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## **Dangers of Using Aggregated Data for Understanding Socio-Demographic Realities of the Gulf Region**

**Gulf Labour Markets and Migration**

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**EXPLANATORY NOTE**

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# Dangers of Using Aggregated Data for Understanding Socio-Demographic Realities of the Gulf Region

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**Abstract:** International agencies and institutions frequently use data that combines citizens and non-citizens to describe the educational, occupational, and other characteristics of the Gulf countries. They also use aggregated data to construct indexes reflecting socioeconomic development rendering comparisons of different countries, including the Gulf. This analytical note demonstrates the erroneous and misleading conclusions one might make about the socio-demographic realities of the Gulf on the basis of aggregated data. The primary reason for this emerges from the extremely skewed and segmented population composition of the Gulf countries, with non-citizens comprising up to 90 per cent of the total population in the case of some countries such as Qatar and the United Arab Emirates. Citizens and non-citizens have fundamentally different characteristics, with migrants predominantly comprising males in low-skilled occupations and female domestic workers. Aggregation of the two groups therefore leads to an inaccurate picture for both groups, and may be misleading for planning purposes.

**Keywords:** Statistics; National Population; Foreign Population; National Labour; Foreign Labour; Total Fertility Rate; Bahrain; Kuwait; Oman; Qatar; Saudi Arabia; United Arab Emirates

## Introduction

The population composition of the six Gulf Cooperation Council (GCC) countries is unique in the sense that non-citizens outnumber citizens in four countries, namely Qatar, the United Arab Emirates (UAE), Kuwait, and Bahrain. In the remaining two countries, Oman and Saudi Arabia, non-citizens comprise 44% and 32.7% of the residents, respectively (Table 1). Thus, the overall demographic picture in these countries is heavily weighted towards non-citizens. Owing to this unusual distribution, it stands to reason that socio-demographic data that combine nationals and non-nationals

in their calculation are unlikely to reflect the ‘true’ realities of these two essentially disparate groups, one comprising a permanent population of citizens and the other temporary migrant workers with almost no access to citizenship. This claim is substantiated in this note by using two indicators, labour force participation rates (LFPR) and fertility rates, in their aggregated and disaggregated forms.

**Table 1: Number and percentage of nationals and non-nationals in the six GCC countries, latest years**

Country		Total Population	Number		%	
			Nationals	Non - Nationals	Nationals	Non - Nationals
Bahrain	mid-2014	<b>1,314,562</b>	630,744	683,818	48.0	52.0
Kuwait	31 March 2015	<b>4,161,404</b>	1,283,726	2,877,678	30.8	69.2
Oman	25 March 2015	<b>4,149,917</b>	2,324,327	1,825,590	56.0	44.0
Qatar	April 2010	<b>1,699,435</b>	243,019	1,456,416	14.3	85.7
Saudi Arabia	mid-2014	<b>30,770,375</b>	20,702,536	10,067,839	67.3	32.7
UAE	mid-2010	<b>8,264,070</b>	947,997	7,316,073	11.5	88.5
Total*		<b>50,359,763</b>	26,132,349	24,227,414	51.9	48.1

\*Total provides the sum of population numbers at different dates between April 2010 and March 2015. It is not exactly the total population at any of these dates.

Source: <http://gulfmigration.eu/total-population-and-percentage-of-nationals-and-non-nationals-in-gcc-countries-latest-national-statistics-2010-2015>.

## Labour Force Participation in the Gulf Countries

Participation in the work force is an important indicator of economic activity and is one of the key indicators used for measuring gender equality and other development goals. Table 2 shows two estimates of LFPR by gender, one taken from an international source (ILO 2015), and the other taken from country data reported on the website of the Gulf Labour Markets and Migration (GLMM) database ([www.gulfmigration.eu](http://www.gulfmigration.eu)). The former source combines nationals and non-nationals and reports aggregated data; the latter source shows the data only for nationals of a given Gulf country. A cursory look at Table 2 indicates that participation rates for both genders are fairly different according to the two sources. The LFPR for males are strikingly higher in all the countries according to ILO data as compared to the estimates for nationals based on country data. For example, 93.6 per cent of males in Qatar were economically active according to UNICEF data compared with 68.9 per cent of Qatari nationals according to country data for nationals. Why are the rates so different? The answer is simple: almost 96 per cent of all employed males in Qatar are non-national migrant workers who are in Qatar simply to work. Thus, the overall LFPR is heavily weighted towards this group.

In the case of work force participation among women, the difference is particularly large in case of Qatar and the UAE. According to ILO estimates, the LFPR in Qatar was 53.1 per cent compared with only 35 per cent for nationals according to country data; the respective estimates for UAE were 41.7 per cent and 32.1 per cent. In the case of the other countries, except Kuwait, the rates were consistently higher according to ILO estimates as compared to country data, although the differences were less striking for females than for males.

**Table 2: Labour Force Participation Rate (LFPR) in the GCC countries  
using two different sources of data**

Country	LFPR age 15+, ILO 2015 <sup>a</sup>		LFPR for nationals (country sources) <sup>b</sup>		
			YEAR		
	Males	Females		Males	Females
Bahrain	84.9	38.5	2010	60.9	29.0
Kuwait	83.6	47.7	2016	57.6	48.2
Oman	85.4	30.1	-	-	-
Qatar	93.6	53.1	2014	68.9	35.0
Saudi Arabia	78.5	20.0	2014	64.8	17.6
UAE	90.8	41.7	2012	61.8	32.1

Sources: a. ILO modeled estimates, 2015. ([www.ilo.org/ilostat/](http://www.ilo.org/ilostat/)).

b. GLMM ([www.gulfmigration.eu](http://www.gulfmigration.eu)), based on country censuses or labour force surveys.

The above analysis raises the following questions. First, can aggregated data used in most international sources be used for making valid conclusions about the actual LFPR of nationals (or non-nationals)? Second, can aggregated data be used for building indexes such as gender parity or human development? Some problems with making conclusions on the basis of aggregated data are as follows.

Aggregated data on LFPR, and other indicators not covered in this analytical note, provides at best an ‘average’ picture that in several cases is so heavily skewed towards non-nationals that any conclusions based on this picture are likely to be inaccurate. In countries like Qatar and the UAE where almost 90 per cent of all residents are non-national, the ‘average’ picture is likely to reflect the situation of non-nationals more closely than that of nationals. In case one wants to understand the progress and development of Qatari or Emirati citizens, aggregated data might overestimate an indicator such as LFPR, or it may underestimate certain other indicators (probably educational level).

Some evidence of possible misinterpretation based on the use of aggregated data is found in the existing literature. Using aggregated data provided by the ILO, the European Parliament in an evaluation of the situation of women in the Gulf States concluded that “Qatari female labor force participation rates are highest in the Gulf region...” (European Parliament 2014, p. 165). It is unclear whether the author was referring to Qatari nationals or all women in Qatar. If the latter, the type of work that the two

groups engage in is very different and needs further explanation for a comprehensive understanding of the situation of all working women in Qatar.<sup>1</sup> Similarly, another report on gender equality in the Arab region by (Willen et al. 2016) notes that Qatar, with a female LFPR of 51 per cent is “best positioned,” yet it has only half its women aged 15+ in the work force. Again it is not clear whether the author is drawing this conclusion for Qatari and non-Qatari women combined. If the latter, what does being “best positioned” really mean? Does it mean that it has the largest number of female migrant workers, or that it has successfully increased the LFPR of Qatari female citizens? The latter conclusion would be obviously incorrect. Similarly, a UNICEF report on gender equality in Qatar concludes that the female LFPR in the country is 50 per cent, which is close to the global rate of 52 per cent, and then adds that “working Qatari women tend to be highly educated and are usually employed in public sector fields...” (UNICEF 2011, p. 4). It is not clear whether the author is implying that the LFPR for Qatari national women is about 50 per cent, which is obviously not true as illustrated in Table 1.

Regarding the second question about the use of aggregated data in constructing comparative indexes of different kinds, it is common for international agencies and organizations to develop summary indexes. For example, in its recent report on the global gender gap, the WEF (2016) ranked countries according to various dimensions, one of which was Economic Participation and Opportunity. Among the GCC countries, Qatar was awarded the highest ranking on this index followed by Kuwait. LFPR is one of the components of this index, and the highest ranking for Qatar is probably an outcome of the use of aggregated data, including nationals and non-nationals. Thus the interpretation of such an index is problematic, since the index is likely to be biased towards migrant workers who comprise 90 per cent of the population. Such indices would be more informative if they were stratified by citizenship status. Aggregated indices clearly do not reflect the patterns for nationals and non-nationals, who are mainly migrant workers and must leave the country as soon as their employment ends. This stands in contrast to many other countries where such workers might attain permanent residence or citizenship.

## Fertility Rates in the Gulf Countries

Two indicators are commonly used to measure the fertility level of a population, crude birth rate and total fertility rate. Unfortunately, data on fertility is not published in a disaggregated manner showing nationals and non-nationals separately in most Gulf countries with the exception of Kuwait. Also, UN sources in the region (e.g., the Economic and Social Commission for West Asia) do not routinely publish disaggregated fertility data. Most researchers therefore tend to use aggregated data when describing the fertility levels of the Gulf countries, drawn from various sources such as the UN databases, World Bank, and the Population Reference Bureau (PRB). The fundamental problem with this data is as follows.

The crude birth rate is calculated by dividing the number of live births in a population by the total population in a country during a given year. The denominator in the Gulf countries includes all residents, nationals and non-nationals. It therefore contains mostly migrant workers, a majority of whom are males unaccompanied by their families; and therefore unlikely to contribute to births, the numerator of the calculation. The same applies to a large body of female migrant workers, especially domestic workers,

who are not accompanied by their husbands and therefore contribute negligibly to the numerator (i.e., live births).

The total fertility rate (TFR) is calculated as the number of live births per woman aged 15-49 in a given population. While the numerator (live births) and denominator (number of women aged 15-49, in five-year age groups) include all women, many of the non-national women in reality do not contribute to childbearing. These women, even if married, have either achieved their fertility in the country of origin before they moved or may do so upon return simply because they are not accompanied by their husband. Thus, the denominator of aggregated TFR is inflated by the presence of non-national women who contribute much less to childbearing in the Gulf country, owing to the selective nature of migration.<sup>2</sup> The above situation yields TFRs that present an inaccurate picture for both nationals and non-nationals if aggregated data are used, as illustrated below.

Table 3 presents TFR data for two Gulf countries, Kuwait and UAE (Dubai only). In 2014, the aggregated TFRs for Kuwait and Dubai were 1.7 and 1.5, respectively, according to country estimates. However, the disaggregated rate for Kuwaitis and non-Kuwaitis was 3.5 and 0.9, respectively; with Kuwaiti nationals' fertility being about three and a half times more than non-nationals'. A similarly large difference was present for the women in Dubai. Thus, the 'average' or aggregated figure misrepresented the fertility picture for both nationals and non-nationals. Table 2 also shows a comparison of the TFRs in Kuwait and Dubai with data provided by an international agency, the PRB, which shows aggregated data, and is much lower than that of TFRs for Kuwaiti and Emirati citizens.

**Table 3: Total fertility rate for Kuwait and UAE nationals and non-nationals compared with Population Reference Bureau (PRB) rate**

Country	PRB rate <sup>1</sup> (national+ non - nationals)	Disaggregated rate, 2014		
		Nationals	Non - nationals	Total
Kuwait <sup>2</sup>	2.3	3.5	0.9	1.7
UAE	1.8	-	-	-
(Dubai) <sup>3</sup>	-	3.4	1.2	1.5

Sources: 1. PRB 2015 World Population Datasheet.

2. Health Statistics Division, Kuwait Ministry of Health (2014).

3. Dubai Statistical Center - Vital Statistics System for Emirates of Dubai.

Why is the presentation and use of aggregated fertility data problematic? A major reason is that authors may misinterpret the demographic realities of the Gulf and draw erroneous conclusions. For example, Alrouh et al. (2013) while describing the demographic indicators in the Gulf used the World Bank database to draw several conclusions about fertility levels in the GCC countries. They noted that



the UAE had the lowest TFR (1.7) while Saudi Arabia had the highest (2.8). They concluded that while the UAE had reached below replacement fertility, Qatar, Kuwait, and Oman “stood at exactly the (replacement) rate.”<sup>3</sup> This conclusion is inaccurate since the aggregated TFR reflects a pseudo average picture based on data where neither the numerator nor denominator captures the true demographic reality for the groups of nationals or non-nationals. In the case of Kuwait, for example, Kuwaiti TFR is about 1.5 times higher than replacement level fertility (of 2.1) and the fertility of non-nationals is less than half the replacement fertility. Thus, the previously mentioned conclusions could be highly misleading for researchers and policy makers who are unfamiliar with the relatively unusual and peculiar population structure of the Gulf countries, especially in cases where nationals comprise only about one-tenth of the total population. Similarly, if aggregated data are used for projecting fertility (or population growth) of nationals, large errors in the assumptions are likely to affect the results.

Use of aggregated data for understanding time trends in fertility is equally problematic. In an analysis of decline in fertility among Emirati nationals, Al-Awad and Chartouni (2010) describe the rapid decline in fertility in the six GCC countries, based on aggregated data. They note that “The largest drops took place in Kuwait where average fertility rates decreased from 6.9 children per female during 1970 to 1975 to 2.3 children per female during 2000 to 2005, and in the UAE. from 6.4 to 2.5 for the same periods.” As shown in Table 2, the TFR for Kuwaiti and UAE nationals is much higher than the general conclusion drawn by Al-Awad and Chartouni. An estimated account of the trends in TFRs by country is also presented in UN sources such as the recent World Population Prospects: the 2015 Revision (UN 2015). For the UAE, the TFR is shown to have declined from 5.66 in 1975-80 to 1.82 in 2010-2015, according to UN estimates. An inherent problem central to this trend analysis is the changing composition of the denominator over time. In the Gulf countries, the composition of the denominator (i.e., women aged 15-49) has changed markedly during the last three-four decades as a result of the rise in female migrant workers and their occupational structure. The number of domestic workers, for example, most of who would be included in the denominator has increased over the years, thus inflating the denominator without any contribution to the numerator.

Lastly, comparisons of the Gulf countries with other countries in the region (or elsewhere), if based on aggregated data are misleading. For example, Iran, where citizens comprise almost 98 percent of the population according to the 2016 Census (Statistical Center of Iran 2016), has undergone fairly rapid fertility decline in the last three-four decades and its TFR now stands at about 1.8 children per woman. If aggregate data for the UAE reported by the PRB (see Table 2) is used, one would conclude that the TFR for Iran and the UAE is the same. However, what is the meaning of this ‘sameness’? What can one conclude about the fertility of Emirati women from this comparison?

## Conclusion

A close look at two socio-demographic characteristics, namely LFPR and TFR, which use aggregated data combining nationals and non-nationals in the six GCC countries indicates that several dangers of misinterpretation exist if conclusions are drawn for the whole country. Nationals and non-nationals represent very different social, economic, and demographic realities and aggregating such diverse entities leads to results that do not capture the correct picture for either group. Researchers who intend to



understand social and demographic profiles of the Gulf countries should avoid the use of aggregated data to the extent possible. Also, international data collection agencies should make an effort to provide disaggregated data for this region on an urgent basis. At a minimum, while presenting data for a list of countries in comparative databases, it is vital that the data providers indicate whether the numbers relate to nationals, non-nationals, or the two groups combined. They may also add a note of caution for the user about aggregation problems with data for the Gulf countries and refer them to alternate sources that provide separate data for citizens and non-citizens.

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## Endnotes

1. A majority of Qatari national women are engaged in professional and technical occupations while a majority of non-Qatari women are employed as domestic workers, considered elementary (or menial) occupations.
2. An exception to this may be births that occur as a result of non-marital relationships, or forcible situations such as rape. Although such estimates are not published, it is safe to assume that the number of such births is fairly small and would affect the numerator only marginally.
3. Alrouh et al. (2013) assume that replacement level fertility is a TFR of 2.3 instead of 2.1, which is the usually assumed number.

### About the Author



**Nasra M. Shah** is Professor of Demography at the Department of Community Medicine and Behavioral Sciences at the Faculty of Medicine, Kuwait University. Professor Shah's research has focused on several different demographic issues in the context of health and societal development. She has conducted extensive research on the Asian region, especially Pakistan and the major South Asian countries and, since almost 30 years, on Kuwait. Labor migration, especially from Asian countries to the oil-rich Gulf countries, has been one of the consistent themes in Dr. Shah's research for more than 35 years. During the mid 1990s, she was part of a UNFPA funded global project that examined emigration dynamics in four major sending regions. She was Chairperson of the South Asia region. She serves as a referee for most leading migration journals and is on the Editorial Board of the Asia and Pacific Migration Journal, International Family Planning Perspectives, and Migration and Development. Her many publications include books on Asian Labor Migration: Pipeline to the Middle East; Pakistani Women; Basic Needs, Women and Development; and Population of Kuwait: Structure and Dynamics.

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