



# An Investigation into the Reported Closing of the Nicaraguan Gender Gap

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## Abstract

For the last 5 years, the World Economic Forum’s annual Global Gender Gap Index has been reporting that Nicaragua is one of the most gender equal countries in the world. This is the culmination of a remarkable increase in gender equality in Nicaragua during the past decade, charted by the same index. This paper discusses the Index and the Nicaraguan context and then refers to the results of several waves of the Latinobarometer to investigate whether the change in gender equality has affected Nicaraguans’ (and particularly Nicaraguan women’s) perceptions of their lives. The underlying question is therefore whether satisfaction with life, and opinions about gender equality have, for Nicaraguans, altered between the period when Nicaragua was placed low on the gender equality ranking to when it had attained a high rating on the index just a few years later. The findings, which come from ordered probit regression analysis, reveal slight evidence of improvements over this time period and emphasise the importance of economic fundamentals.

**Keywords** Nicaragua · Gender equality · Global Gender Gap Index · Life satisfaction · Latinobarometer

**JEL Classification** I31 · N36

## 1 Introduction

According to the World Economic Forum’s annual Global Gender Gap (GGG) Index, Nicaragua is one of the most gender equal countries in the world and has consistently been for several years (World Economic Forum 2017). For example, in the 2014 Index covering 142 countries, only 5 had greater gender equality than Nicaragua according to the index (these 5 countries, in order of gender equality, are Iceland, Finland, Norway, Sweden and Denmark). Since then, it has been ranked twelfth in 2015, tenth in 2016 and sixth once more in 2017. These very high global rankings mean that Nicaragua has been “the best performer in the Latin American and the Caribbean region” (World Economic Forum 2017, p. 14)

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since 2012. Nicaragua was not always so highly placed in the index. Indeed, the rise of Nicaragua in these rankings has been one of the more remarkable developments since the inception of the WEFs GGG Index. In 2006, the report's first year, it lay in 65th place out of 115 countries.<sup>1</sup> This rise has been noted by a GGG report too: "Since 2006, the country (Nicaragua) has recorded the highest improvement to date" (2014, p. 22). This striking rise is not due to methodology, since the methods used to compile the index have remained unchanged over its life, and although it has been the target of both praise and scepticism, it has received little academic attention. Given that a stated purpose of the report is that it should be a useful guide for policy, such scrutiny is advisable (World Economic Forum 2006, p. 3).

In counterpoint to the country's considerable rise, its high current ranking in the report and the positive headlines this generates for Nicaragua, women's rights advocates claim that there is still a long way to go. Abortion, which is illegal in every possible circumstance, is just one of several issues that concern such groups (Aizenman 2006; Human Rights Watch 2017). Other issues include domestic violence, unpaid work, poverty, housework and childcare, which are discussed below. It has also been argued that the Index itself is flawed and may not adequately reflect gender (in)equality in particular countries. These criticisms are found in newspaper articles and blog posts rather than academic literature. One of the rare examples of academic interest and scrutiny is perhaps the most important investigation in this respect, conducted by Barns and Preston (2010), who take Australia's high position in 2006 and related claims made in that year's report that it is a world leader in closing the gender gap as a starting point for their scrutiny. More generally, Barns and Preston (2010) argue that there is a need to examine such indices, particularly if they are going to be used by politicians to make claims about social progress. In Nicaragua, there is evidence that this does indeed occur and the current high ranking in the GGG Index has been trumpeted as a success story ("Nicaragua sube..." 2017; "Nicaragua: Ortega..." 2013).

This investigation does not directly investigate and critique the Index itself—although critical commentary is offered—but instead takes this rise as a motivation for investigating whether life has improved over this period for Nicaraguans, and especially Nicaraguan women. If the report has credibility in the Nicaraguan context, and is worthy of the acclaim it has generated, then presumably the closing of the gender gap to which it attests should be manifest in improved well-being among the country's (female) citizens. Whether this is actually so is assessed below with ordered probit regression analysis of data from the Latinobarometer, a survey conducted with a reasonably representative repeated cross-section sample of Nicaraguans. Furthermore, this investigation also considers whether the remarkable increase in equality is at all credible by considering people's responses to questions asking about their opinion on whether things are getting better in terms of gender inequality, as well as their individual self-reported life satisfaction.

The remainder of this article is organised as follows. Section 2 considers the Index itself and the Nicaraguan context. Section 3 describes the Latinobarometer dataset and explains the methodological choices made. Section 4 presents results, and Sect. 5 discusses the limitations of this study. Finally, Sect. 6 offers concluding remarks.

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<sup>1</sup> The WEF published a report similar to the index in 2005 which covered 58 countries, however Nicaragua was not one of them (Moitra and Kelly 2013).

## 2 The Global Gender Gap Index, the Nicaraguan Context, and Literature Relevant to Both

This section begins with a consideration of the Index itself and then moves on to situate it in the Nicaraguan context. The third subsection links the discussions in the two previous subsections, summarising them with respect to the economics of life satisfaction research area.

### 2.1 The Index Itself

The Index comprises four dimensions which consider the following aspects of gender disparity/equality: health and survival; political empowerment; economic participation and opportunity; and educational attainment. In total, across these dimensions, interest centres on gaps between males and females in terms of 14 specific outcome variables, for example, income (economic participation and opportunity), literacy (educational attainment), life expectancy (health and survival) and number of legislators (political empowerment). The World Economic Forum website provides very clear details about how the Index is constructed and how the various dimensions are measured.<sup>2</sup> As discussed below, equality in this index is considered to occur when females and males have no gap in these outcome variables or females have higher levels than males. Importantly, the Index is not weighted for the absolute levels of the outcome variables. Thus a country can rank high with a low level of literacy, as long as the gap between each gender's literacy is minimal. The same is true of other components and the justification for this approach is that it is considered to provide an illustration of gender (in)equality irrespective of a country's level of economic development. Each of the four dimensions is further discussed below, contributing to a critical appreciation of the Index.

There are good reasons for suspecting that the Index might not fully (or even adequately) capture how life is for women and men in terms of gender equality and life as a whole. One major reason for this is that the four dimensions and their components can only present a narrow picture of what is a complex situation. This is perhaps most apparent with the health and survival sub-index, which comprises just two ratios: the birth ratio between men and women and the healthy life expectancy ratio. Clearly much is missing. Similarly, the political engagement ratio consists of three statistics: the ratio of women with seats in parliament compared to men; the ratio of women to men at ministerial level; and the number of years when the country has had a female head of state. Furthermore, as the authors of the WEF report acknowledge 'a clear drawback in this (political empowerment) category is the absence of any indicators capturing differences between the participation of women and men at local levels of government' (World Economic Forum 2016, p. 7).

Given that Nicaragua has scored particularly high on the political empowerment sub-index, it is worth discussing further. Even though in Nicaragua females are reasonably well represented in government and the political system, it has been argued that the female politicians are not independent and merely provide an additional voice for the president (Ruiz Seisdedos and Grande Gascón 2015). The same weakness has been highlighted at a more local level (for example, Flores et al. 2016). One reason for this could be that some governments initially adopted gender quotas for symbolic reasons, in order to gain support and

<sup>2</sup> A full list of these 14 ratios is provided in the "Appendix".

sympathy from female voters (Chen 2010; Sagot 2010). In the political arena, such gender equality initiatives are often criticised by scholars who believe that they only lead to quantitative success rather than resulting in radically transformed policy outcomes (Htun and Jones 2002). For example, by enabling a rise in ratios and indices such as the WEF's with a potentially negligible (or even zero) effect on the lives of the population. Other authors have doubted the independence of female politicians, arguing that the great majority of them are related to male politicians (Blázquez Vilaplana and Ruiz Seisdedos 2002). It has also been argued that this reflects unwritten cultural rules/the existence of a patriarchal state, in which improvements to women's status are sanitized, while pre-existing (inherited) structures of marginalization are left intact (Piscopo 2015). In summary, Nicaragua scores relatively high in the political empowerment dimension, which is responsible for a considerable proportion of its high position on the GGG Index. However, as we have seen, this rank may not adequately reflect gender equality in the political realm.<sup>3</sup> The next subsection returns to the Nicaraguan context in more detail.

Moving on to economic participation, as Barns and Preston (2010) amply demonstrate, here too these broad measures miss out on many other important nuances. Australia has a high score for female economic participation, but, as Barns and Preston show, this substantially reflects the rise of casual and part-time work. Similarly, there is some evidence of a gender divide in labour force participation in Nicaragua too: a time-use study in Nicaragua finds that men spent more hours per day in paid employment (approximately seven) than did women (approximately two), whereas women spent more hours per day in unpaid activities (approximately six compared to one for males) (Ferrant 2014), which is possibly a pattern that starts early in life. There is also evidence of substantial gender differences in time use among adolescents in Nicaragua (Ritchie et al. 2004).

Additionally, labour market statistics like those used for the Index can ignore further complexity.<sup>4</sup> People may be underemployed or overeducated for their jobs, which is known to reduce life satisfaction (see Erdogan et al. 2012 and Piper 2015a), or may be in precarious employment situations previously demonstrated to be problematic for mental health (see, for example, Dawson et al. 2015). World Bank data supports the possibility of a gender difference with respect to vulnerable employment, at least over the period during which the GGG Index has been compiled, showing that the percentages of females in vulnerable employment are higher than those of males (World Bank 2017a, b).<sup>5</sup>

The final dimension assesses the gender gap with respect to educational participation. To do so, it uses four statistics from the same organisation, the United Nations Educational, Scientific and Cultural Organisation. Three of these statistics are on enrolment at the three broad stages of education (primary, secondary and tertiary) and the fourth is on literacy

<sup>3</sup> The Nicaraguan poet and political activist Gioconda Belli summarises some views on what effective female representation might look like, and how it can fail: "It is a big step to have women as presidents, but in the patriarchal structure of power we have all inherited, very often women are still forced to prove that they are as "tough" as the toughest of men. A woman president who would defy the masculine model of power and infuse it with the feminine ethic of caring and real equality is still in the making" (Belli 2016).

<sup>4</sup> A common explanation in developing countries for a small gender gap for economic variables is that even though female labour force participation is quite low relative to males, female labour market participants have higher average education and skills than male participants. Such indices do not control for this selectivity, and often once controlled for the gender gap re-appears. I thank an anonymous reviewer for this suggestion about potential additional bias in the GGG Index.

<sup>5</sup> The World Bank defines vulnerable employment as contributing family workers and own-account workers as a percentage of total employment. See the detail here for further information: <https://data.worldbank.org/indicator/SL.EMP.VULN.ZS?view=chart>.

rates. As with the other dimensions, much can be considered missing and it is not difficult to find grounds for criticism. For example, in some countries there might be systematic gender differences in achieved grades on completion of stages of education, something not possible to pick up with a reliance on enrolment data. Overall, with all four dimensions, there are many reasons to treat the Index with caution.

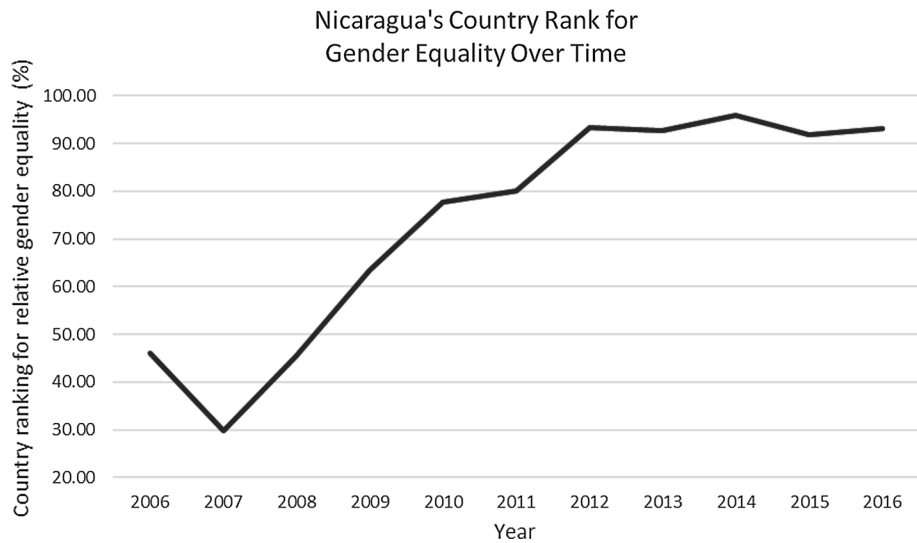
We should remember that the GGG Index does not measure levels. Nicaragua's high placing does not take into account its level of development. The situation for females will improve alongside men if there is economic development and a concomitant reduction in poverty (and of course such gains are shared amongst the sexes). If this gain is equally shared among the sexes, the Index would not record any change, though the lives of females have become objectively better. Similarly, if the situation is bad for both genders, but similarly bad, the Index will report (accurately) a narrow gender gap. Furthermore, the Index does not consider situations where females might be doing better than men. As an example, school enrolment at the secondary level: if more females enrol than males (and in Nicaragua in 2017 they did), this is counted as perfect gender equality. The same or better, on any measure, is considered gender equality with the exception of the two health measures, where parity is considered 0.94 female to male births and 1.06 female to male life expectancy being considered parity. With the exception of life expectancy, there is the basic assumption that there is nothing in which women will be better off than men. However, in 2017, females in Nicaragua enrolled in primary and secondary education in greater proportion than males, they were (slightly) more represented as professional and technical workers, and they were found in more ministerial positions than males.

Given these concerns, it is important not to take the Index at face value and automatically assume that increases necessarily signal improvements. An empirical analysis of these issues is presented in Sects. 3 and 4, which follow a discussion of the Nicaraguan context and a brief recapitulation of the issues covered so far.

## 2.2 Contextual Background: Nicaragua and the Index

Figure 1 illustrates how Nicaragua's country ranking for gender equality has changed over time in percentage terms (the higher the percentage, the higher the relative position). The Global Gender Gap methodology has been consistent since its inception in 2006, but the number of countries in the ranking has increased. This is important since, for example, as Barns and Preston (2010) point out Australia's ranking has fallen slightly since 2006, but its gender gap (as measured by Australia's overall score in the Index) has narrowed slightly over this period. Rankings must therefore be considered in the context of the number of countries assessed. One method of accounting for changes in the number of countries assessed is to convert absolute ranks to percentages, as in Fig. 1.

Figure 1 shows that Nicaragua was just above the bottom quartile of gender-equal countries in 2007, but in the top 5% in 2014. In 2016, Nicaragua ranked equal first for educational attainment (with no gender gap) and equal first for the broad dimension of health and survival (with a minimal gender gap, scoring 0.98 for health and survival equality on a scale of 0 to 1). It was ranked fourth for political empowerment, but ninety-second for economic participation and opportunity. The years where it is within or very close to the top 10% of all countries for gender equality (2012 onwards), exhibit a broadly similar pattern. Nicaragua is ranked high in three of the four dimensions, and its greatly above average



**Fig. 1** Nicaragua's country rank for gender equality over time. *Note:* Based on the World Economic Forum's GGG Index. 100% represents the most gender equal country; 0% represents the least

ranking predominantly reflects the political sphere, particularly the number of female ministers and women in parliament more generally.<sup>6</sup>

Following on from Fig. 1, we can talk about a period of time during which Nicaragua's gender gap according to the Index was quite wide (2006–2009), and a period during which it was quite narrow (2012–2016). For major macroeconomic variables, there have been some instances of change between these two periods, but other variables have remained fairly static.

Among indicators showing some evidence of change, World Bank Figures (2018) show that Nicaragua's real GDP has grown at approximately 5% per year since it last receded in 2009, in response to the economic crisis.<sup>7</sup> Annual inflation (measured by consumer prices) was higher in the 'wide gender gap' period than in the 'narrow gender gap' period, ranging from 9 to 19% in the first compared with 4 to 8% in the second. Unemployment has fallen from 8% to between 5 and 6% of the total labour force [based on an International Labour Organisation (ILO) modelled estimate].

However, the unemployment figures demonstrate little difference by gender, and haven't since the first year of ILO equivalent figures (i.e. since 1991). Nicaragua's exports and imports and its trading partners have remained largely unchanged. Although not crucial for the subsequent analysis, the gravity model holds up somewhat with respect to Nicaragua's trading partners: over half of its exports go to the USA, with much of the rest going to neighbouring countries and these countries are also the main source of its imports. Its main exports are from the clothing and food sectors, and its imports being related to broad

<sup>6</sup> This is because where Nicaragua is equal first (educational attainment, health and survival), it is equal first with many countries, thus not especially contributing to its high rank, unlike the political empowerment dimension where its equal first position is much less widely shared.

<sup>7</sup> 2009 appears to be a blip in the trend, with growth for that year being  $-3.8\%$ , followed by the economy restarting a period of consistent growth in 2010.

categories of mineral fuels, oils, and electrical machinery. Over this period, Nicaragua has run a small trade deficit.<sup>8</sup>

While the economy has improved, the concerns expressed with regard to Nicaraguan society and gender have not. For example, in 2006 a law was passed making abortion illegal in any circumstance; a law that has not been repealed since despite many protests (Aizenman 2006; Human Rights Watch 2017). Joffe et al. (2004) discuss abortion and the rights of women further. Other issues central to the lives of women in Nicaragua include domestic violence, poverty and the division of labour within the household, particularly regarding parenting and housework. These are discussed below.

The issue of violence against women in Nicaragua has been attracting growing attention over the past few years. For example, a study predating the GGG Index estimated that one out of every two women in Nicaragua had experienced some form of violence in her lifetime (Ellsberg et al. 2000). More recently, in 2012, Nicaragua passed a comprehensive law addressing violence against women [*Ley Integral Contra la Violencia Hacia Las Mujeres*, or *Ley 779*; (Nicaragua 2012)]. However, 2 years later, the law was reformed, retracting part of the law that banned mediation for cases of violent assault or sexual harassment (“Nicaraguan women...” 2013). Luffy et al. investigated women’s perceptions and opinions of violence against women and femicide in Ocotol (a town in the North East of Nicaragua) since the introduction of Law 779 and found that this reform is widely regarded as a threat, likely to put women’s lives at risk (2015). One explanation could be that many women are economically reliant upon their partners and will therefore not agree to face them. Fearing the response/reaction of their partner, they may deny their suffering and reconcile with their abusive partner. Furthermore, the participants investigated perceived that the law has actually resulted in an increase rather than a decrease in femicide. They suggested that this (perceived) increase could be caused by underlying issues such as weak enforcement by the National Police and machismo among the men in Ocotol, Nicaragua.

Poverty, both in Nicaragua and more generally, is often considered something that females suffer from more than males (Jackson 1996; Espinoza-Delgado and Klasen 2018) although differences between urban and rural settings have been observed in the proportions of male and female headed households and in the incidence of poverty (Altamirano Montoya and Teixeira 2017). Gibbons and Luna (2015) expand on this, reporting that the proportion of female headed households is increasing in Central America, and such households are often poorer than male households (Luchsinger 2017). Gibbons and Luna also cite ethnographic studies to provide an indication of the problems female headed households suffer from in the region. These complaints are often about a lack of support, both financially and with raising children, which can be a problem even if the fathers are not physically absent. Lancaster (1994), cited by Gibbons and Luna, offers an example: one Nicaraguan mother wryly said of her husband, “there apparently isn’t a woman in the world he can say no to! And he isn’t supporting any of his children, not really—well, anyway, he isn’t supporting mine” (Lancaster 1994, p. 45). As Gibbons and Luna highlight, this is not just a Nicaraguan issue, or an issue from the recent past: A Ladina woman in Guatemala said, among similar statements “it’s just me, by myself. So yes, even when he’s home, I’m the one in charge of the kids” (Menjívar 2011, p. 150). Further differences between the genders with respect to sexual relationships and parenting, are provided by Gibbons and Luna (2015), who consider gender roles and related (and established) ideologies, for example both machismo and Marianismo, to be responsible for behavioural gender disparities like those illustrated just above.

<sup>8</sup> This international trade information is from the Atlas of Economic Complexity ([www.atlas.cid.harvard.edu](http://www.atlas.cid.harvard.edu)).

Some of the issues mentioned above are often found in combination with each other. For example, poverty and violence are often interlinked. The latest United Nations Women Annual Report explains that females living along the North Atlantic coast of Nicaragua have benefited from a UN trust fund because of the violence they face. This, the report states, is particularly the case for indigenous women who are marginalized by poverty and discrimination (Luchsinger 2017).

The GGG Index, if credible, indicates a substantial improvement in the lives of women since the mid-2000s in Nicaragua; however, as this subsection indicates, there is still cause for concern regarding the lives and roles of females. One way to check what the index appears to show is to test whether people's opinions about, or satisfaction with, their lives and their opinions about gender equality in their country (for example) have changed over the same period. If improvements recorded in the Index are matched by greater satisfaction manifested in what people (and particularly females) say, while controlling for other known and important factors that influence well-being, then we can have a modicum of confidence that the Index reflects lived experience (at least in Nicaragua, and for the period since the Index's inception).

The next subsection explains how this investigation inspects the lives of women over this period through the prism of the 'economics of life satisfaction' area.

### 2.3 Summary and the Economics of Life Satisfaction

One of the purposes of many indices like the WEF's GGG Index is to inform—however imperfectly—about the lives of individuals. In the case of Nicaragua, based on the Index, we can reasonably expect that the lives of women have improved over the life of the index. However, this should not be assumed. Clearly, there are reasons not to take the Index and Nicaragua's high position in it at face value. To summarise what has been mentioned above, any index will fail to capture all, or even the majority of, pertinent aspects of a complex issue, and the GGG Index is no different.

The Index itself also provides grounds for caution regarding reading too much into the sharp rise in Nicaragua's country ranking for gender equality. Although Nicaragua has climbed a very long way in terms of country rankings, the actual figures for the gender gap index indicate a more modest closing of the Nicaraguan Gender Gap (though, as established, larger than every other Latin American country). While the improvement is better than nearly every other country, the rise represents a change in the WEF score of about 0.12, from 0.6747 in 2008 to 0.7967 in 2012 (where 1.00 is supposed to represent equality on the scale, although if women were to score higher than men, the score would still be 1). Nevertheless, if this improvement is matched by how people feel, a change of this magnitude should be detectable in a reasonable quality secondary dataset. The next section attempts to do just that—to detect the same change in a different dataset.

The main way this is investigated is via the economics of life satisfaction research area. The economics of life satisfaction is an established, and validated, research area with a broad scope [see for example, Oswald (1997) and the introductory discussions of Frey et al. (2008) and van Praag and Ferrer-i-Carbonell (2007)]. Investigations in this area often have a regional focus (Oswald and Wu 2010; Piper 2015b; Jantsch et al. 2016; Morrison and Weckroth 2018) and have also been concerned with respect to issues of importance for the lives of females (Ambrey et al. 2017; Ebbens and Piper 2017). A central thrust of this research area is that it is both possible and worthwhile to investigate individual well-being. In line with this research area, subjective data about individual satisfaction with life can be used to assess individuals'



**Table 1** Descriptive statistics: key socioeconomic variables, by gender, Nicaragua

	Females		Males	
	2006–2008	2011–2015	2006–2008	2011–2015
Life satisfaction (1–4)	2.94	3.14***	2.95	3.16***
Income: sufficient	0.04	0.06**	0.06	0.08**
Income: just sufficient	0.22	0.32***	0.28	0.33***
Income: insufficient	0.48	0.45*	0.45	0.42
Income: v. insufficient	0.26	0.17***	0.21	0.16***
Socioecon lvl: v. good	0.05	0.04	0.06	0.05
Socioecon lvl: good	0.23	0.22	0.23	0.22
Socioecon lvl: not bad	0.41	0.40	0.42	0.41
Socioecon lvl: bad	0.21	0.24**	0.20	0.23**
Socioecon lvl: v. bad	0.09	0.08	0.09	0.07**
Age	35.17	35.43	35.42	35.60
Self-employed	0.23	0.22	0.51	0.49
Employed	0.15	0.13	0.24	0.23
Unemployed	0.05	0.04**	0.06	0.07
Retired	0.01	0.01	0.03	0.04
Student	0.08	0.06*	0.08	0.08
Not in labour market	0.48	0.54***	0.07	0.09*
Partnered/married	0.55	0.57	0.57	0.55
Single	0.33	0.34	0.38	0.41
Separ/divor/widowed	0.11	0.09**	0.05	0.04
Educ: illiterate	0.22	0.22	0.25	0.24
Educ: incomp. primary	0.29	0.22***	0.29	0.22***
Educ: comp. primary	0.11	0.14***	0.11	0.16***
Educ: incomp. second	0.25	0.19***	0.22	0.20
Educ: comp. second	0.07	0.12***	0.05	0.10***
Educ: incomp. higher	0.02	0.06***	0.04	0.05
Educ: comp. higher	0.03	0.04	0.04	0.03

Data from the Latinobarometer; both the columns feature 3 years of data (there is no available data for 2012 and 2014); the stars represent significant differences between the two time periods \*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$ ; both the columns feature 3 years of data (there is no available data for 2012 and 2014). All are dummy variables apart from life satisfaction (positively coded) and age

opinions of the lives they are living. Thus, the next two sections present such an assessment: in Sect. 3 the data and methodology are discussed, before the results are presented in Sect. 4.

### 3 Data and Method Used

The empirical analysis makes use of data from the Latinobarometer.<sup>9</sup> Collected in most years since 1995, it is an oft-used source of information about people's socioeconomic characteristics, values, beliefs and opinions in Latin America. Table 1 indicates that both

<sup>9</sup> Freely available online ([www.latinobarometro.org/lat.jsp](http://www.latinobarometro.org/lat.jsp)).

**Table 2** Descriptive statistics: subjective ratings of indicators of national equality, by gender

	Females		Males	
	2006–2008	2011–2015	2006–2008	2011–2015
Gender equality (1–4)	2.67	2.86***	2.87	2.93*
Democracy (1–10)	5.48	6.26***	5.36	6.36***
Income distribut. (1–4)	2.11	2.31***	2.15	2.36***
Country for powerful	0.74	0.49***	0.74	0.51***

Data from the Latinobarometer; both the columns feature 3 years of data (there is no available data for 2012 and 2014). Gender equality refers to an individual's opinion about whether males and females have equal rights (higher numbers indicating higher agreement); democracy refers to satisfaction (higher numbers representing higher satisfaction); income distribution is an opinion about income inequality (higher numbers indicate a belief of less inequality). The remaining variable is a dummy asking if the respondent believes that the country is run for the powerful (1 = agreement). The stars represent significant differences between the two time periods \*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$ .

sexes have reported a higher level of average happiness in the later period. This might reflect the decreased gender inequality, but it could also reflect changing economic circumstances (among other things), hence there is a need for regression analysis. Averages for the subjective income measure have changed a little, although the proportions for the interviewer ranking of the respondent's socioeconomic level have not really changed between the two time periods.<sup>10</sup> The averages in Table 1 also demonstrate a higher level of education reported by respondents in the later years (although we cannot know if this reflects increased education generally or just the new respondents). Also notable in Table 1 is the difference between the genders with respect to labour force status. In both time periods, half of all females are not in the labour force, compared with less than 10% of males. A substantial amount of this difference is explained by the higher prevalence of males who report being self-employed.<sup>11</sup> Finally, a weakness of the data relates to health, which is an important component in the life satisfaction of an individual, but is largely lacking in the Latinobarometer, hence its omission in the analysis below.<sup>12</sup>

Assuming that we accept that the individuals surveyed represent the population, then Table 2 indicates cautious evidence of progress with social equality goals, or at least perceptions of progress. All four averages (relating to gender, democracy, income inequality and a dummy variable asking respondents whether they believe the country is run for the powerful) demonstrate an increase towards more equality, both when the assessment is made by both women and men. Of greatest interest for this investigation, of these four averages, is the four-point scale about gender equality. As the note below the table states, this is from a question asking respondents to indicate on a scale of 1 to 4 to what extent equality

<sup>10</sup> These subjective categories are used here, because the Latinobarometer does not contain absolute wage or income data.

<sup>11</sup> A high incidence of self-employment is expected in Nicaragua and indeed more widely in Latin America. The Latinobarometer breaks down the self-employed into four further categories. The generic self-employment category Business Owner is the most frequent, followed by fisherman, and then self-employed within the informal sector. All three categories are much more important (in terms of frequency) for self-employment than the fourth possibility: self-employed professional.

<sup>12</sup> Other popular datasets which might ordinarily be considered, for example the World Values Survey, contain no data from Nicaragua.

of men and women exists in Nicaragua. The table suggests general progress here, although the 2015 figure is lower than the 2013 average for both genders (data not shown).<sup>13</sup>

Regression analysis is needed for a more detailed investigation of whether people (females especially) experience life in a way concomitant with the closing of the gender gap. With two different outcome variables—life satisfaction (of females); and gender equality—the estimations aim to determine whether the information in the Latinobarometer supports the remarkable closing of the gender gap in Nicaragua that is indicated by the WEF's reports. Given the ordinal nature of these three variables, and because the scales contain only four possible responses, ordered probit estimation will be used for the regressions. Our main interest is whether both genders are, on average, more satisfied with their lives and whether they consider that gender equality applies more fully in Nicaragua.<sup>14</sup>

## 4 Results

The first of the two outcome variables investigated is life satisfaction. If life is getting better for Nicaraguans, and particularly females, this should be demonstrable empirically with regression analysis. Table 3 presents the coefficients obtained and the variable of key interest is the dummy variable for the narrow gender gap period. The period with the narrower gender gap is associated with more life satisfaction than the wider gender gap period; a result that, for females, holds when GDP growth is controlled for.<sup>15</sup> As Sect. 2 highlighted, GDP growth was also higher in the period with a narrow gender gap, and as expected, GDP growth does play a moderating role on the size of the coefficients for the narrow gender gap period; a result indicative of GDP growth contributing to the subjective well-being of female Nicaraguans. For males the moderating influence is complete, fully accounting for the increased life satisfaction in the narrow period.<sup>16</sup> The coefficients for income, interviewer rated socio-economic level, and age are as expected based on previous literature.

Thus Table 3 presents initial evidence of more life satisfaction for females in the time period when the gender gap is narrow. Given that the country rank is a relative measure, this issue can be further investigated by using the actual ratios using figures from the GGG Index, and by making comparisons with other countries. These additional investigations are described briefly and the key coefficients are presented in Table 4 below. The composite ratio which is the overall GGG index is positively associated with the life satisfaction of females. For Nicaragua, as mentioned above, the rise in this overall ratio comes mainly from the political and economic components (see Appendix 2 for the figures). The inclusion/exclusion of either (or both) of the political empowerment and economic participation subindices does not alter this positive association.

A candidate country to compare Nicaragua with is Guatemala, a near neighbour of Nicaragua in Central America. Furthermore, Guatemala is a good comparison candidate because it has always performed relatively poorly in the GGG reports being rarely out of

<sup>13</sup> This may reflect, to some extent, revocation of an important provision of Law 779, as discussed in Sect. 2.2.

<sup>14</sup> The Latinobarometer does have a question about violence against women, but it was only asked in one year (2006), thus no comparisons can be made between the two periods of interest.

<sup>15</sup> Throughout the empirical analysis GDP level was also used as a control instead of GDP growth with very similar results.

<sup>16</sup> In all of the estimates, if the level of real GDP is used instead of GDP growth per capita the results are qualitatively unchanged. In the male estimates in Table 2, and in the alternative case of controlling for the level of GDP, the 95% confidence intervals for the narrow period dummy variable do overlap.

**Table 3** Life satisfaction of Nicaraguans, ordered probit coefficients, Latinobarometer data

Variables	(1) Life satisfaction females No GDP growth control	(2) Life satisfaction Males No GDP growth control	(3) Life satisfaction females GDP growth controlled for	(4) Life satisfac- tion males GDP growth controlled for
Narrow gender gap dummy	0.19*** (0.046)	0.18*** (0.046)	0.13** (0.061)	0.06 (0.061)
GDP growth (%)			0.06 (0.040)	0.12*** (0.039)
Income: sufficient	0.11 (0.102)	0.13 (0.090)	0.11 (0.102)	0.13 (0.090)
Income: insufficient	-0.25*** (0.050)	-0.31*** (0.049)	-0.25*** (0.050)	-0.31*** (0.049)
Income: very insufficient	-0.45*** (0.064)	-0.48*** (0.068)	-0.45*** (0.064)	-0.47*** (0.068)
Socioeconomic level: v. good	0.11 (0.109)	0.23** (0.104)	0.11 (0.109)	0.23** (0.104)
Socioeconomic level: good	0.08 (0.055)	0.05 (0.056)	0.09 (0.055)	0.05 (0.056)
Socioeconomic level: bad	-0.15*** (0.055)	-0.07 (0.056)	-0.15*** (0.055)	-0.08 (0.056)
Socioeconomic level: very bad	-0.25*** (0.083)	-0.13 (0.088)	-0.25*** (0.083)	-0.13 (0.088)
Have partner or married	-0.00 (0.050)	0.19*** (0.053)	-0.00 (0.050)	0.18*** (0.053)
Separated, divorced or widowed	-0.19** (0.082)	-0.02 (0.110)	-0.20** (0.082)	-0.03 (0.110)
Age	-0.02*** (0.007)	-0.03*** (0.007)	-0.02*** (0.007)	-0.03*** (0.007)
Age squared/100	0.03*** (0.008)	0.03*** (0.009)	0.03*** (0.008)	0.03*** (0.009)
Education: incomplete primary	0.04 (0.061)	-0.05 (0.060)	0.04 (0.061)	-0.05 (0.060)
Education: complete primary	0.05 (0.075)	0.02 (0.073)	0.05 (0.075)	0.02 (0.073)
Education: incompl. secondary	0.03 (0.070)	-0.06 (0.069)	0.04 (0.070)	-0.06 (0.069)
Education: completed secondary	0.13 (0.091)	0.08 (0.096)	0.13 (0.091)	0.07 (0.095)
Education: high school incompl.	-0.12 (0.116)	-0.06 (0.123)	-0.12 (0.117)	-0.04 (0.124)
Education: high school complete	0.09 (0.125)	0.35** (0.140)	0.09 (0.126)	0.36** (0.140)
Self-employed	0.03 (0.071)	-0.01 (0.053)	0.04 (0.071)	-0.01 (0.053)
Unemployed	-0.09	-0.19**	-0.07	-0.19**

**Table 3** (continued)

Variables	(1)	(2)	(3)	(4)
	Life satisfaction females No GDP growth control	Life satisfaction Males No GDP growth control	Life satisfaction females GDP growth controlled for	Life satisfaction males GDP growth controlled for
	(0.112)	(0.090)	(0.113)	(0.090)
Retired	0.22 (0.198)	-0.08 (0.137)	0.23 (0.200)	-0.09 (0.136)
Not in labour market	0.04 (0.064)	-0.18* (0.095)	0.04 (0.064)	-0.18* (0.095)
Student	0.16 (0.104)	-0.02 (0.099)	0.15 (0.107)	-0.03 (0.099)
Observations	2897	2814	2897	2814
Constant cut1	-2.25*** (0.180)	-2.56*** (0.177)	-2.01*** (0.240)	-2.08*** (0.242)
Constant cut2	-1.06*** (0.175)	-1.33*** (0.172)	-0.83*** (0.235)	-0.85*** (0.240)
Constant cut3	-0.08 (0.174)	-0.34** (0.171)	0.16 (0.235)	0.13 (0.240)

Notes: unclustered robust standard errors in parentheses; \*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$ ; base categories: income just sufficient; socioeconomic level not bad; single; education level illiterate; employed. The narrow gender gap dummy equals one in the 2011–2015 period and zero in the 2006–2008 period

**Table 4** A summary of the key coefficients obtained by the additional ordered probit life satisfaction estimations, females only

	Coefficient (incl. GDP control)	
GGG Index		
Overall	1.52***	
Not including the politics ratio	3.00***	
Not including the economics ratio	1.67***	
	No GDP growth control	GDP growth controlled for
Nicaragua and Guatemala		
Narrow period dummy	0.09**	0.13***
Narrow period × Nicaragua	0.10	0.003
All 18 Latin American countries		
Narrow period dummy	0.10***	0.13***
Narrow period × Nicaragua	0.12***	0.07

The full set of controls from Table 2 is employed

\*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$

the bottom third of countries in the Index. The resulting coefficients in Table 4 demonstrate the importance of taking account of economic fundamentals (here via GDP growth, but GDP level gives very similar results). When GDP growth is not controlled for, evidence

is found indicating that Nicaraguan and Guatemalan females are more satisfied with life in the 2011–2015 period; however, as indicated by the interaction term coefficient, there is no additional life satisfaction for Nicaraguan females in this period compared with Guatemalan females ( $p=0.111$ ). This is a result which does not change when GDP growth is controlled for. An extra comparison was made with all of the countries in the Latinobarometer, with the same two dummy variables (as well as all of the previously used controls). The changes in the GGG index of these other seventeen countries in the wide and narrow periods are as follows: in the economic dimension only, improvements were experienced in Guatemala and Honduras; in the political empowerment dimension only, improvements were noted in Bolivia, Brazil, and Costa Rica; improvements in both the economic and political dimensions were recorded in Ecuador and Mexico. Changes in other countries were negligible. The results of the key coefficients indicate an additional life satisfaction benefit for Nicaraguan females compared to other Latin American females, but this result is fully moderated by GDP growth.<sup>17</sup> Thus, it is difficult to conclude with much confidence that the GGG Index gives much indication about how Nicaraguan females feel about their life.

In summary the gathered evidence suggests only limited support that the reported closing of the gender gap in Nicaragua is associated with an improvement of the life satisfaction of its females. There is an association with more life satisfaction in the narrow period, and the actual ratios from the GGG Index are also positively associated with individual life satisfaction; however when GDP growth is taken into account no difference could be found in comparison with other countries where such an extensive gender gap narrowing was not reported. Even if the closing of the gender gap does not seem to be associated with much increased life satisfaction for females, is it linked to better perceptions of gender equality in Nicaragua?<sup>18</sup>

In Table 5, the outcome (dependent) variable relates to individual perceptions regarding gender equality. As mentioned in the previous section the Latinobarometer survey contains an item asking whether their country guarantees the equality of women and men. Responses are possible via a four-point Likert scale, with higher numbers indicating more agreement. Without controlling for GDP, there is evidence that females (though not males) rated gender equality as more protected by the government in the narrow gender gap period. However, the statistical significance of this association falls to below conventional levels when GDP growth (or GDP level, not shown) is controlled for (the  $p$  value is approximately 0.14). Taken together, columns 1 and 3 suggest that the higher GDP growth of the narrow gender gap period drives the higher subjective rating assessing how well the Nicaraguan government protects gender equality.

Table 6 follows the same analysis as that in Table 4, with the protection of gender equality being the outcome variable rather than life satisfaction.

Table 6 further emphasises the importance of economic fundamentals. These three ways of capturing all or key aspects of the GGG Index demonstrate the necessity of the economic participation and opportunity sub index for the Index to have any association with how Nicaraguan females think about gender equality. The country comparisons demonstrate no special association for Nicaragua compared to either Guatemala or a range of Latin American countries when GDP growth is controlled for.

<sup>17</sup> These results come from estimates using unclustered robust standard errors, with country dummies as part of the controls. Clustering the standard errors on the individuals countries results in very similar coefficients obtained.

<sup>18</sup> Adding gender equality as an additional control does not alter the results of Table 2. This is indicative that perceptions of gender equality do not really contribute or moderate the life satisfaction of Nicaraguans.

**Table 5** Nicaraguans' opinions regarding how well the country guarantees equality between the genders, ordered probit coefficients, Latinobarometer data

Variables	(1) Gender equality Females No GDP growth control	(2) Gender equality Males No GDP growth control	(3) Gender equality Females GDP growth controlled for	(4) Gender equality Males GDP growth controlled for
Narrow gender gap dummy	0.15** (0.063)	0.00 (0.063)	0.10 (0.074)	0.08 (0.074)
GDP growth (%)			0.05 (0.042)	-0.09** (0.041)
Income: sufficient	-0.07 (0.112)	0.02 (0.104)	-0.03 (0.110)	0.02 (0.104)
Income: insufficient	-0.07 (0.062)	-0.06 (0.054)	-0.01 (0.054)	-0.06 (0.054)
Income: very insufficient	-0.16* (0.082)	-0.09 (0.067)	-0.04 (0.063)	-0.09 (0.067)
Socioeconomic level: v. good	0.25** (0.111)	0.05 (0.126)	0.27** (0.112)	0.05 (0.126)
Socioeconomic level: good	-0.09 (0.067)	0.02 (0.066)	-0.08 (0.067)	0.02 (0.066)
Socioeconomic level: bad	-0.02 (0.069)	-0.02 (0.070)	-0.03 (0.069)	-0.01 (0.070)
Socioeconomic level: very bad	0.16 (0.105)	-0.18* (0.106)	0.13 (0.104)	-0.18* (0.106)
Have partner or married	-0.04 (0.059)	-0.06 (0.067)	-0.04 (0.059)	-0.05 (0.067)
Separated, divorced or widowed	-0.08 (0.103)	-0.13 (0.126)	-0.08 (0.104)	-0.12 (0.126)
Age	-0.01 (0.009)	-0.01 (0.009)	-0.01 (0.009)	-0.01 (0.009)
Age squared	0.01 (0.011)	0.01 (0.011)	0.01 (0.011)	0.01 (0.011)
Education: incomplete primary	0.04 (0.078)	0.01 (0.078)	0.04 (0.078)	0.01 (0.078)
Education: complete primary	0.16* (0.096)	-0.07 (0.094)	0.17* (0.096)	-0.07 (0.094)
Education: incompl. secondary	0.06 (0.088)	0.02 (0.087)	0.08 (0.087)	0.02 (0.088)
Education: completed secondary	-0.02 (0.111)	-0.22** (0.110)	0.00 (0.111)	-0.22** (0.110)
Education: high school incompl.	0.02 (0.151)	-0.11 (0.146)	0.05 (0.150)	-0.14 (0.148)
Education: high school complete	-0.02 (0.147)	-0.04 (0.150)	0.00 (0.147)	-0.05 (0.150)
Self-employed	-0.13	-0.03	-0.12	-0.03

**Table 5** (continued)

Variables	(1) Gender equality Females No GDP growth control	(2) Gender equality Males No GDP growth control	(3) Gender equality Females GDP growth controlled for	(4) Gender equality Males GDP growth controlled for
Unemployed	(0.085) -0.07	(0.066) -0.26**	(0.085) -0.05	(0.066) -0.26**
Retired	(0.129) -0.01	(0.105) -0.40**	(0.131) -0.01	(0.105) -0.39**
Not in labour market	(0.251) -0.10	(0.164) -0.03	(0.255) -0.09	(0.163) -0.05
Student	(0.077) -0.22*	(0.116) -0.10	(0.077) -0.23*	(0.116) -0.08
Observations	(0.125) 1840	(0.124) 1823	(0.132) 1840	(0.124) 1823
Constant cut1	1.53*** (0.219)	1.80*** (0.212)	1.22*** (0.308)	2.23*** (0.310)
Constant cut2	0.72*** (0.217)	1.03*** (0.210)	0.40 (0.307)	1.46*** (0.308)
Constant cut3	0.16 (0.216)	-0.19 (0.209)	0.47 (0.307)	-0.62** (0.307)

Unclustered robust standard errors in parentheses; \*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$ ; base categories: income just sufficient; socioeconomic level not bad; single; education level illiterate; employed. The narrow gender gap dummy equals one in the 2011–2015 period and zero in the 2006–2008 period

**Table 6** A summary of the key coefficients obtained by the additional ordered probit gender equality estimations, females only

		Coefficient (incl. GDP control)
GGG Index		
Overall		0.91*
Not including the politics ratio		2.37**
Not including the economics ratio		0.73
	No GDP growth control	GDP growth controlled for
Nicaragua and Guatemala		
Narrow period dummy	0.20***	0.19***
Narrow period × Nicaragua	-0.05	0.02
All 18 Latin American countries		
Narrow period dummy	0.12***	0.15***
Narrow period × Nicaragua	0.11*	0.05

The same control variables as with Table 2 are employed here

\*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$



At best, the results provide weak evidence that the GGG Index is indicative of how females feel about their lives. This weak evidence is based upon estimates that either only consider Nicaragua (Table 3) or when the ratios themselves are directly considered (top part of Table 4). Our results instead suggest that economic considerations are important for how satisfied females are with their lives: the individual coefficients on the insufficient and very insufficient subjective income measures are negatively (and with the largest coefficients of all included variables) related to life satisfaction; the country comparisons (bottom part of Table 4) emphasise that GDP growth seems to be driving any life satisfaction premium experienced by Nicaraguan females (over and above countries reported as being less gender equal) in Nicaragua's more gender equal period. Furthermore, this primacy of economic fundamentals is supported by the investigation of perceptions of how well gender equality is protected by the government.

## 5 Limitations and Suggestions for Future Research

As with every study using the Latinobarometer, it is important to highlight that the data is repeated cross-section data. Because the same people are not interviewed, we cannot be sure that any differences are not simply due to the change in individuals. However the comparison relies on the averages from nearly 3000 Nicaraguans in each period and, furthermore, the Latinobarometer is representative of the Nicaraguan population (Graham 2012). A further limitation is with respect to health, a very important aspect of life satisfaction (Downward and Dawson 2016; Piper 2018).<sup>19</sup> health is Self-reported health data is first available in the Latinobarometer in 2001 and too intermittently for analysis since then. There are other questions that the Latinobarometer asks that would be interesting for investigations of gender and well-being, but they do not appear in both the period when Nicaragua was ranked near the bottom and when it was ranked near the top for gender equality. For example, a question about violence against women was only asked in the 'wide gap' period. In the 'narrow gap' period, the Latinobarometer elicited opinions about whether respondents think that their country's education system puts them at a disadvantage (with one potentially disadvantaged group being women). In 2015, questions were also asked about the difficulties women face in the labour market.<sup>20</sup>

Future work might address these limitations with specific datasets; a qualitative investigation into changes in gender equality over time in Nicaragua would likely be fruitful and highlight nuances that the WEF's index misses. More generally, future work could assess other phenomena that arise from a comparison of different years of the GGG Index and its related reports. The closing of the Nicaraguan gender gap is one of the more striking developments, but there are likely others too. As Barns and Preston (2010) assert, if such indices are being used by politicians to praise their own policies, they should also be scrutinized by academics.

<sup>19</sup> However, if gender inequality causes health problems, then health would be a bad control variable.

<sup>20</sup> There are other relevant questions that were not asked in both periods. For example individuals are asked how strongly they agree or disagree with the following statements 'If the woman earns more than the man, she will almost certainly have problems' and 'It is preferable to have the woman in the house and man in his work'. It would be interesting to see how average levels of agreement changed between the two time periods.

## 6 Conclusion

The World Economic Forum's GGG Index is a popular measure of gender equality. Each year, when published it generates media attention, column inches, and blog posts. When the Index offers grounds for praise for some countries, politicians in these particular countries often talk about it too. This has been so in Australia (Barns and Preston 2010) and Nicaragua (see above). Despite its popularity, the Index is rarely subjected to academic scrutiny, and there are reasons why it should be. In short, gender equality is complex and no index can hope to capture all of its nuances and facets. Nicaragua has, based on the GGG Index, been one of the countries that has done the most to improve gender equality since the first year of the Index (2006). Women's rights advocates are rather sceptical about this perceived improvement, and offer comments about abortion, economic participation and violence against women as reasons for caution in praising Nicaragua for improving the lives of Nicaraguan women.

Rather than criticise the report and its methodology, this article takes it as inspiration to see whether one of the most notable trends illustrated in the report can be detected in a representative dataset. Looking at GGG Index data since its inception, it is possible to highlight two distinct periods of time in terms of the gender gap in Nicaragua: the first, a period in which the gender gap was wider, i.e. a period of greater gender inequality, spanning from 2006 to 2008, and the second, a period between 2011 and 2015, when the gender gap was narrow. Ordered probit regression estimation techniques and economics of life satisfaction methodology were used to test whether Nicaraguans, both male and female, were more satisfied with their lives in the narrow gender gap period than the wide period. Furthermore, estimates were also made for opinions about gender equality in Nicaragua.

Concomitant with the Index, both female and male Nicaraguans were more satisfied with their lives in the narrow gender gap period compared to the wide gender gap period. For females, this held even when GDP growth was controlled for; this is important given the better growth in the narrow, later period. Improvements in the GGG Index itself were found to be associated with improvements in life satisfaction for females too. However, country comparisons, including with Guatemala (a rather gender unequal country according to the GGG Index) did not highlight any special benefit for Nicaraguan females in the narrow gender gap period, particularly when GDP growth was controlled for. Finally, females noted an improvement in the narrow gap period compared with the wide gap period with respect to gender equality, a result that falls below conventional significance levels when GDP is controlled for. The objective GGG Index estimates emphasise the importance of economic fundamentals for how females feel about gender equality. When the economic participation and opportunity was not included in a composite Index, this composite index was not significantly related to female perceptions of gender equality. In summary, the evidence highlights the importance of the economy for the lives of females in Nicaragua, and is only slightly supportive of the WEF's GGG Index and one of the most remarkable occurrences over its life: the reported closing of the Nicaraguan gender gap.

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## Appendix

See Tables 7 and 8.

**Table 7** The components of Global Gender Gap Index

Subindex	Variable	Source
Economic participation and opportunity	Ratio: female labour force participation over male value	International Labour Organization (ILO), <i>Key Indicators of the Labor Market (KILM)</i> database, 9th edition, 2015
	Wage equality between women and men for similar work (survey data, normalized on a 0-to-1 scale)	World Economic Forum, <i>Executive Opinion Survey (EOS)</i> , 2015–2016
	Ratio: female estimated earned income over male value	World Economic Forum calculations based on the United Nations Development Programme methodology (refer to <i>Human Development Report 2007/2008</i> )
	Ratio: female legislators, senior officials and managers over male value	International Labour Organization, <i>ILOSTAT</i> database 2015 or latest available data
	Ratio: female professional and technical workers over male value	International Labour Organization, <i>ILOSTAT</i> database 2015 or latest available data
Educational attainment	Ratio: female literacy rate over male value	United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics, <i>Education indicators</i> , database, 2015 or latest data available; United Nations Development Programme, <i>Human Development Report 2009</i> , most recent years available between 1997 and 2007
	Ratio: female net primary enrolment rate over male value	UNESCO Institute for Statistics, <i>Education indicators</i> database, 2015 or latest data available
	Ratio: female net secondary enrolment rate over male value	UNESCO Institute for Statistics, <i>Education indicators</i> database, 2015 or latest data available
Health and Survival	Ratio: female gross tertiary enrolment ratio over male value	UNESCO Institute for Statistics, <i>Education indicators</i> database, 2015 or latest data available
	Sex ratio at birth (converted to female-over-male ratio)	Central Intelligence Agency, <i>The CIA World Factbook</i> 2016, data updated weekly
	Ratio: female healthy life expectancy over male value	World Health Organization, <i>Global Health Observatory database</i> , data from 2013

**Table 7** (continued)

Subindex	Variable	Source
Political Empowerment	Ratio: females with seats in parliament over male value	Inter-Parliamentary Union, <i>Women in Politics: 2016</i> , reflecting elections/appointments up to 1 June 2016
	Ratio: females ate ministerial level over male value	Inter-Parliamentary Union, <i>Women in Politics: 2015</i> , reflecting elections/appointments up to 1 June 2015
	Ratio: number of years with a female head of state (last 50 years) over male value	World Economic Forum calculations, reflecting situation as of 30 June 2016

Adapted from Table 1 of this webpage: <http://reports.weforum.org/global-gender-gap-report-2016/measuring-the-global-gender-gap/>

**Table 8** Overall Global Gender Gap Index, Economic Participation and Opportunity sub-index, and Political Empowerment sub-index for Nicaragua, 2006–2015

Sample		Index		Economy		Education	
Year	No. of countries	Rank	Score	Rank	Score	Rank	Score
2015	145	12	0.776	100	0.619	4	0.506
2014	142	6	0.789	95	0.635	4	0.544
2013	136	10	0.771	91	0.622	5	0.489
2012	135	9	0.770	88	0.615	5	0.489
2011	135	27	0.725	79	0.619	21	0.304
2010	134	30	0.718	94	0.591	19	0.304
2009	134	49	0.700	104	0.563	25	0.262
2008	130	71	0.675	117	0.461	23	0.262
2007	128	90	0.646	117	0.434	28	0.181
2006	115	62	0.657	101	0.463	25	0.192
2006–2015 change			$\Delta$ 0.120		$\Delta$ 0.156		$\Delta$ 0.315

Adapted from page 287 of the Global Gender Gap Report 2015 (<http://www3.weforum.org/docs/GGGR2015/cover.pdf>). Raw data used for the Overall GGG index estimates of Tables 3 and 5

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