Gender Revolution Prospects in Nigeria: Implications for Marriage Timing and Fertility

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Abstract

We hypothesise that the prospects of gender revolution (GR) is rising in Nigeria and may be swaying marriage timing and fertility. The 1990 and 2013 NDHS data and 45 in-depth interviews were analysed. The analysis suggests that the prospects for the emergence of GR increased between 1990 and 2013. Women with high GR status positively predicted marriage timing in 2013 as against the inconsistent association observed in 1990. Similarly, high GR status negatively predicted children ever born (CEB) in 2013. Also, qualitative data suggest a general preference for completing education and participating in labour market before marriage among women. The findings suggest that as the proportion of women with improved GR status increases across Nigeria, delayed marriage is likely to soar and sustainable fertility decline achieved. Social policy to accelerate female education and labour force participation along with realistic economic recovery strategies are therefore of critical importance.
***Keywords**: Female education, Labour force participation, Age at marriage and Children ever born*

Résumé

Nous avons l'hypothèse que les perspectives de l'révolution (GR) est en hausse au Nigeria et peut être mariage se balançant le calendrier et la fertilité. Les 1990 et 2013 et 45 données NDHS entrevues en profondeur ont été analysés. L'analyse suggère que les perspectives pour l'émergence de GR a augmenté entre 1990 et 2013. Les femmes à haut statut GR prédit positivement le moment du mariage en 2013 à l'encontre de l'association cohérence observé en 1990. De même, l'état haut GR prédit négativement enfants nés (CCS) en 2013. Aussi, les données qualitatives semblent indiquer une préférence générale pour l'achèvement de

l'éducation et la participation au marché du travail avant le mariage chez les femmes. Les résultats indiquent que la proportion de femmes à l'amélioration de l'état développe dans tout le Nigéria GR, le report du mariage est susceptible de monter en flèche et la réduction de la fertilité durable obtenus. Politique sociale pour accélérer l'éducation des femmes et la participation au marché du travail ainsi que des stratégies de rétablissement économique réaliste sont donc d'une importance critique.
***Mots-clés** : l'éducation des femmes, la participation au marché du travail, l'âge au mariage et enfants*

Introduction

Gender revolution (GR) and its association with demographic behaviour are well documented in industrialised societies (Goldscheider, Bernhardt, & Lappegard, 2015; Lesthaeghe, 2010). GR is construed as a significant change in gender roles whereby women (including women with babies) previously restricted to private sphere dramatically joined the public sphere hitherto dominated by men (Goldscheider et al., 2015). Goldscheider and colleagues considered the close up of the gap between private and public spheres as the first half of the GR. It is clear that demographic transition and increased demand for women's labour, owing to expanded industrial sector, were important precursors of the emergence of the first half of the GR in those societies (Goldscheider *et al.*, 2015; Lesthaeghe, 2010). However, the GR theory failed to account for the likelihood of the revolution emerging in settings where primordial demographic behaviours predominate and industrialisation remains limited, with about 70 percent of the citizens in agricultural employment. In fact, in such societies high level of unemployment is a common trait in the male population talk less of demand for female labour force supply.

In this study, we employed qualitative and quantitative data to explore the prospects of the emergence of the first half of the revolution (the commencement of convergence of the private and public spheres) in Nigeria. The country's experience of demographic transition has either not taken off or stalled; industrialisation is very low, roughly 70 percent of her population is engaged in subsistence farming, and high level of unemployment prevails (Asaju & Adagba, 2013; National Population Commission [Nigeria] and ICF Macro 2014). Also, the studies in Western societies concentrated mainly on demographic change as a consequent of the revolution and other changes in the family (Oppenheimer, 1973, 1994; Watkins, Menken, & Bongaarts, 1987). This study examined the likelihood of GR as a cause of changes in demographic behaviour in Nigeria. Specifically, the study investigated the likely influence of GR on marriage timing and fertility. This focus is significant not only because we know little in this regard but because high fertility is still a cardinal demographic phenomenon Nigeria is struggling to tackle. By extension, could the emergence of GR in Nigeria bring about

the much expected sustainable fertility decline? Thus, we hypothesised that the prospect of GR in Nigeria is high and it is swaying marriage timing and fertility in the country.

Literature: Emergence of Gender Revolution

How did the private and public spheres emerge in the developed societies of North America, Europe and in parts of Asia? Before the industrial revolution in the mid-nineteenth century, human population survived on agro-based subsistence economy (Stanfors & Goldscheider, 2015). Both men and women raised families that combined reproduction and production (Brewster & Rindfuss, 2000). Thus, husband and wife operated in one sphere—the private sphere. The industrial revolution changed this situation. Industrial revolution took production from the family domain into factories, and paid employment became available. Industrialisation marked the emergence of the public sphere. The period witnessed the movement of production from private (family domain) to public sphere (factories). Men were the first to seek and secure paid employment in the emerged public sphere and left the private sphere to women (Cotter, Hermsen, & Vanneman, 2011; Goldscheider et al., 2015). Although research has shown recently that public sphere existed earlier in institutions such as the church and government, the scale of the engagement of men in such institutions was limited, compared to that of the industrial revolution (Stanfors & Goldscheider, 2015).

Men maintained sole engagement in paid employment up to a middle 20th century, thus being the breadwinners in their families for over a century. However, with time some factors promoted the involvement of women in paid employment, taking them from the private sphere to the public sphere, first in Europe and North America and later in East Asia (Lesthaeghe, 1998; Lesthaeghe, 2010). The most important accelerating factors were the rise in female education and women occupations such as nursing, teaching, librarianship, telephone operation as well as being secretaries, typists and clerical officers (Davis & Greenstein, 2009; Oppenheimer, 1973). The changes in gender ideology from the traditional that was more restrictive on female labour force participation to a more egalitarian or liberal attitude towards female involvement in working away from home also promoted female labour force participation (Davis & Greenstein, 2009; Thornton & Freedman, 1979). Development of household equipment, improvement in female wages, the effect of demographic transition on fertility and female life expectancy, and the emergence of effective contraceptives were other factors (Esping-Andersen & Billari, 2015; Goldscheider et al., 2015; Lesthaeghe, 2010; Macunovich, 2012; Stanfors & Goldscheider, 2015). Women's entrance into the labour market that closed the gap between private and public spheres marked the beginning of the first part of the GR in industrialised societies (Stanfors & Goldscheider, 2015).

Gender Revolution Interaction with Marriage Timing and Fertility

The preceding section has shown clearly that female employment in paid work is the key component of GR; it characterised the first half of the revolution. The influence of GR on the timing of marriage has been a subject of debate in the literature. A survey of the controversies shows two main views. On the one hand, is Gary Becker's economic independence theory, which posits that when women engage in paid work and secure independent income, the benefit of marriage to such women evaporates (Becker, 1981; Sweeney, 2002). This theoretical position argues that females marry early in pre-industrial society because their existence is a function of the economic status of their respective husbands. Thus, in such societies, the significance of women tends to be in marriage. Typically, according to this school of thought, women in pre-industrial societies specialise in home-making while men are breadwinners. Hence, the differentiated sex role informs the practice of early marriage. Therefore, women participation in paid work in the wake of the industrial revolution that guaranteed their economic independence removed their expected gain in marriage. As a result, young women realised that marriage was less attractive compared to working in the labour market (Sweeney, 2002). The popularity of delayed marriage increased the age at marriage among women. In this light, there was a negative association between GR and age at marriage in the Western world.

Some recent studies have indicated support for the independence hypothesis asserting that GR played a key role in demographic behaviour in developed societies (Goldscheider et al., 2015; Mason, 2001). Widespread disinterestedness of women in starting family and the adoption of non-traditional family attitudes such as married but remain childless are manifestations of the negative association between GR and marriage timing among women (Choe, Bumpass, Tsuya, & Rindfuss, 2014; Goldscheider et al., 2015). Some scholars argue that the conflicting demands of paid employment and commitments of marriage relationships reinforced disinterestedness in marriage (Mason, 2001).

On the other hand, Oppenheimer, in her career-entry hypothesis, contested the major tenet of independence hypothesis (Oppenheimer, 1973, 1988, 1994). She argues, that, the relationship between GR and marriage is in fact positive. The career-entry hypothesis posits that with the change in the labour market, in which women participated in paid work alongside their male counterparts, the basis of marriage bargaining also changed. This is the sendse in which the attraction of men to women significantly tend to depend on her position in the labour market instead of traditional characteristics such as religion, family background and physical attributes (Oppenheimer, 1988; Sweeney, 2002). She argues that the convergence of sex roles as a result of women involvement in labour market makes them more marriageable. Oppenheimer argues that the change in women economic status may lead to delayed marriage because of a longer stay in the marriage market searching for a high-quality match that usually characterises educated

and employed young females (Oppenheimer, 1988). Goldscheilder and colleagues in a cross-country study reported findings that tilted more in support of Oppenheimer's argument, especially among younger cohort (Goldscheider, Turcotte, & Kopp, 2001).

Although Becker and Oppenheimer recognised the likelihood of delayed marriage as female participation in paid work got accelerated in their hypotheses, they maintained divergent explanations on the how of the delay. Becker argues that because marriage becomes less attractive to the educated and gainfully employed, they tend to postpone getting married (Becker, 1981). In contrast, Oppenheimer insists that it is rather the longer time it takes educated and employed women to get appropriate (high quality) potential partner in marriage market that results in delayed marriage (Oppenheimer, 1988).

In a similar vein, the association between GR and fertility has been a subject of debate. Becker's economic approach suggests that one of the consequences of changes in the family institution in industrial societies was fertility decline since the quality of children became more important than quantity (Becker, 1981; Watkins et al., 1987). Some recent studies have shown that because women gained economic independence owing to their participation in paid work, interest in reproductive activities, including childbearing and childrearing, began to dwindle (Esping-Andersen & Billari, 2015; Gerson, 2009; Lesthaeghe, 2010). Studies have, also, shown that the use of more effective contraception culminated in the attainment and maintenance of fertility in the Western world (Lesthaeghe, 2010; Mason, 2001). Also, the occurrence of sexual revolution motivated young people to question restriction of sex and childbearing to marriage and sustained preference for early sexual debut outside marriage, out-of-wedlock childbearing and decision to remain unmarried (Lesthaeghe, 2010). Such attitudes could have promoted sustainable fertility decline in industrial societies. Consequently, fertility declined; and, the diffusion of small family size in the population, increased the scale of the decline (Esping-Andersen & Billari, 2015). However, Oppenheimer challenged this position in the case of the United States (Oppenheimer, 1994). In fact, Brown and Guinnane argue that no acceptable explanation exists for the fertility decline in the Western world during the early period of industrialisation (Brown & Guinnane, 2002).

In Nigeria, the last few decades witnessed some noticeable strides on the journey to industrialisation, essentially propelled by the discovery of oil in the1950s (Effoduh, 2016). While female education is still largely low (Asaju & Adagba, 2013), the country has experienced some relative improvement in the last five decades (Anugwom, 2009; Grant & Behrman, 2010; Wusu, 2012). Earlier studies suggest that despite the growing proportion of educated women in Nigeria, the proportion in paid work is still disproportionately low (Anugwom, 2009). Some of the crucial factors influencing female labour force participation in the country include the geographic region a woman comes from, the marital status, religious affiliation and level of education (Gayawan & Adebayo, 2015; Iweagu, Yeni, Nwokolo, & Bulus, 2015). However, a relatively recent study that employed nationally representative data sets hinted that women's entry into

paid work has been growing in Nigeria (Wusu, 2012). Thus, these studies suggest GR indicators have been growing in Nigeria. Previous studies in parts of Nigeria observed noticeable trends in family formation with marginal changes in age at first marriage and female education as well as labour force participation (for instance, Adedokun, 1999; Adedokun, Oyetunji, Adeola, & Nelson-Twakor, 2000; Wusu & Isiugo-Abanihe, 2006; 2003). Such studies were limited in coverage. Also, we cannot overemphasise the need to validate and update findings of such studies in the light of new data.

Data and Method

This study used both the qualitative and quantitative data collection method. We generated qualitative data through 45 in-depth interviews (IDI) conducted in Lagos metropolis and Ogun state between April and June 2016 using a purposive sampling strategy. Participants included married women in paid employment in four sectors (education, banking, manufacturing and services sectors) and young female adolescents (in and out of schools). The sample was limited to the very diverse and representative Lagos metropolis and the adjacent settlements in neighbouring Ogun State, which allowed the management of meagre resources available for the study. We adjudged the carefully selected interviewees representative of the different parts of Nigeria. Trained field assistants equipped with 17-themes interview guide and recording equipment conducted the interviews. Table 1 below shows the background characteristics of the study participants.

The quantitative data consist of the first (1990) and latest (2013) Nigeria Demographic and Health Survey (NDHS). The analysis used the weighted individual recode file representing the reproductive age women sample in 1990 (N= 8781) and 2013 (N= 38,948). However, this analysis extracted respondents within 35 and 49 age brackets to assess the timing of family formation and fertility among women who might have completed their reproductive goals. The surveys deployed a stratified/cluster random sampling strategy to generate a nationally representative sample for data collection exercise (further details on the sampling strategy see Federal Office of Statistics [Nigeria] and IRD/Macro Int. 1992; National Population Commission [Nigeria] and ICF Macro 2014).

We represented the main independent variable—GR—using two characteristics: paid employment and highest education level attained. These indicators perfectly fit the explanatory frameworks on GR presented in Goldscheider, Bernhardt and Lappegard (2015) and Lesthaeghe (2010). As explained earlier in this paper, the revolution is about the involvement of women in the public sphere hitherto dominated by men thereby closing up the gap between private and public domains (Esping-Andersen & Billari, 2015; Macunovich, 2012). Paid employment had two categories: did not work (0) and

worked (1). Highest education attained was categorised into no schooling (0), primary (1) and secondary + (2). We summed up the two variables using SPSS Compute Variable function to generate GR. The combination resulted initially into four codes (0, 1, 2, and 3). We reclassified the four codes into three through SPSS Variable Transformation process, which yielded 0, 1, 2 (2+3 re-coded 2). Through variable definition, we defined the three generated GR categories as Low (0), Medium (1) and High (2).

Table 1: Background characteristics of IDI study participants

Characteristics	**Number**	**Percent**
Age		
< 20	5	11.1
20 – 29	29	64.4
30 – 39	9	20.0
40+	2	4.4
Education		
Below Secondary	6	13.3
Secondary	15	33.3
OND/NCE	10	22.2
HND/BSc+	14	31.1
Occupation		
Previously employed	11	24.4
Services/Manufacturing employee	14	31.1
Teachers	4	8.9
Students/secondary school leavers	16	35.6
Religion		
Christians	21	46.7
Muslims	24	53.3
Marital status		
Not married	24	53.3
Married	21	46.7

Procedure

We employed the NVIvo 10 software to conduct a content analysis of the qualitative data. After the transcription of the audios of the interviews and word processing it, we imported the files into the software. The coding used the themes, which include women's priority between education and marriage, the perceptions of women on the timing of marriage and female employment, the perception of young women on female education and employment, and influence of female employment on household responsibilities. The themes were in tandem with the basic characteristics of existing gender revolution framework (Goldscheider et al., 2015). The coding enabled the achievement of proper organisation of the data into the themes that were directly related to the objectives of the study. The coded narratives were used to prepare global views of the expressions of the study participants on study objectives. The global views enhanced understanding and interpretation of the data. Striking and representative excerpts from the narratives were selected and presented to corroborate the global views in the results section.

Quantitative The analysis sought to explain two dependent variables: (a) marriage timing indicated by age at marriage and (b) fertility captured through children ever born (CEB) to women (35-49).The analysis took account of confounding factors that are capable of influencing age at marriage and fertility. These include age, place of residence (urban (1) and rural (2), religion (no religion/others/traditional (0), Christians (1), Muslims (2)), contraception (used (1) and did not use (0)), child mortality (no child died (0), at least one child died (1)), and partner highest education (none (0), primary (1) and secondary + (2)). Another important variable included in the adjusted models was a birth cohort. This was categorised (as dictated by the data) into 1940-1949 (coded 0) and 1950-1955 (1) for the 1990 NDHS and 1963-1969 (0) and 1970-1978 (1) for 2013 NDHS. The purpose for the inclusion was to adjust for the likely influence of the period the respondents were born, which could reflect differences in social changes they might have experienced. Also, we added age at marriage, child mortality and marital status (never married (0); ever married (1)) to the list of confounding variables while constructing the fourth CEB models. Child mortality is the product of the combination of variables 206—number of sons that died and 207—number of daughters that died. We added those variables because it is well established that they are important predictors of fertility (Isiugo-Abanihe, Ebigbola, & Adewuyi, 1993).

Univariate analysis of the NDHS data employed descriptive statistical techniques to explain the socioeconomic and demographic backgrounds of the sampled women by year of survey and region (north and south). This level of analysis involved all variables that we used in the quantitative segment of the study. The multivariate analysis considered the association between GR and the two dependent variables using the Ordinary Least Square (OLS) regression. At the level of multivariate analysis, we examined the

association between GR and the dependent variables while controlling for the effects of the named confounding characteristics. In all, we constructed eight OLS adjusted and unadjusted models. We used the IBM SPSS version 23 software in conducting all quantitative analysis.

Results

Table 2 shows the comparative distribution of women between 35 and 49 years of age in 1990 and 2013 NDHS by selected background characteristics and region. The table presents the descriptive statistic on GR, the timing of marriage, fertility indicator and the confounding variables. Of importance is the birth cohort. It reveals the majority of the respondents were of the 1950-1955 cohort in 1990 and the 1970-1978 cohort in 2013. Thus, the sampled women in the two surveys belong to two distinctive generations. In this light, the analysis compared women who most likely got exposed to different degrees of social change.

The survey data show that substantial differences exist in the proportion of women in each category of GR between the north and south as well as between 1990 and 2013 within each region and between regional and national levels—Table 2. While a vast majority was in the low GR category majority of their counterparts in the south were in medium and high GR groups in 1990. A similar pattern occurred in 2013. Nevertheless, noticeable improvement occurred in GR between 1990 and 2013. Overall, the table suggests that the South experienced a substantial degree of progress in GR compared to the north, even higher than the national average. On education and labour force participation, which are the two variables combined to generate GR, the proportions of educated women (at least at primary level) and those who were in labour force grew significantly between 1990 and 2013. Expectedly, the proportions in the south were higher than in the north, and the national average, which corroborates the pattern exhibited by GR distribution.

The IDI data reveal a deep appreciation of female education by women of reproductive age interviewed. Almost all of the interviewees, married and unmarried, opined that education should be acquired as the means of gaining self-respect in society and as a means of realising economic independence. The participants highlighted that formal education should no longer be the preserve of male children. They accentuated that embracing education was important for women to participate in the labour force and the opportunities in society. The participants explained that they and most other women and young females now desire and participate actively in modern employment just like their male counterparts, before thinking about marriage. The spectrum of their opinion indicates that women now desire good jobs to be economically independent and be able to support their families.

The opinions expressed by the participants suggest that some fundamental social changes were taking place. Conscious preference for education among women and young females as well as the desire to get into paid work signal the beginning of a new era. Women used to be kept as homemakers in Nigeria, the desire for education and to participate in the labour market were the preserves of males. The views expressed by the study participants indicate that a departure from that trend was in progress. According to the interviewees, married women and young females now pursue education and paid work instead of only preparation for marriage to become homemakers as in the past. In this study, 39 (87 percent) of the participants already possessed secondary or higher education, which reflects their appreciation of the value of education (see Table 1). In particular, 24 (53%) had post-secondary qualifications. Also, it is astonishing that 18 (40 percent) were in paid employment in various sectors. Also, 11 of them were employed previously but now out of a job, which indicates they were likely engaged in paid employment and not self-employment. Thus, GR is gradually taking root in Nigeria. The excerpt below corroborates the growing importance of female education and labour force participation in the study setting.

> It is very important for females to go to school. Why should only males go to school? Males and females are both humans. Most men of today are not even interested in marrying illiterate ladies. For women, it is important for us to go to school. The trend now is that after education paid employment. After working for some months or years, a lady can then get married. [A 21-year-old Christian undergraduate]

Table 2: Percentage distribution of women aged 35-49 by selected socio-demographic characteristics by north-south regions in Nigeria, NDHS 1990 and 2013.

Characteristics	1990 NDHS	2913NDHS				
	North N=1076	South N=1339	National N= 2414	North N = 6772	South N=4987	National N=11760
Gender Revolution						
Low	76.1	18.6	44.2	54.9	6.3	34.3
Medium	22.6	51.7	38.8	24.7	26.2	25.3
High	1.3	29.6	17.0	20.4	67.5	40.4
Birth cohort						
1940-1949	43.9	43.9	46.5	-	-	-
1950-1955	56.1	56.1	53.5	-	-	-
1963-1969	-	-	-	34.4	35.9	35.0
1970-1978	-	-	-	65.6	64.1	65.0
Education						
None	97.2	62.0	77.7	70.2	12.1	45.6
Primary	2.2	29.6	17.3	15.3	34.7	23.3
Secondary+	0.6	8.4	4.9	14.5	53.2	30.9
Paid employment						
Did not work	98.5	94.5	96.3	71.8	57.6	65.8
Worked	1.5	5.5	3.7	28.2	42.4	34.2
Age *(median)*	40.0	40.0	40.0	40.0	40.0	40.0
Marital status						
Never married	0.1	1.0	0.6	0.4	3.5	1.7
Ever married	99.9	99.0	99.4	99.6	96.5	98.3
Age at marriage *(median)*	15.0	18.0	17.0	15.0	20.0	17.0
CEB *(median)*	6.0	6.0	6.0	7.0	5.0	6.0
Place of residence						
Rural	87.0	72.4	78.9	72.9	38.0	58.1
Urban	13.0	27.6	21.1	27.1	62.0	41.9
Religion						
Christianity	10.3	74.8	46.1	20.6	83.2	47.1
Islam	87.6	14.2	46.9	77.8	14.9	51.1
Others	2.2	11.0	7.1	1.6	2.0	1.8

Contraception						
Did not use	97.8	88.7	92.8	91.7	67.8	81.6
Used	2.2	11.3	7.2	8.3	32.2	18.4
Partner's Education						
None	90.0	45.9	65.8	61.3	11.4	40.5
Primary	6.3	35.6	22.4	13.0	32.3	21.0
Secondary+	3.7	18.4	11.8	25.6	56.3	38.4
Child mortality (mean/SD	0.5(0.5)	0.6(0.5)	1.4(1.8)	1.5(1.9)	0.6(1.1)	1.1(1.6)

What is the role of GR in the age at marriage that characterised the two regions in Nigeria during the period under investigation? The regression models address this question, and the IDI data elucidate further. First, we look at the regression models on GR and marriage timing. Table 3 and 4 show the unadjusted and adjusted standardised coefficients of Least Square regression on the association between GR and age at marriage (model 1 to model 4). At the national level, medium and higher levels of GR were significantly associated with age at marriage relative low GR level in the two surveys—coefficients in the last column of the tables. The association remained significant after adjusting for the confounding variables. Further, the national regression models suggest that high GR category had a stronger positive association with marriage timing indicator than medium category in 1990 and 2013 surveys (though the adjusted association for medium GR was not significant in 2013 survey). Therefore, at the national level, women in high GR status were most likely to delay marriage.

Table 3: Unadjusted standardised coefficients of OLS regression on the association between GR and age at marriage among married women (35-49) in Nigeria, NDHS 1990, 2013

Characteristics	Model 1					
	North		South		National	
1990	β	S.E	β	S.E	β	S.E
Gender Revolution						
Low (ref.)	-	-	-	-	-	-
Medium	.31***	.28	-.12**	.19	.22***	.13
High	.08**	1.03	.03	.25	.27***	.19
R	.31		.14		.28	
R Square	.10		.02		.08	
Adjusted R Square	.10		.02		.08	
F	5***		12.72***		104.21***	
Characteristics	Model 2					
	North		South		National	
2013	β		β		β	
Gender Revolution						
Low (ref.)	-		-		-	
Medium	.06***	.13	.06*	.34	.12***	.12
High	.27***	.14	.29***	.32	.44***	.11
R	.26		.24		.40	
R Square	.07		.06		.16	
Adjusted R Square	.07		.06		.16	
F	251.13***		152.80***		1101.51***	

**significant at p< 0.05; **significant at p< 0.01; ***significant at p<0.001; (r) = reference category*

Moreover, the regional differences veiled by the national level association is revealed by the coefficients in column two to five in Tables 3 and 4. In the north, we observed a significant positive association between age at marriage and medium as well as high GR categories in both surveys in the unadjusted models. After adjusting for the confounding variables, medium GR in 1990 and high GR in 2013 remained significantly positively associated with marriage timing indicator. In contrast, in the south, surprisingly though, we observed a significant negative association between medium GR in 1990 in both unadjusted and adjusted models. Conversely, in 2013 survey, medium and high GR were significantly positively associated with marriage timing in the unadjusted model, but adjustment for confounding variables resulted in just high GR remaining significantly

positively associated with marriage timing. This result suggests that around the 1990s, women in medium GR category likely got married earlier than those in the low category in southern Nigeria. However, the situation changed after that (around 2013), medium or high GR status could get married relatively late among women

Table 4: Adjusted standardised coefficients of OLS regression on the association between GR and indicator of age at marriage among married women (35 -49) in Nigeria, NDHS 1990, 2013

Characteristics	Model 3					
	North		South		National	
1990	β	S.E	β	S.E	β	S.E
Gender Revolution						
Low (ref.)	-	-	-	-	-	-
Medium	.26***	.29	-.08*	.33	.15***	.22
High	.05	1.04	.06	.40	.19***	.33
R	.38		.22		.34	
R Square	.15		.05		.11	
Adjusted R square	.14		.04		.11	
F	22.73***		8.63***		37.91***	
Characteristics	Model 4					
	North		South		National	
2013	β		β		β	
Gender Revolution						
Low (ref.)	-	-	-	-	-	-
Medium	.01	.13	.02	.35	.02	.13
High	.13***	.19	.19***	.35	.19***	.15
R	.32		.30		.45	
R Square	.10		.09		.21	
Adjusted R Square	.10		.09		.21	
F	94.87***		58.20***		332.33***	

**significant at p</= 0.05; **significant at p< 0.01; ***significant at p<0.001; (r) = reference category; Models adjusted for age, birth cohort, place of residence, religion, and partner's highest education attained.*

The IDI data appear to corroborate the quantitative segment of analysis. Almost all the participants indicated that marriage is still important to young people, but there was an emphasis on the necessity of completion of schooling beyond secondary education before venturing into it. Off course, Secondary and postsecondary education assist in delaying marriage to a considerable extent (Adedokun, 1999). Some participants suggested 22 to 23 years age at first marriage while some others felt 25 to 27 years were appropriate. On the average, the study participants suggested that most young women now consider marriage between age 22.5 and 26 years. This preference was because of the new drive of getting appropriate educational training to qualify for labour market opportunities. Also, most of the study participants discussed the importance of contracting marriage only after obtaining educational skills that would facilitate their self-reliance and economic independence. The desire to avoid marriage was gaining root to the extent that participants who got married at a relatively early age were full of regrets, that if they had known they would not have married at such ages. One popular reason was the dependent life they lived whereby their husbands dictated everything about their lives. The interviews suggest that the key drivers of the changing marriage timing perception among young women in Nigeria, at least in the south, are the strong desire for education and subsequent participation in the labour force. The excerpt below demonstrates the opinion spectrum on prevailing age at marriage among the study participants.

> The appropriate age a lady should marry is 23 years. If she should start education early, she should complete schooling and get married at 23. The maximum age I think a lady should get married is 25 years. Even for those who do not have formal education, this suggested age still applies. [A 22-year-old Muslim undergraduate]

Moreover, national CEB declined from 6.2 in 1990 to 5.5 in 2013. However, while it declined from 6.0 to 4.8 in the south, it increased from 6.0 to 7.1 in the north—Table 2. To assess the association between GR categories and the fertility pattern, we built models 5 to 8 presented in Tables 5 and 6 below. The unadjusted regression coefficients in the last column of Table 5 reveal that GR was significantly positively associated with CEB at the national level in adjusted and unadjusted models in 1990 survey. The role of GR in the fertility indicator was almost nil owing to the one percent (1%) coefficient of determination of the model. In fact, the models for the two regions were not fit because the F statistics were not significant. Conversely, in 2013 survey, the association between GR and CEB was significant and negative across national and regional levels. The national coefficients show that high GR had stronger negative effect on CEB ($\beta = -40$, $p<0.001$) than medium GR ($\beta = -11$, $p<0.001$). The coefficients for north and south exhibited a similar pattern.

The adjusted models presented in Table 6 show that medium GR significantly but negatively predicted CEB in the North, but the association was positive at the national level in 1990 survey. The 2013 adjusted model presents a consistent pattern. There was a significant and negative association between high GR and CEB in the two regions and at the national level. Thus, indicates that women of high GR status were likely to report lower CEB compared to those in low GR status. The analysis on GR implications for fertility suggests that the role of GR in 1990 in the behaviour of fertility was not important at all. However, although GR explained only 6 percent at the regional level and 13 percent at the national level of CEB variations, the improvement in GR in 2013 made a consistent negative impact on the fertility indicator. High GR status resulted into lower CEB among women in all parts of the country. This position persisted even after adjusting for the confounding factors.

Further, we explored the changing perceptions/experiences of IDI participants on childbearing/fertility in the study settings. First, married participants were asked to share their experience and that of fellow women about the likely impact of involvement in paid work on childbearing behaviour, including sex with husbands, the frequency of pregnancy, the number of children and child spacing. Out of the 21 married women interviewed, only four expressed that their current or past work did not affect their childbearing behaviour. All others explained that

Table 5: Unadjusted standardised coefficients of OLS regression on the association between GR and CEB among women (35 - 49) in Nigeria, NDHS 1990, 2013

Characteristics	Model 5					
	North		South		National	
1990	β	S.E	β	S.E	β	S.E
Gender Revolution						
Low (ref.)	-	-	-	-	-	-
Medium	.07*	.24	-.01	.20	.09***	.13
High	.02	.86	-.05	.22	.06*	.17
R	.07		.04		.09	
R Square	.01		.002		.01	
Adjusted R Square	.003		.00		.01	
F	2.45		1.14		9.53***	
	Model 6					
Characteristics						
	North		South		National	
2013	β	S.E	β	S.E	β	S.E
Gender Revolution						
Low (ref.)	-	-	-	-	-	-
Medium	-.04**	.09	-.05		-.11***	.07
High	-.25***	.09	-.28***		-.40***	.06
R	.24		.24		.36	
R Square	.06		.06		.13	
Adjusted R Square	.06		.06		.13	
F	206.95***		145.03***		886.22***	

**significant at p< 0.05; **significant at p< 0.01; ***significant at p<0.001; (r) = reference category*

their participation in the labour force had an impact on the frequency of sex with their husbands. For instance, a woman said sometimes she would be too tired to welcome sex because of her engagement at work. Another participant said many times she got worn out because of her work and used to appeal to her husband to postpone sexual touch until another time. A few participants hinted that their work did not affect pregnancy frequency because their work was not strenuous and the number of children to bear should be left to God. However, most of the participants were of the opinion that the desire to have good quality children and work pressure made them cut down their family size. Although most of the participants indicated non-use of contraceptives, they were vehement on the necessity of proper spacing between children because the combination of work's burden and management of many children could be very stressful. The quotes

below epitomise the popular opinion during the interviews.

> Yes, work affects sex, especially because of the kind of traffic situation in Lagos. A woman gets home from work tired will be unwilling to have sex. Work affects how often to become pregnant because going on maternity leave affects productivity. For instance, the pressure of work forced me to limit the number of children I have [A 44 years old Christian employee]

Table 6: Adjusted standardised coefficients of OLS regression on the association between GR and CEB among women (35 - 49) in Nigeria, NDHS 1990, 2013

Characteristics	Model 7					
	North		South		National	
1990	β	S.E	β	S.E	β	S.E
Gender Revolution						
Low (ref.)	-	-	-	-	-	-
Medium	-.08**	.19	-.03	.12	.07**	.15
High	-.004	.71	-.03	.17	.01	.22
R	.68		.41		.33	
R Square	.46		.18		.11	
Adjusted R Square	.45		.17		.11	
F	73.88***		80.57***		28.80***	
	Model 8					
Characteristics						
	North		South		National	
2013	β	S.E	β	S.E	β	S.E
Gender Revolution						
Low (ref.)	-	-	-	-	-	-
Medium	.003	.07	-.01	.11	-.01	
High	-.06***	.10	-.06**	.11	-.07***	
R	.65		.69		.70	
R Square	.42		.48		.49	
Adjusted R Square	.42		.48		.49	
F	447.92***		400.75***		997.07***	

**significant at p< 0.05; **significant at p< 0.01; ***significant at p<0.001; (r) = reference category; Models adjusted for age, birth cohort, child mortality, contraception, age at first marriage/ cohabitation, marital status, place of residence, religion, and partner's highest education attained*

Discussion

This study has examined GR prospects in Nigeria and the implications for two critical aspects of reproductive health behaviour—marriage timing and fertility. The quantitative and qualitative data analysed lend some degree of support for the hypothesis tested that the prospects of GR is rising in Nigeria and it is swaying marriage timing and fertility.

Men largely dominated the public sector while women were restricted more to the private sphere in Nigeria for a long time. The survey data analysed demonstrated that the private-public sphere dichotomy predominated in Nigeria up to the 1990s. However, with time a negligible proportion of females began to take advantage of formal education and subsequently engaged in paid work to boost their economic independence (Federal Office of Statistics [Nigeria] & IRD/Macro International, 1992). Since then, there has been a significant improvement in the proportions of educated women and women in paid employment in Nigeria (Grant & Behrman, 2010; Wusu, 2012). Given that rising female education and labour force participation typify GR, obviously, the revolution is emerging in Nigeria (Esping-Andersen & Billari, 2015; Stanfors & Goldscheider, 2015). As a result, this study found increased proportion of women in medium and high GR categories in 2013 national survey data, at national and regional levels.

Moreover, the qualitative data espoused that self-consciousness of the importance of education has grown markedly among women in Nigeria and the drive to qualify for paid work is now very high. There is an increasing realisation among women that education is the reliable pathway to self-respect and economic independence. Consequently, although Nigeria is not a fully industrialised nation, women are no longer entirely restricted to the private domain, and obviously, the private-public dichotomy has diminished significantly. The findings suggest that the occurrence of GR is likely in societies where industrialisation is still limited. Cotter and colleagues' assertion that GR in 'later' industrialising societies may not follow exactly the path of the Western world where GR was a concomitant of industrialisation supports this observation (Cotter et al., 2011).

Further, we examined the likely influence of the emerging GR for marriage timing. The findings appear to have lent substantial support for Gary Becker's economic independence approach and partially consistent with Oppenheimer's marriage hypothesis. We observed a significant and positive association between GR and age at marriage at regional and national levels. This type of relationship suggests that women in medium or high GR were likely to delay marriage compared to their counterparts in low GR category. In this regard, educated women who were in paid work, thus with some relative economic independence may postpone marriage because they had an alternative (maybe better alternative) than the traditional economic benefits women derive from marriage. Their participation in labour force created this alternative and enabled them to possess economic independence that diminishes marriage gains, which

is consistent with Gary Becker's independence hypothesis (Becker, 1981). Although the age at marriage increased marginally, the propensity for the further rise is likely to grow.

However, within over two decades, the increase in age at marriage observed appears limited. The marginal increase observed in the analysis might have stemmed from Oppenheimer's argument. She argues that women participation in the labour force may make them more attractive and marriageable, thereby promotes negative association between GR and age at marriage (Oppenheimer, 1988, 1994). So, one plausible explanation for the persistence of low age at marriage despite the visible improvement in GR in Nigeria could be that improved GR status makes such women more attractive to suitors and therefore get them married early (Sweeney, 2002). Thus, the expected effect of improvement in marriage regarding delay or postponement is eroded, keeping marriage timing similar to traditional regimes. Further, we observed a negative association between medium GR and age at marriage relative low GR in unadjusted and adjusted 1990 models in southern Nigeria. Within Oppenheimer's framework, the situation in the south in 1990 might be that women in such GR category were more attractive in the marriage market (Oppenheimer, 1994). Consequently, they got married earlier than their counterparts of low GR status.

On implications of GR for fertility, national CEB declined by roughly one child between 1990 and 2013. The CEB pattern observed suggests fertility is still high in Nigeria and the rate of decline is still abysmally slow. However, the negative association observed between high GR and CEB in 2013 at all levels implies that women with improved GR status were likely to report lower CEB. These results suggest that the prevailing CEB that varies between 4.8 and 7.1 is most likely to decline everywhere in Nigeria as improvement in GR progresses. When the fertility decline accelerates at the national level, Nigeria may begin the journey towards replacement fertility. Studies in the Western societies reported similar demographic changes, including sustained fertility decline enhanced by GR (Goldscheider et al., 2015; Lesthaeghe, 2010) owing to the incompatibility between women labour force participation and traditional reproductive behaviour (Fuwa, 2014).

This study has a few limitations we considered important to highlight before concluding the paper. First, the NDHS data analysed was cross-sectional. Therefore, our interpretations do not imply cause-and-effect relationships. Second, we conducted a comparative analysis of 1990 and 2013 NDHS. This comparison may not be a perfect representation of reality relative to what we could have obtained if the two data sets were from a panel survey design. Third, the qualitative data collection exercise took place only in urban Lagos and adjoining settlements in Ogun State owing to the meagre financial resource at out our disposal. The assumption was that the purposive sample could be representative of other cities and rural areas in Nigeria. It is likely that this assumption may not be universally correct. As a result, we suggest that further studies should replicate this investigation using the qualitative tools in other cities and selected rural communities.

Despite the limitations highlighted above, the findings are insightful and have far reaching implications. The analysis suggests that the prospects of the emergence of gender revolution (GR) increased between 1990 and 2013. On implications, women of high GR status positively predicted marriage timing in 2013 as against the inconsistent association observed in 1990. Similarly, high GR status negatively predicted CEB in 2013. Qualitative data suggest a general preference for completing education and labour force participation before marriage among women. The findings suggest that as the proportion of women with improved GR status increases across Nigeria, delayed marriage is likely to soar and sustainable fertility decline achieved. Social policy to accelerate female education and labour force participation along with realistic economic recovery strategies are therefore imperatives.

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