Research Africa Network (RAN)

RAN Working Paper

WP/15/021

Women in Power and Power of Women: the Liberian Experience


Oasis Kodila-Tedika
University of Kinshasa
Department of Economics, DRC
oasiskodila@yahoo.fr

Simplice A. Asongu
African Governance and Development Institute,
P.O. Box, 8413,
Yaoundé, Cameroon.
asongusimplice@yahoo.com
Research Department

Women in Power and Power of Women: the Liberian Experience

Oasis Kodila-Tedika & Simplice A. Asongu

June 2015

Abstract

Do women really improve conditions for gender equality after becoming heads of states? This study investigates if having a woman at the helm of country’s decision making processes leads to better indicators on women conditions. Using time series observations for the period 2000-2011, we test the hypothesis with the Liberian experience. We analyse six main gender indicators, namely: gender equality, equality of representation in rural areas (basic community), economic rights of women, participation of women in active life, political rights of women and legislations for the protection of women against violence. Our findings do not show substantially significant changes between the first mandate of Ellen Johnson Sirleaf and the period before. In essence, we only notice positive and statistical ruptures for equality of representation in rural areas and the economic rights of women. Policy implications are discussed.

Keywords: Gender; Female politicians; Institutions; Africa; Liberia; Ellen J. Sirleaf.

JEL Classification: J16 ; O15 ; O17 ; O55 ; P48
1. Introduction

The political role of women has increasingly been at the centre of gender studies since the beginning of the third millennium. Corresponding narratives have included: (i) issues of engaging women in politics (Ross, 2000); (ii) more emphasis on female political economics (Prugl, 2002); (iii) overcoming gender barriers to the political arena in post-transitional democracies (Franceschet, 2001); (iv) strategies of increasing female political representation (Huang, 2015) through party quotas (Tran, 2015), legislative quotas (Yoon & Shin, 2015) and linkages between the opposition and women movements (Gaunder, 2015); (v) gender issues in post-conflict societies like, analysis of violence on women during conflicts (Hansen, 2000), reconstruction processes and enhancement of the political voice of women (Corin, 2000), imperative of acknowledging women as actors and not victims (Karam, 2000) and need for post-war gender-inclusiveness as in revolutionary struggles (Campbell, 2006); (vi) welfare effects of female political action (De Volo, 2003) and (vii) women in the transformation of African political landscapes (Trip, 2003). This line of inquiry focuses on the last-three strands.

Do women really improve conditions for gender equality after becoming heads of states? This question is increasingly gaining scientific attention. Some gender differences have been noticed in household management, with women having an edge over men in, *inter alia*, the: (i) training of children and development of their potentials and (ii) purchase of goods of primary necessity (Thomas, 1990, 1994; Phipps & Burton, 1998; Hoddad & Hoddinott, 1994; Hoddinott & Haddad, 1995). More recently, a plethora of studies have linked sex to institutional problems and mechanisation of women. According to Beaman et al. (2009), the presence of women in power has radically changed the perception of the electorate on the effectiveness of women in positions of authority. The election of a female as the head of a village (pradhan) has reduced stereotypes associated with the female sex among villagers of masculine sex in India. Another study by Beamane et al. (2012) has established that where a woman has never held a position of village-head, the parental value-perceptions of differences between boys and girls are wide. Women as village-heads engender the following positive externalities, *inter alia*: (i) increase the aspirations of parents towards their female children and (ii) boost self-confidence and ambition among girls. Pande and Topalova (2013, p. 15) have emphasised that when women occupy decision-making positions or are endowed with responsibilities of authority, they can change the aspirations of young girls by taking measures which, among others: enable women to have equal opportunities as men and promote successful women in society as role models. These two instruments coexist and
cannot easily be dissociated. The emphasis is consistent with Clots-Figueras (2012) who has argued that the causal nexus is in the following order: the gender of politicians affects the level of education of individuals growing in quarters where such politicians are elected.

More nuanced results have also been documented in the literature. Ferreira and Gyorko (2011) and Campa (2011) do not find any significant influence from increasing female representation in the United States of America (USA) towns and Spanish municipalities respectively. According to Ferreira and Gyorko, the sex of the mayor (from the results of political elections) has no significant effect on the size of the local government, spending composition, rate of employment and level of criminality. Clots-Figueras (2011) also present interesting results. The author’s work suggests that female-politicians from unprivileged or cast tribes invest more in social (education and health) and distribution on the one hand and on the other hand, in laws favoring the economic rights of women. On the contrary, female legislators from superior or privileged casts do not have an apparent effect on the laws favourable to women, and show less concern over social issues, compared to their counterparts from unprivileged casts. Kodila-Tedika (2013) shows that female representation leads to an improvement of gender equality in political rights; but unfortunately, do not influence the legislature on violence against women and a simple correlation with economic rights of the African woman.

In light of the above, there is an apparent ambiguity in the literature on the gender-equality consequences of female political representation. The present line of inquiry takes the issues of female representation in political circles into account. The study closest to the current positioning is Kodila-Tedika (2013) who has investigated a cross-section of African countries. We incorporate some unexplored dimensions and recommendations from the study, notably: the need to engage case studies in investigating the hypothesis. Here, we are trying to understand the incidence of a female African head of state on institutional and gender indicators. Concretely, we use time series gender-related and female rights indicators of the Republic of Liberia to assess the direct and indirect (or image) effects. The choice of Liberia is motivated by the fact that, it is the only African country within this scope for which data is available for exploration. It should be noted that: (i) for the Malawian experience with Joyce Banda (April 2012 to May 2014), data is still not yet available and (ii) the president of Mauritius, Ameenah Gurib-Fakim has only been in office since the 5th of June 2015. Moreover, in relation to the Malawian experience, the 2015 World Development Indicators published by the World Bank on April 15th display missing data for the period 2012-2015 for many indicators. It is important to also note that we are positioning the line of inquiry on
Africa as opposed to ‘rest of the world’ examples of female leaders essentially because the continent is currently host to countries with very high gender gaps (Sedghi, 2013).

Before we engage the empirical analysis, it is relevant to devote some space to presenting some insights into President Ellen Johnson Sirleaf’s position on issues motivating this inquiry. She is an economist and 2011 Nobel peace laureate who was elected as the Liberian head of state on January 16th 2006. Hence, she is the first female to have been elected into office in Africa. Her curriculum vitae reveal positions of influence in decision-making circles that favour female empowerment and gender equality.

According to Ford (2011), Sirleaf (ESJ) spent her early life in Monrovia. She studied at the Harvard’s John F. Kennedy School of Government after completing a program in economics at the College of West Africa in Monrovia. She was imprisoned during the government of Samuel Doe in the 1980’s. During her prison term, she was victim of attempted rape by a soldier. Moreover, following her release from prison, she fought Liberian dictators while in exile in the 1980s and 1990s. Her attempt at returning to Liberia in the 1990s was finally successful in 2003.

According to Ford (2011), Sirleaf has devoted her life to challenging mainstream masculine-dominated African politics. As the first president of Liberia, she has been an inspiration to women in the country. According to Ford, she clearly articulated her priority in empowering women during her inauguration speech, by pledging to empower Liberian women in all spheres of national life. In light of above qualitative emphasis, it is reasonable to expect significant differences in gender equality during her mandate.

Our contribution to the literature is to first of all assess the tendency in Africa without pre-notions. However, the intuition for the impact of female leadership is based on the notion that women have some quasi-social preferences (e.g. World Bank, 2003; May et al., 2014). These preferences endow women with some bias towards results that favour female empowerment. It is based on this intuition that we think that ESJ can leverage on her gender to empower women in Liberia. Moreover, she has been recognised as a defender of women rights.

In our view the fundamental concern is to know why we should expect positive results on women empowerment from a female African head of states. The answer to the question is that, in addition to ESJ’s history of active participation in activities destined to empower the female gender, women have more social preferences compared to men. They spend comparatively more on health and education for example (World Bank, 2003). Hence, when it comes of politico-economic policies, we also expect women to engage more in activities that
are sympathetic to gender equality. Therefore, in the light of the above, we can hypothesize that a woman like president ESJ in power is very likely to favour the improvement of conditions of women.

To the best of our knowledge, the literature has not from a specific angle focused on the issue of factors that hinder female elected officials from engaging in the substantive representation of other women. As far as we know, Sung (2003) and Cheung and Hernandez-Julian (2006) are some of the rare studies that have engaged the role of women with influential political positions on a country’s institutions. Unfortunately, they are focused on corruption and not specifically on women.

The need for female empowerment and gender equality has strong implications for contemporary African development for at least a twofold reason. On the one hand, gender equality is crucial in the fight against poverty and on the other hand, the April 2015 publication by the World Bank on attainment of Millennium Development Goals (MDGs) concludes that poverty has been decreasing in all regions of the world, with the exception of sub-Saharan Africa (Asongu & Kodila-Tedika, 2015; Asongu & Nwachukwu, 2016ab). The narrative sustains that about 45% of countries in the sub-region are off-track from attaining the MDGs extreme poverty target. Liberia features prominently among these lagging countries. But why is gender inequality important in the responsiveness of extreme poverty to growth. Consistent with Asongu and Kodila-Tedika (2014) from the Fosu conjectures, the responsiveness of poverty to growth is a decreasing function of inequality, essentially because the growth elasticity of poverty is lower than the inequality elasticity of poverty. In more specific terms: “The study finds that the responsiveness of poverty to income is a decreasing function of inequality” (Fosu, 2010a, p. 818); “The responsiveness of poverty to income is a decreasing function of inequality, and the inequality elasticity of poverty is actually larger than the income elasticity of poverty” (Fosu, 2010b, p. 1432) and “In general, high initial levels of inequality limit the effectiveness of growth in reducing poverty while growing inequality increases poverty directly for a given level of growth” (Fosu, 2011, p. 11).

The rest of the study is organised as follows. Section 2 briefly discusses the data and methodology. The empirical analysis is covered in Section 3. Section 4 concludes.
2. Data and Methodology

2.1 Data

We use: gender equality, equality of representation in rural zones, the economic rights of women, the participation of women in active life, the political rights of the female gender, and violence against women. These measures are broadly consistent with the four key variables used for the Global gender gap index, notably: access to education, health, political engagement and economic participation (Sedghi, 2013).

The first or gender equality variable is obtained from the World Bank’s International Development Association (IDA) Resource Allocation Index. This variable evaluates the level at which a country has legislated and adopted institutions and programs destined to enforcing the respect of rights and policies, which include, \textit{inter alia:} (i) promoting equal access by men and women to opportunities of human capital development; (ii) promoting equal access by men and women to economic and production resources and (iii) according to men and women equal status and protection before the law. As to what concerns the dimension of human capital development, emphasis is placed on: (i) education with the completion of the primary cycle and access to the secondary, (ii) access to obstetrician medical services and (iii) family planning as well as the fertility rate of adolescents. With respect to access to economic and production rights, the following are considered: participation in the work force, land title and property and inheritance rights. In relation to equal status and protection before the law, emphasis is placed on: individual and family rights, personal security (violence against women and sexual molestation) and political participation. This indicator ranges from 0 to 6, with higher values indicating better results.

The second variable on equal representation in rural areas is obtained from the Performance-based Allocation System (PBAS): Rural Sector Performance Assessment (RSPA). The indicator measures the capacity of laws, politics, institutions and practices to promote an equal representation among men and women in local decision making processes. It also evaluates the representation framework of women in rural areas (producer associations, cooperatives…etc) or the existence of legal or effective barriers (contributions and obligation of land ownership…etc). The indicator also varies from 0 to 6, with higher values indicating better scores.

The third variable on women economic rights measures a plethora of human rights criteria recognised at the international level, notably: equal pay/salary; freedom in

\footnote{1 The description is consistent with that provided by the Mo Ibrahim Foundation. It is the same logic with the indicator that follows.}
professional choice or employment without the need for spouse or masculine-parental approval; parity in recruitment and professional promotion practices; employment security (maternal leave, unemployment advantages, non-arbitrary firing from work…etc); non-discrimination by employers; no sexual harassment at work; right to nocturnal work; right to exercise risky professional activities and the right to work with security forces (army or police). This variable ranges from 0 to 3, with higher values indicating better results. It is important to note that, some African countries have missing observations. The missing observations are also filled with estimations from the Mo Ibrahim Foundation. The measure is obtained from the Cingranelli and Richards (CIRI) Human Rights Data Project.

The fourth variable on female participation in active life is obtained from the World Bank Development Indicators. This indicator measures the proportion of females (15 years and above) that is economically active (participation in the production of commodities during a given period). It ranges from 0 to 100, with higher values showing better performance.

The fifth proxy on the political rights of the female gender examines many rights acknowledged at the international level, notably: the right to vote; the liberty of candidacy for a political office; equality in governmental functions and the right to belong to a political party. The variable ranges from 1 to 3, with higher values indicating better results. Corresponding missing data is addressed by estimations from the Mo Ibrahim Foundation on economic rights. The measure is also obtained from the Cingranelli and Richards (CIRI) Human Rights Data Project.

The last measure on legislation on violence against women is obtained from the Social Institutions and Gender Index (SIGI), the 2009 Gender Institutions and Development Database (GID-DB) and the Social and Welfare Statistics. These are also extracted from the Organisation for Economic Co-operation and Development (OECD) statistics. This indicator provides quantified information related to domestic and sexual violence as well as sexual molestation. The first indicator is not available for Africa. To address the shortcoming, we use estimations provided by the Mo Ibrahim Foundation on economic rights. The variable ranges between 0 and 1, with values closer to 1 indicating the worst performance by countries. We expect her presidency to influence legislation on violence against women in particular and improvement of women rights in general for three main reasons. First, consistent with the literature, females have more social preferences (World Bank, 2003). Second, international expectations were high from the first female head of state in Africa. Third, the president has had a history of fighting against violence on women. The expectations are consistent with a stream of literature on the subject. Notably, that: (i) women’s policy and movement agencies
can provide effective mechanisms through which women’s perspectives can be expressed (Weldon, 2002), especially when they leverage on international agreements and conventions (Htun & Weldon, 2013) and (ii) the effectiveness of such expressions and subsequent changes depend on state capacity (Htun & Weldon, 2010) and entrenchment of old law that discriminate against women (Htun & Weldon, 2011).

The empirical evidence is based on time series data for the period 2000 to 2011 that is divided into two sub-samples. The first sub-sample is for the period before the election of Ellen Johnson Sirleaf (hence, BEJS). The second sub-sample is the period of her first mandate 2007-2011 (FEJS). The BEJS period is characterised by substantial political strife. This can be articulated by the high number of presidents\(^2\).

The choice of the period is imposed on us. We aim to compare the period before Sirleaf’s presidency with the period during her presidency. The data was collected when Sirleaf’s first mandate was over. The choice of the period before her mandate is motivated by the need for a symmetry between the periodicity during her first mandate and periodicity before her first mandate. Given that her first mandate lasted 5 years, the corresponding period before is also 5 years. Moreover, the comparative periodicities are chosen because of constraints in data availability and the political context. The 11 year time series is appropriate for the statistical techniques employed within the framework of this line of inquiry. Moreover, in addition to the test of difference in means, we employ other complementary tests.

It is important to note that the indicators are quite different. While some can easily be altered in the short-run by any president (female or male), political-related indicators may depend on the nature of the president and other circumstances. Therefore the effect of a presidency on the indicators also depends on how they are measured.

2.2 Methodology

The objective of this study is to assess to what extend the political influence of a female head of state can be translated into changes in some gender indicators. The empirical strategy consists of first calculating the averages of every indicator for the two underlying sub-samples. To these averages, we apply the ‘difference-in-means’ test. We also employ a plethora of tests for robustness purposes, notably: Pettitt (1979), the Standard normal

\(^2\)Accordingly, Charles Taylor ruled the country from August 2\(^{nd}\) 1997 to August 11\(^{th}\) 2003. After he stood down from office, Moses ZehBlah, then vice-president ensured the interim till October 14\(^{th}\) 2003 when the transitional government supported by the United Nations was put in place. This transition was led by Gyude Bryant until the election of Ellen Johnson Sirleaf.
homogeneity test (SNHT) of Buishand (1982) following Alexandersson (1986) and the assessment of Von Neumann (1941)\(^3\).

The Pettitt test is a non parametric test which does not necessitate any hypothesis on the distribution of data. It is an adaption of the Mann-Whitney test based on ranks, which enables the identification of the time during which change occurs. The SNHT test is based on the null hypothesis that reduced-centred relations between the observed values of the series and mean follow a normal distribution, \(N(0,1)\). The Buishand test is based on the null hypothesis that variables follow one or many distributions having the same mean. Finally, the report of Von Neumann is based on the sum of differenced squares between two successive values in a series. Graphs corresponding to these tests are presented in the Appendix in order to enhance readability. Beyond the statistics, the presence of two means (\(\mu_1\) and \(\mu_2\)) implies that a rupture has been detected in the series. The detected two periods are still indicated by different lines which are apparent in the graphs.

3. Empirical results

3.1 Evidence of Substantive Representation of Women (SRW)

Based on the results, evidence of substantive representation of women (SRW) is apparent in the second and third indicators, namely: equality of representation in rural areas and economic rights for women. First, the second indicator on ‘equality of representation in rural zones’ illustrates the issue of fundamental gender inequality, which has often been neglected. At this level, we notice a significant statistical difference. The FEJS period presents relatively better results. In essence, taking into consideration the scale of measurement, the risk of minimising this deviation is important. Hence, such minimisation will be a practical error. As concerns the Pettitt test, the p-value clearly shows that the null hypothesis for a homogeneous series is rejected. Hence, we can establish that some deviation occurred between the two parties in the time series. Accordingly, the risk of rejecting the null hypothesis while it is correct is less than 0.01%. The graph associated with this result shows this deviation. In fact, the rupture occurred well before President Sirleaf came to power. As concerns the SNHT test, the risk of rejecting the null hypothesis (H0) when it is correct is less than 1.16%. With regard to the Buishand test, the risk of rejecting the null hypothesis while it

---

\(^3\)We employ the XLSTAT-Time software for the last-four tests. The alternative hypothesis of these tests is a unique deviation. For all the tests, XLSTAT reveals p-values using re-sampling by Monte Carlo. We approximate the calculations because exact computations are either impossible or extremely time-consuming.
is correct is 0.01%. Von Neumann’s rapport shows that the risk of rejecting the H0 when it correct is less than 0.17%.

If from a general perspective, these tests effectively confirm some rapture in results, a different scenario is apparent when it comes to determining the point from which changes occur in the time series. The Pettitt is in favour of 2004, while those of SNHT and Buishand propose 2007. If this is the case, then Ellen Johnson Sirleaf should be responsible for changes in the series. It is important to note that she has promoted micro-finance projects for the female gender, built market halls and introduced property laws to enable women obtain what they are legally entitled-to (Ford, 2011).

Second, the third indicator on economic rights converge all the deviation tests. There is a point above which this indicator is different. The point is situated around the year 2007, which is after Ellen was elected into office. The results are statistically important because the BEJS and FEJS are different. Hence, we cannot reject the hypothesis that the score realised during the first mandate of the president Sirleaf is higher relative to the period before her.

While Liberia is in the process of post-conflict reconstruction, with discussions from the government (which are sometimes translated in actions) sexual violence remains recurrent. Liberia was one of the first countries to implement the UNAIDS programme for girls and women. The programme sets strategic priorities for the defence of girls’ and women rights. It also ensures gender equality in the fight against HIV. Some studies have established that 29% of women (married women included) have been victim of physical and sexual violence perpetrated by a male partner during the past 12 months.

A number of points explain the significant role of president EJS in the discussed evidence of SRW. She is affiliated to many influential organisations, notably: *Alpha Kappa Alpha Sorority, Incorporated*. It is logical to infer that she is conscious of the importance of gender equality because she is a founding member of the International Institute for Women in Political Leadership. Moreover, she was the 2011 recipient of the ‘African Gender Award’ which recognises her achievements in promoting: (i) free education for children and (ii)

---

4 The African Gender Awards is every two years, awarded by a Selection Committee presided by Mrs Gertrude Mongella, former president of the Pan-African parliament and is composed of: civil society personalities, a representative of the United Nations Economic Commission for Africa (UNECA), a representative of the African Union and the press. The committee evaluates improvements that African countries have made on the implementation of the Declaration for Gender Equality in Africa.

5 We recall that during her first mandate, she put in place a national policy for female education which was facilitated by the United Nations Children’s Fund (UNICEF) and applauded by many international partners which emphasised the following recommendations: (i) attain the second objective of the Millennium Development Goals (MDGs) on development by guaranteeing free and compulsory primary education for all and a reduction of school fees by 50%; (ii) more recruitment and training of female teachers; (iii) the putting in place of scholarly orientation counsels for girls; (iv) ending impunity benefit by teachers from sexual violence and
gender empowerment through the establishment of a fund entitled ‘Market Women’s Fund’. Her position on the issue investigated by this study can be partly motivated by her view on ‘women and gender’ during an interview with the African Development Bank (AfDB) “To ensure that they get the best education possible – quality education – to enable us to increase the level of our participation, particularly among women in our society at all levels, to ensure that we become more competitive nationally and regionally. My message is to continue to pursue aggressively the skills, the education, the capacity that will make Africa as competitive in the world as any other region” (AfDB, 2013)\(^6\).

It is important to note that, in spite of her efforts towards improving the lives of Liberians, her most significant achievement has been the negotiation of a 5 billion USD write-off of foreign debts, which has engendered a plethora of positive externalities, notably: (i) a sixfold rise in the government’s annual budget and (ii) the possibility of the country to borrow again (Ford, 2011). These should ultimately have contributed to the significant effects on two factors discussed above.

### 3.2 Absence of Evidence on Substantive Representation of Women

From the findings, the absence of SRW is apparent in the first, fourth, fifth and sixth indicators, notably: gender equality, participation of women in active life, political rights of women and legislations for the protection of women against violence.

First, the gender equality indicator does not validate the hypothesis that EJS provided SRW. Accordingly, the first indicator on gender equality which is the major variable does not enable us to establish that her first mandate resulted in enhanced gender equality. In essence, no significant evolution of this indicator is found between the period before (BEJS) and her first mandate (FEJS)\(^7\). This indicator may be too broad to provide the necessary information because of conflation in changes, essentially because it embodies driving dimensions on gender equality. Hence, we consider some gender dimensions that could be influenced directly (new laws, effective application of law) or indirectly (image effect). It is interesting to note that the equality variable encompasses a huge range of activities, some of which a


\[^7\] The results are not provided but are available upon request. The same tendency is noticed when the African Development Bank indicator of gender equality is used.
president might more easily directly influence (e.g. equal protection under the law) and some of which seem far more difficult to influence (e.g. fertility rate of adolescents). While an educational policy is contained in the indicators, it is reasonable to infer that the president’s gender-inclusive policies did not significantly outweigh other inclusive policies discussed in the Data section. This is because EJS introduced free education for students in the first to sixth grades, which resulted in a 40% increase in the enrolment of girls (Ford, 2011).

Second, the fourth indicator concerns the participation of women in active life. The question we ask is whether women have become more active under the presidency of Ellen Johnson Sirleaf? Even if the difference between the two periods appears weak, the two periods are nonetheless statistically different. For Buishand, the p-value obtained is less than 0.0001 and hence, the null hypothesis is rejected. It can therefore be established that there is an interval of time t from which the mean of variables change. The risk of rejecting H0 meanwhile it is correct is less than 0.01%. The same conclusion can be inferred from other tests related to series homogeneity, even though there is some divergence on the year of rupture. Meanwhile, in all cases, we cannot firmly establish that the impulse was during the first mandate of Sirleaf (or in FEJS). Whereas, Sirleaf has promoted gender equality by improving the presence of women in security forces and the government (see Ford, 2011), this may not have been enough to significantly influence the participation of women in active life.

Third, on the political rights, when it comes to women rights, we observe a significant difference between the two periods, albeit with a low level of confidence. The lifetime of the rapport is 2 when the mean is constant. The corresponding p-value is 0.488 and we cannot reject the null hypothesis on data homogeneity. This finding is consistent with the preceding results based on other tests which have established the absence of rupture. The risk of rejecting H0 when it is correct is 48.75%. As with the economic rights above, it seems feasible that a female president could change the legal right to do certain things in a single term (e.g. pass a law allowing women to vote) but other things mentioned here seem more difficult for an elected leader to influence in the short run. The ‘equality in governmental functions’ refer to *inter alia:* the right to serve in public positions, quotas for women in government office and gender parity in who holds certain offices. While a president might be able to pass quotas or laws (subject to the party political caveats mentioned above) it would seem harder for a president to alter the actual composition of the public service.

Fourth, the last (sixth) indicator on legislations for the protection of women against violence was expected to reveal quite interesting results because it entails quite some interesting variables, notably: emotion and the seriousness of problems. It is also a dimension
that could lead to less ambivalence, at least from an official framework within society. It relates to violence afflicted on women. Here again, we do not notice any change. The case of Ruth Berry Peal constitutes a good illustration of a problem at this level. She was captured and forced to sustain female genital mutilations (FGM)\(^8\) by some members of *Sande*\(^9\). Unfortunately, the legal process against the perpetrators has not been smooth.

The case of Ruth Berry Peal above is unsurprising because a female president may not be enough to change outcomes. In essence, it is a lot to expect that in a just a few years, a woman’s presidency would substantially reform and change deeply entrenched patterns that culminate in domestic violence. The concern is still prevalent in Nordic countries which have had generations of women in elective office. Whereas the underpinning hypothesis is that the presidency of EJS would have direct and indirect effects of diminishing female violence, we do not expect that female violence would disappear completely. However, we expect some significant reduction as a result of the presidency. As concerns a direct effect, we expect EJS to promulgate laws that limit violence against women. With regards to the indirect impact, the mere presence of EJS as a president should improve the image of women to the point that there would be more respect for the woman as well as citizenry demand for more laws on the protection of women against violence. Hence, we expected some significant change in the mean of results or in the rupture of tendencies. Unfortunately, the mean of results have not changed significantly.

According to Ford (2011), in response to a startling statistics claiming that 75% of women were abused sexually and raped during the civil war, she introduced more stringent rape laws, though a special court for this purpose is proving to be ineffective. Accordingly, whereas conviction rates are low and rape is still prevalent in the country, there are more cases of rape being tried in courts.

---

\(^8\) According to ‘Egalité Maintenant’, more than 58.2% of Liberians have been victims of FGM.

\(^9\) It is a clandestine society with substantial political influence, composed of women who encourage and practice FGM within the framework of femininity initiation rites.
### Tableau 1. Statistical Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Gender equality</th>
<th>Equality of representation in rural zones</th>
<th>Female economic rights</th>
<th>Participation of women in active life</th>
<th>Political rights of women</th>
<th>Legislation on violence against women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BEJS</td>
<td>FEJS</td>
<td>BEJS</td>
<td>FEJS</td>
<td>BEJS</td>
<td>FEJS</td>
</tr>
<tr>
<td><strong>Tests</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Means</strong></td>
<td>2.5</td>
<td>2.5</td>
<td>2.08</td>
<td>3.02</td>
<td>0.67</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Difference-in-means test</strong></td>
<td>Diff=-0.937</td>
<td>Diff=-0.933</td>
<td>Diff=-0.423</td>
<td>Diff=-0.4</td>
<td>Diff=-0.933</td>
<td>Diff=-0.888</td>
</tr>
<tr>
<td></td>
<td>t= -3.2641</td>
<td>t= -2.888</td>
<td>t= -6.798</td>
<td>t= -1.633</td>
<td>Pr(T &lt; t) = 0.012</td>
<td>Pr(T &lt; t) = 0.010</td>
</tr>
<tr>
<td><strong>Pettitt Test</strong></td>
<td>No change during the period</td>
<td>K= 30.000</td>
<td>t= 2004</td>
<td>K=24.000</td>
<td>t= 2007</td>
<td>K=30.000</td>
</tr>
<tr>
<td></td>
<td>p-value=&lt; 0.0001</td>
<td>p-value=&lt; 0.0001</td>
<td>p-value=&lt; 0.0001</td>
<td>p-value=0.222</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SNHT Test</strong></td>
<td>No change during the period</td>
<td>T0= 7.383</td>
<td>t= 2007</td>
<td>T0=6.944</td>
<td>t= 2007</td>
<td>T0=8.297</td>
</tr>
<tr>
<td></td>
<td>p-value= 0.012</td>
<td>p-value= 0.007</td>
<td>p-value=0.002</td>
<td>p-value=0.447</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Buishand Test</strong></td>
<td>No change during the period</td>
<td>Q=4.209</td>
<td>t=2007</td>
<td>Q=4.082</td>
<td>t=2007</td>
<td>Q=4.989</td>
</tr>
<tr>
<td></td>
<td>p-value= 0.007</td>
<td>p-value= 0.011</td>
<td>p-value=0.0001</td>
<td>p-value=0.211</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rapport of von Neumann</strong></td>
<td>No change during the period</td>
<td>N=0.562</td>
<td>p-value=0.002</td>
<td>N=0.611</td>
<td>p-value=0.001</td>
<td>N=0.102</td>
</tr>
</tbody>
</table>

We cannot fail to acknowledge changes that have occurred during the presidency of Ellen Johnson Sirleaf, in spite of institutional factors which might have prevented her from realising certain projects during her first mandate. Consistent with Ford (2011), before Sirleaf became president, the country had been destroyed by decades of civil war. According to the narrative, teachers had left the country and entire generations were uneducated. Moreover, thousands of former child soldiers had very bleak prospects. The country was in darkness, hospitals destroyed, rubbish in the streets and no local production of food.

However, with regard to the underlying statistical analysis, it is not very apparent to affirm that her presidency has been a fundamental catalyst. In fact, of the four indicators for which there are some differences between the period before and during her presidency, only two display some statistical rupture during her presidency, namely: representations in rural areas and women economic rights. Therefore the direct and indirect effects of female representation from the engaged literature on the behaviour of underlying variables, are not apparent.

We also acknowledge that expectations from the first mandate of her presidency should not be exaggerated because this sector is affected by a number of constraints, notably: (i) informal institutions which naturally play a substantial role and (ii) certain changes for which results can only be expected in the long-term. In essence, as it has been established in many studies (Gopal & Salim, 1998), informal institutions can either consolidate or weaken formal institutions. This is the basis for social contradictions (or social tensions) and even the inapplicability and disrespect of laws. As to what concerns the issue of women, gender-inequality may fundamentally be traceable to stereotypes (Huddy & Terkildsen, 1993; Eagly & Karau, 2002).

4. Conclusion and future research directions.
Do women really improve conditions for gender equality after becoming heads of states? This question has been the principal motivation of this line of inquiry. We have considered the Republic of Liberia as sample. The choice of this country is justified by the fact that it is the only country with a female head of state for which comparable data is available. We have scrupulously analysed six main gender indicators, namely: gender equality, equality of representation in rural areas (basic community), economic rights of women, participation of women in active life, political rights of women and legislations for the protection of women against violence. After disaggregating the dataset into two sub-samples, we have performed
the difference-in-means tests on the one hand, then on the other hand analysed ruptures in the series with the Pettitt, SNHT, and Buishand tests as well as the Von Neumann rapport.

Surprisingly, we have noticed that the first and last indicators behave in an identical manner. In fact, between the period preceding Ellen Johnson’s mandate and the period of her mandate, there is not a significant difference in the means of underlying indicators. In other words, the mean values are similar. With regard to other indicators, the period before her presidency is statistically different from her first mandate. However, we only notice positive and statistical ruptures for equality of representation in rural areas and the economic rights of women. This more or less contrasts with the direct and indirect effects often associated with women in power.

It is important to note that whereas the direct effect is the consequence of female power, the indirect impact can simply be traceable to the mere female presence, like an image effect. For example, Beaman et al. (2012) have shown that women occupying decision-making positions can influence the aspirations of young girls by putting in place measures that enable women to easily breakthrough in politico-economic as well as social circles (a direct effect). On the other hand, the authors maintain that an indirect effect may be traceable to the mere fact that such a position of responsibility is held by a woman.

The above results leave room for a number of future research directions. The research design and intuition of this study could be applied at the continental level in order to assess the effect of the chairperson of the African Union, Nkosazana Clarice Dlamini-Zuma on female empowerment. Moreover, the use of approaches like experimental evaluation and randomisation could be considered in the context of alternative case studies. In-depth descriptive and econometric analyses could also be considered. The use of the following indicators are also worthwhile, inter alia: the relative speaking time of females elected for legislative purposes, the content of their discourses in the National Assembly, laws initiated in view of improving the conditions of women and the nature of female parliamentary votes. The highlighted variables could be compared with those of the masculine gender to assess their effectiveness in the fight against gender inequality in African parliaments. These suggestions would go a long way to improving the extant knowledge on the issues.
References


Appendices: Graphical representations of statistical tests for Liberia

Appendix 1: Equality of representation in rural areas

1a. Pettitt Test

Y-axis: Equality of representation in rural areas
X-axis: Years

1b. Standard Normal Homogeneity Test (SNHT)

Y-axis: Equality of representation in rural areas
X-axis: Years
1c. Buishand Test

Y-axis: Equality of representation in rural areas
X-axis: Years

Appendix 2 : Female economic rights

2a. Pettitt Test

Y-axis: Female economic rights
X-axis: Years
2b. Standard Normal Homogeneity Test

Y-axis: Female economic rights
X-axis: Years

2c. Buishand Test

Y-axis: Female economic rights
X-axis: Years
Appendix 3: Participation of women in active life

3a. Pettitt Test

Y-axis: Participation of women in active life
X-axis: Years

3b. Standard Normal Homogeneity Test

Y-axis: Participation of women in active life
X-axis: Years
3c. Buishand Test

Y-axis: Participation of women in active life
X-axis: Years

Appendix 4: Female political rights

4a. Pettitt Test

Y-axis: Female political rights
X-axis: Years
4b. Standard Normal Homogeneity Test

Y-axis: Female political rights
X-axis: Years

4c. Buishand Test

Y-axis: Female political rights
X-axis: Years