEMI	The high income countries	0.113	−0.365	0.108	−0.268
	The Latin American and Caribbean low/middle-income countries	0.937	0.034		
	The Europe and Asia low/middle-income countries	0.846	−0.076		
Overall entrepreneurial activity and GEMI	The high income countries	0.224	−0.285	0.428	−0.124
	The Latin American and Caribbean low/middle-income countries	0.752	0.134		
	The Europe and Asia low/middle-income countries	0.879	−0.060		

and the Europe and Asia low/middle-income country group were similar, hence, the population related to these two groups could be assumed to follow a normal distribution. However, the parametric and non-parametric results for the Latin American and Caribbean low/middle-income country group were different in one case (the relationship between established business owner-managers and GDI - marked by asterisk, in Table 1) and, consequently, the population related to this group was assumed to follow a non-Gaussian distribution. Thus while the analysis was based on the assumption of normal distribution, by considering the Pearson coefficient, occurrence of any differences between the results of parametric and non-parametric analysis was also noted. Meanwhile, in this analysis, the acceptable error level of 0.05 is set for p-value.

Now, it is observed in Table 1 that the p-value related to the Pearson coefficients between early-stage entrepreneurial activity and GDI in the high income country group and the Europe and Asia low/middle-income country group is greater than the acceptable error, which does not signify a relationship between these two parameters within each of these two groups. Rejecting the hypothesis of existing correlation between early-stage entrepreneurial activity and GDI implies that creation of new businesses by women is not necessarily increased when gender discrimination is reduced (GDI is increased); in the other words, early-stage entrepreneurial activity appears to be independent of gender equality across these two groups of countries.

However, the p-value, related to the Pearson coefficients between early-stage entrepreneurial activity and GDI in the Latin American and Caribbean low/middle-income country group, is less than the acceptable error and suggests that the impact of gender discrimination on early-stage entrepreneurial activity in this country group is significant, and that higher gender development index (higher gender parity) leads to less early-stage entrepreneurial activity in the Latin American and Caribbean low/middle-income country group.

Furthermore, as can be seen in Table 1, the overall relationship between early-stage entrepreneurial activity and GDI, across all 41 countries under study (i.e., a larger sample size, regardless of their income levels), also shows an inverse relationship between GDI and early-stage entrepreneurial activity.

The results indicate that in countries with higher level of income (higher degrees of gender parity), the tendency towards starting an entrepreneurial venture diminishes due to the inverse relationship between early-stage entrepreneurial activity and gender development equality. In other words, in these countries, female early-stage entrepreneurial activity declines with improvements in gender development index. This might be due to the fact that in countries with less gender discrimination, women may enjoy equal opportunities (specifically, employment) with their fellow countrymen and have more access to social services that can discourage them to take the risk of starting their own business. This result also agrees with other studies, e.g., that in rich countries, larger companies and public employment usually offer health care and support for working mothers, and hence, reduce women's incentives for startups and self-employment (Allen, 2006).

Moreover, it is worth noting that across the three income level countries, as the level of income increases from low/middle income countries (Latin America/Caribbean and Europe/Asia regions) to high income country groups, less discrimination and lower rates of early entrepreneurial activity may be observed. This also agrees with the results

of other studies, e.g., that as a country develops economically, its growth of nascent entrepreneurship and of new business start-ups tends to decline (Wennekers et al. 2005).

As far as the p-value quantities associated with the Pearson coefficients between women established business owner-managers and GDI is concerned, Table 1 appears to suggest that no significant relationship holds between these two parameters, across all three country groups.

Nonetheless, as explained earlier in this article, while the analysis was based on the assumption of normal distribution, by considering the Pearson coefficient, occurrence of any differences between the results of parametric and non-parametric analysis was also noted. Thus it was observed that the parametric and non-parametric results in terms of the relationship between women established business owner-managers and GDI (marked by asterisk, in Table 1) was different for the Latin American and Caribbean low/middle-income country group. Hence, the population related to this group was assumed to follow a non-Gaussian distribution and the obtained p-value related to Kendall correlation coefficient of non-parametric analysis was less than the defined error level (computed as p-value = $0.048 < 0.05$ and Kendall correlation coefficient = -0.571). It indicates that non-Gaussian distribution hypothesis for countries inside the Latin American and Caribbean low/middle-income country group, signifies a negative relationship between women established business owner-managers and GDI.

Finally, considering the p-value quantities corresponding to the Pearson correlation coefficients between women overall entrepreneurial activity and GDI (as shown in Table 1), no significant relationship can be observed between these two parameters in the high income country group and also in the Europe and Asia low/middle-income country group.

Nevertheless, as Table 1 shows, an inverse relationship seems to exist between the overall entrepreneurial activity and GDI, within the Latin American and Caribbean low/middle-income country group. Moreover, Table 1 also shows that a decreasing relationship is observed between the women overall entrepreneurial activity and GDI, across all 41 countries under investigation, regardless of their income level. These results are not unexpected and confirm the results reported earlier in this article, noting that the overall entrepreneurial activity is comprised of early-stage entrepreneurial activity and established business owner-managers.

Table 2 shows that there is no relationship between gender empowerment measure index (GEMI) and the women entrepreneurial activity in the three stages of entrepreneurial activity (early-stage entrepreneurial activity, established business ownership, and the overall entrepreneurial activity). In each case, the p-value is greater than the defined acceptable error, and hence, within each income level group, no significant relationship is observed between entrepreneurial activities and GEMI. It may imply that women in the economies that provide them more equality in terms of socio-economic and political participation are less motivated to take the risk of starting their own business.

Furthermore, Table 2 appears to show lack of any relationship between GEMI women established business owner-managers and overall entrepreneurial activity, across all 41 countries under study. While in the case of early-stage entrepreneurial activity, the result is different since the p-value is seen to be less than the defined acceptable error (p-value = $0.045 < 0.05$, marked by asterisk, in Table 2). However, for the population related to this group, when assumed to follow a non-Gaussian distribution, the computed p-value related to Kendall correlation coefficient of non-parametric analysis was greater

than the defined error level. Hence, the results show no relationship between the entrepreneurial activity stages (early-stage entrepreneurial activity, established business ownership, and the overall entrepreneurial activity) and GDI across all 41 countries under study.

Discussion

A major goal behind gender study and female entrepreneurship is to identify the factors that prevent women from contributing to socio-economic development. Gender parity and female entrepreneurship may also be considered as links to economic development. However, the rate of female entrepreneurship itself does not seem to provide any significant information on the level of development. In 2012, the highest and the lowest rates of female entrepreneurship were observed in Zambia (40%) and Pakistan (1%), both classified as factor driven economies (Kelley et al. 2013), suggesting that there is no general prescription for relating the rate of female entrepreneurship to the level of economic development. This implies that female entrepreneurship in each country has its own characteristics and needs to be studied in its own socio-economic context. For instance, while the low rate of female entrepreneurs in Pakistan may be attributed to significant gender gap in educational attainment, women economic participation and opportunity, the low rate of female entrepreneurs in high income economies may be attributed to the availability of job opportunities. Enjoying more gender equality and having access to various job opportunities appear to reduce women's motivation in more developed nations.

Our study shows no correlation between the entrepreneurial activity stages (early-stage entrepreneurial activity, established business ownership, and the overall entrepreneurial activity) and Gender Development Index across all 41 countries under study. This suggests that gender parity itself does not lead to more women entrepreneurship and gives the hint that entrepreneurship is a complex phenomenon that "requires multiple theoretical lenses to be understood" (Landstrom & Lohrke, 2010). So, in the context of female entrepreneurship, more comparative studies are needed to uncover the hidden aspects of the reasons behind different rates of women entrepreneurs, the quality and longevity of their businesses, and their contribution to economic development. The interaction of different institutions (formal and informal) and individuals may create an atmosphere that encourages or discourages female entrepreneurial activity in a country.

Our study confirms the study by Baughn et al. (2006) that overall, "gender equality itself does not predict the proportion of female entrepreneurs". It is important to note that the reasons behind the lack of female entrepreneurial activity in developing economies seem to be different from the developed economies. One could argue that women in developed countries are more likely to find an appropriate job than women in developing areas who are less likely to be absorbed in the labor market due to gender issues and unfriendly entrepreneurial environments. "As economies develop entrepreneurship tends to decline, because society provides more employment options (Kelley et al. 2011). Thus, it appears that in developed economies, gender equality increases women's opportunities to become entrepreneurs or be employed, whereas in developing countries, gender inequality impedes women's economic contribution both in starting a business and in becoming employed. The importance of fostering female entrepreneurial activities seems to be more

essential in developing countries with high gender gap in employment. For instance, in Turkey, the unemployment rate among university-educated women is more than 3 times higher than that of university educated men; nearly 3 times higher in Iran and the United Arab Emirates, and 8 times higher in Saudi Arabia (Roudi, 2011). Hence, it can be concluded that the low rate of female entrepreneurship in developed economies does not necessarily imply the low rate of female contribution to the economy whereas, the low rate of female entrepreneurship in developing economies accompanied by high women unemployment rate may indicate the low contribution of women in the socio-economic development.

Conclusion

The increase in the role of women in economic development and their greater presence in social activities, calls for investigating various dimensions of women entrepreneurial activity in the context of development. Examination of the relationship between different stages of entrepreneurial activity, and Gender Development Index shows that there is no significant relationship between early-stage entrepreneurial activity and Gender Development Index in the high income country group and the Europe and Asia low/middle-income country group. Rejecting the hypothesis of existing correlation between early-stage entrepreneurial activity and GDI means that the tendency towards starting a business is not necessarily increased when gender discrimination is reduced (GDI is increased). In other words, early-stage entrepreneurial activity appears to be independent of gender equality across these two group countries. However, the impact of gender discrimination on early-stage entrepreneurial activity in the Latin American and Caribbean low/middle-income country group might show some significance compared to the other two groups. Regardless of the levels of income, there appears to be an inverse relationship between the tendency toward starting an entrepreneurial venture and gender development equality.

Considering all country groups, no significant relationship holds between established business owner-managers and GDI. Nevertheless, comparing each group of the three income level countries, as the level of income declines from high-income country groups to low/middle-income countries (Europe/Asia and Latin America/Caribbean regions the Europe and Asia), a negative relationship between women established business owner-managers and GDI may be observed. An inverse relationship seems to exist between overall entrepreneurial activity and GDI within the countries in the Latin American and Caribbean low/middle-income country group. A decreasing relationship is also observed between the overall entrepreneurial activity and GDI, for all 41 countries under investigation, regardless of their income level. Finally, the results show no relationship between the entrepreneurial activity stages (early-stage entrepreneurial activity, established business ownership, and the overall entrepreneurial activity) and GEMI, across all 41 countries under study.

A major future direction in this line of research is to seek an answer to the following question: Why are the highest and the lowest rates of female entrepreneurship in the economies of the developing countries and why does the most significant gender inequality in TEA appear in MENA/Mid-Asia, while on average, the greatest gender equality in TEA is in Sub-Saharan Africa and Developing Asia?

Additional file

Additional file 1: Appendix.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

LS designed research. AAM collected data. NF and AAM analyzed data. LS and NF wrote the paper. All authors read and approved the final manuscript.

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