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Similarities or Differences?**

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**Demographic Transitions in Mediterranean Africa.  
Similarities or Differences?**

*Mediterranean African countries have common ethnic, religious, historical, economic, and political characteristics that make them a group of countries unique in their own right. As regards demographic characteristics, and particularly their transitions, they have so far been studied in a limited and disunited way. This article aims to analyse the main characteristics of transitions – path, timing, and pace – in the five countries of this region (i.e. Algeria, Egypt, Libya, Morocco, and Tunisia) to verify if they are, and to what extent, homogeneous. We introduce the Fertility Path Index (FPI) and the Life Expectancy Path Index (LEPI), which measure respectively the share of fertility and mortality transition undertaken up to a given calendar year, and we consider the peculiarities of the pre-transitional regimes. First, dissimilarities are measured, and then in-depth comparisons of paths are conducted in terms of pace and regularity, stalls, and trend reversals. Data are drawn from the UN World Population Prospect, 2022 Revision; the period of analysis is 1950 to 2021. Many common characteristics result, proving that the unfolding of the demographic transition has been similar in Mediterranean African countries. However, closer similarities appear between pairs or among a trio of countries, differently for fertility and mortality.*

**Keywords:** *Mediterranean Africa; transitional paths; similarities; differences*

## Introduction

In this study, we analyse the demographic changes that occurred in the past seven decades in the countries of the African continent bordering the Mediterranean Sea: Algeria, Egypt, Libya, Morocco, and Tunisia. Geographically speaking, they are divided from the rest of the African continent by the Sahara Desert, a geographical barrier that is the origin of many differences between the Mediterranean (the northern) and the sub-Saharan (the southern) parts. This geographical configuration has defined the climatic situation and the history of the region (Calderon 2000). The Roman, the Arab and then the Ottoman Empires had extended their rule up to these borders, conditioning the current ethnic (mainly Arabs and Berbers) and religious (mainly Muslims) composition of the population.

As predominately populated by Muslim Arabs, these countries are often studied together with the rest of the Arab or Muslim countries (some examples of demographic studies are Fargues 1988, 2003, Rashad 2000, Eltigani 2001, 2005, Tabutin and Schoumaker 2005, Jones 2006, Casterline 2011, Groth and Souza-Poza 2012). However, several characteristics make this group of countries unique in its own right (Tamburini and Vernassa 2010, Tamburini 2016). From the point of view of political institutions and direction, they are more homogeneous than the overall Arab countries considered, as they have Western-style liberal forms of government (with the occasional exception of Libya) and political institutions based on Constitutions. Moreover, since 1989 Algeria, Libya, Morocco, and Tunisia, together with Mauritania, have formed a political union with common objectives, the Arab Maghreb Union.

Climatic conditions and the presence of the Sahara Desert, rich in hydrocarbons, influence the type and structure of the economies of these countries, which are rather similar. Also similar is their level of economic development, which can be considered medium<sup>1</sup>.

Mediterranean African countries have strong ties with Europe. In a not-too-distant past they were colonies of European countries while today Europe is an important political interlocutor and commercial partner. Even closer ties exist with Southern Europe due to the common historical origins, which date back well beyond colonialism, and the consistent human migration flows, which have always existed between the Northern and the Southern shores of the Mediterranean (Tarver 1996, Calderon 2000, Moretti and Zagaglia 2015). Finally, demographically speaking, these countries seem to be closer to the Southern European countries than to the rest of Africa (Courbage 2002, Mencarini and Salvini 2003, Moretti and Zagaglia 2015).

The aim of this study is to verify if there is, and to what extent, homogeneity in the demographic transitions of the African Mediterranean countries, in terms of path, timing, and pace.

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<sup>1</sup>2023 World Bank Classification. Available at: <https://datatopics.worldbank.org/world-development-indicators/>

## Literature Review

The studies interested in the characteristics and determinants of the demographic transition in Africa have focused on sub-Saharan countries (see Caldwell et al. 1992, Tabutin and Schoumaker 2004, Shapiro and Gebreselassie 2008, Bongaart and Casterline 2012, Moultrie et al. 2012, Lesthaeghe 2014, Goujon et al. 2015, Bongaarts 2017, Casterline and Bongaarts 2017, Kebede et al. 2019, Shapiro and Hinde 2017, 2020) omitting Mediterranean Africa. When African Mediterranean countries have been considered, they have been included either in the broader group of Arab or Muslim countries (see Rashad 2000, Fargues 2003, Eltigani 2005, Tabutin and Schoumaker 2005) or in the Mediterranean countries (see Angeli and Salvini 2007, Salvini 2023, Doignon et al. 2023).

Studies focusing on the area have only considered either individual aspects of the transition or individual countries (see Kouaouci 1992, Yaakoubd 1997, Eltigani 2000, 2003, Ouadah-Bedidi and Vallin 2000, The World Bank 2010, Ambrosetti 2011, Gastineau 2012, Ouadah-Bedidi et al. 2012, Sajoux and Chahoua 2012, Sajoux 2018). Special cases have been detected: Tunisia, as a country with a successful demographic transition (see UNECA 2001) and Egypt, as a laggard and an exception in the demographic transition (see UNECA 2001, Ambrosetti 2011, Doignon et al. 2023).

Thus, our study aims to fill a gap in empirical research on demographic transition in this important, strategic region of the world.

## Data and Method

We analyse the characteristics of fertility and mortality decline in each Mediterranean African country from the mid-20th century to the present. We measure the share of the transition path taken in every single calendar year by two indicators: the *Life Expectancy Path Index* (LEPI), and the *Fertility Path Index* (FPI), which we have formulated as follows.

$$[1] \quad LEPI(t) = \frac{{}^F e_0(t) - {}^F e_0(i)}{{}^F e_0(f) - {}^F e_0(i)}$$

$$[2] \quad FPI(t) = \frac{TFR(i) - TFR(t)}{TFR(i) - TFR(f)}$$

where  ${}^F e_0$  denotes the female life expectancy at birth, TFR the total fertility rate,  $t$  a given calendar year,  $i$  the pre-transition time, and  $f$  the final time. For the initial and final values of female life expectancy at birth and total fertility rate, we rely on the notion of pre-transitional and post-transitional regimes. The reason for which LEPI is based on female survival will be discussed in the next section.

In each calendar year, LEPI and FPI measure respectively the share of mortality and fertility transition undertaken up to that time. The indicators assume a value equal to or lesser than 0 if mortality or fertility transition has not yet

started, value 1 at completion, and a value greater than 1 after completion (that is if female life expectancy continues to increase over, or total fertility rate falls below, the final value). We consider the transition process concluded if both processes are completed, namely when both indicators have reached a value equal to or greater than 1.

The use of LEPI and FPI in studying demographic transition has some advantages. First, LEPI and FPI make it immediately clear where exactly a country is situated in the mortality and fertility-lowering process. Second, such indicators have the advantage of not being influenced by the sex and age composition of a population when based on pure measures of demographic behaviour. For these reasons, they make it possible to affirm the stage of demographic transition actually reached and the comparison between countries. A further and important advantage is that they allow an evaluation of the transitional process at any date, even with an incomplete data series (at a minimum, only three values are needed for each country and each indicator: the total fertility rate/life expectancy at birth for a given calendar year and their initial and final values).

For deeper comparisons, we calculate the index of dissimilarity between transitional paths and the mean and standard deviation of the absolute annual change of LEPI and FPI. The mean measures the pace of decline, and the standard deviation measures the regularity of the transition process. Furthermore, irregularities are thoroughly investigated in terms of stalls and reversals.

We define a "stall" in the mortality transition as a positive or negative annual change in LEPI less than or equal to 0.002, while a "reversal" is a negative annual change in the index greater than 0.002<sup>2</sup>; we define a "stall" in the fertility transition as a positive or negative annual change in FPI less than or equal to 0.01 and a "reversal" a negative annual change in the index greater than 0.01<sup>3</sup>. The changes are required to persist for at least five years.

Establishing when the transition has begun and estimating fertility and mortality levels at those times is not simple, and scholars have suggested different methods (see, for instance, Coale and Treadway 1986, Chesnais 1992, Casterline 2001, Bongaarts 2002, 2008). Additional difficulties arise from the fact that continuously declining indicators are associated with the modernization of behaviours, which often has been operating for some time before the period indicators start to decrease. Then, in many cases, the beginning of the transition should be anticipated, and establishing exactly when it happened is challenging.

In our study, we consider long-run values of mortality and fertility indicators that hold as averages in the time before the beginning of the transition. In a pre-transitional regime, indeed, a demographic situation of relative stability – or equilibrium – exists where any movement away tends to provoke changes to

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<sup>2</sup>A 0.002 annual change in LEPI is consistent with an annual change in female life expectancy at birth less or equal to 0.1 years per year of calendar time, which corresponds to the lowest gain in female life expectancy at global level, between 1750 and 2005 (Vallin and Meslé 2009).

<sup>3</sup>A 0.01 annual change in FPI is consistent with an annual pace of decline in the total fertility rate lower than 0.05 children per woman, as defined by Madsen (2013) and in line with United Nations (2002) and Bongaarts (2008).

finally restore the original state<sup>4</sup>. We determined long-run values on the base of empirical evidence and theoretical foundation.

Establishing the end of the transition is as difficult as establishing its beginning. A common method used by demographers is when, for the first time, fertility in a population reaches or falls below the replacement level. Based on the experience of more developed countries, the latter is commonly set to 2.1 children per woman, and it is usually considered the endpoint of the whole transitional process because of its consistency with a very low mortality level in the population.

Recent experience in less developed countries has shown that fertility can fall below 2.1 children per woman even when mortality is relatively high. We believe that this threshold is significant even in these cases as it identifies a critical fertility level, typical of current modern societies.

As regards the final mortality level, demographic transition theory merely states that it is low at the end of the transition. Different methods have been suggested to fix it (see, for instance, Omran 1971, 1998, Chesnais 1992, Riley 2005a, Bongaarts and Hodgson 2022, Cosio-Zavala 2022), but whatever the criterion applied it is necessarily arbitrary.

Thus, we set the final level of total fertility rate at 2.1 children per woman, the final level of female life expectancy at birth at 73 years (Chesnais' method), and we consider the processes concluded when these or lower values persist for at least five years.

Data are sourced from the U.N. World Population Prospects, the 2022 Revision<sup>5</sup>, which, unlike previous editions, provides very detailed estimates of TFR and  $e_0$  for one-year periods from 1950 to 2021 (United Nations 2022). For Mediterranean Africa, the 2022 Revision makes important corrections, the most significant of which concern mortality in Algeria and Morocco.

### **Mortality and Fertility in Pre-Transitional Regimes**

Pre-transitional populations had a positive but very close to zero population growth rate, which varied in the range of 0 to 0.5%, and on average between 20 and 30 years in life expectancy, similar for males and females, and between an average of 5 and 7 children per woman (Livi Bacci 2012). Combinations of TFR and life expectancy at birth, according to different patterns, were possible and depended on the type and strength of the social, environmental, and economic elements in action. Lack of data means that only approximate estimates are possible, based on theoretical speculation or single empirical result extrapolation.

In general, a life expectancy at birth of 30 years was normal, but crises lowered it in the long run to 25 or 20 years (Livi Bacci 2012); some populations with estimated life expectancy higher than 30 years existed (Livi Bacci 2012), but

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<sup>4</sup>For a comprehensive explanation of the concept see Wilson (2013); for a detailed description of the equilibrium mechanism see Livi Bacci (2012).

<sup>5</sup>United Nations, Department of Economic and Social Affairs, World Population Prospects 2022, Online Edition. Available at <https://population.un.org/wpp/>

an expectation of life of 35 was unusually high (Riley 2001). Evidence showed that when the health transition started, mortality began to differentiate by sex, and female mortality tended to decrease more rapidly and in a less disrupted way than male mortality (Livi Bacci 1999, Riley 2005a).

For African populations, estimates of a satisfactory quality are limited. Riley (2005b), who collected and evaluated a great variety of studies and statistical sources for countries all over the world from 1800 onwards, selected only twelve pre-transition estimates of life expectancy at birth for ten African countries, which range between 22.5 and 31.0 years. For Mediterranean African countries, he reported (Riley 2005a) very similar values for the first decades of the 20<sup>th</sup> century, which he considers to probably be the beginning of the transition (see Table 1).

**Table 1.** *Riley's Estimates of Life Expectancy at birth in Mediterranean African Countries*

	Beginning period and (in parentheses) year used as beginning point	Life expectancy around beginning of transition
Algeria	1930s (1935)	31.2
Egypt	1930s (1935)	31 to 32
Libya	1930s or 1940s (1940)	42.9 (1950) [UN estimates]
Morocco	1930s or 1940s (1940)	Not available
Tunisia	1920s (1925)	28.8

Source: Riley (2005a)

Note: For Libya, due to the poor quality of national data sources, reliable estimates before the UN estimates are not available. Estimates for the early 1950s suggest that a rise in life expectancy began a few decades before and that values were similar to those in other countries of the region. (Riley 2005c).

Fargues (1986) documented some mortality decline in the 19th century in Egypt and Algeria; he also stated that in Egypt at around 1930 life expectancy at birth was slightly over 30 years, not much higher than in the times of Roman Egypt when it was 28.7 years.

As regards total fertility, Bongaarts and Potter (1983) estimated, based on the contribution of proximate determinants, a level of natural fertility of around 7 children per woman for the twentieth-century pre-transitional societies outside Europe – where women did not practice contraception or induced abortion, had long intervals between births, and for whom marriage was universal and early.

In Mediterranean Africa, this value seems to have been slightly lower to around 6.5 children. According to Fargues (1986), in Egypt, the fertility rate had slightly fluctuated to around 6.5 children per woman between 1937 and 1960 and then increased; in Algeria, Morocco, and Libya it can be assumed that similar trends had occurred, starting from a not dissimilar total fertility (6.4 children per woman in 1948 in Algeria).<sup>6</sup>

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<sup>6</sup>The fertility increase was proven to be caused by two changes in the Arab social tradition: a reduction of traditionally high divorce rate and a progress in the institution of repudiation (Fargues 1986).

In conclusion, based on empirical evidence, we can hypothesize long-term pre-transitional levels equal to approximately 30 years of life expectancy at birth for both females and males and approximately 6.5 children per woman, for all countries in Mediterranean Africa<sup>7</sup>.

## Results

### *The Transitional Paths*

In Mediterranean Africa, the mortality transition started before and progressed earlier than the fertility transition, as is evident from the position of the LEPI and FPI curves in Figure 1: the curve of the mortality path is always above that of the fertility path, whatever the year and the country considered.

In 1950, the mortality transition had begun in all countries although the situation was not homogeneous, as shown in Table 2. It was particularly advanced in Algeria where almost a third of the path had been completed, while in Morocco and Tunisia the quota achieved was about a fifth, in Libya and Egypt it was a tenth or slightly more.

Subsequently, progress in survivorship continued in all countries at different rates so that half of the transition was reached at similar times. The mortality transition was completed by all countries, first by Tunisia, in 1991, and lastly by Morocco, twenty years later, in 2011.

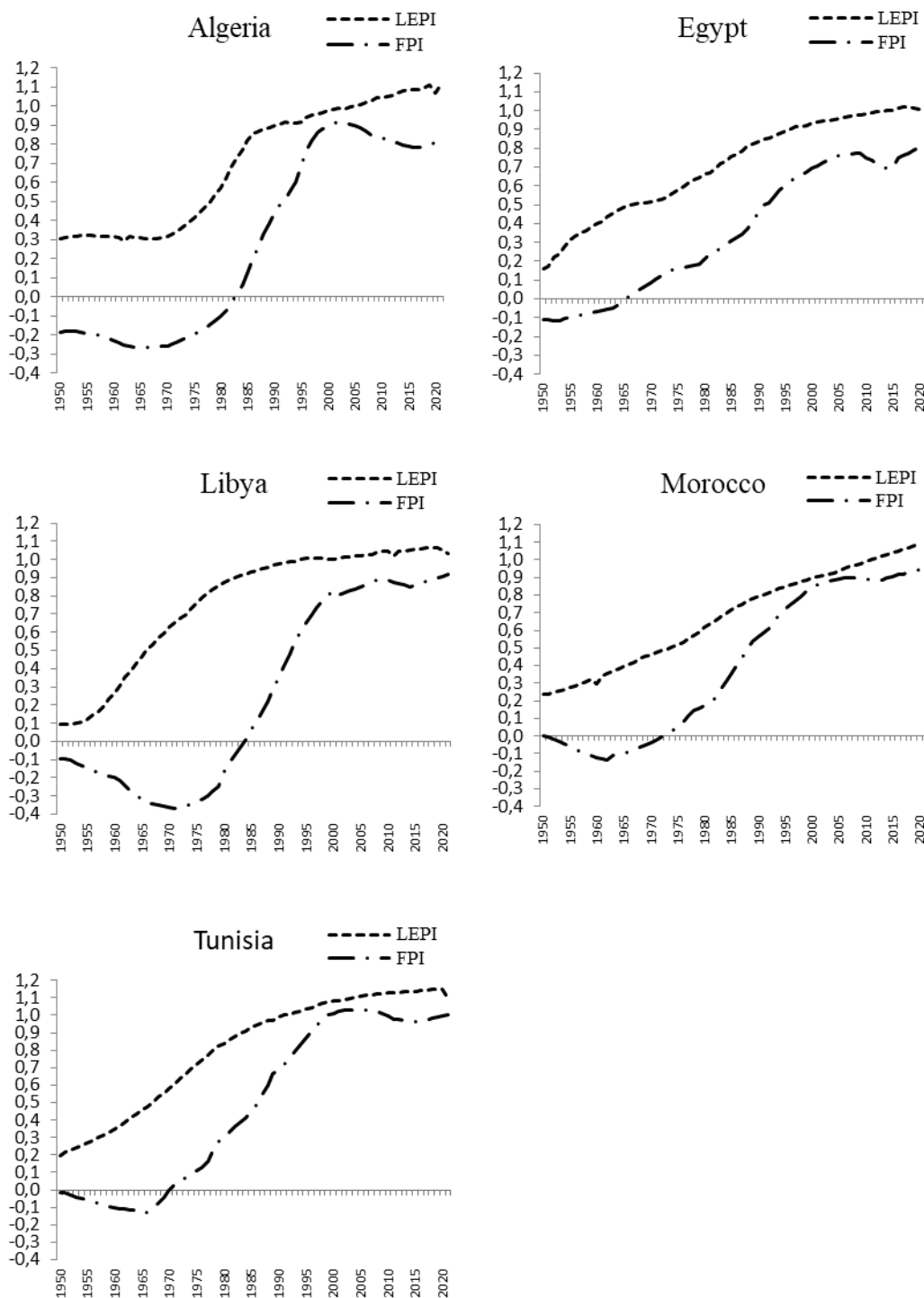
In 1950, all countries in Mediterranean Africa were at the very beginning of the fertility transition. The average number of children per woman was above 6.5, except in Morocco, where it was slightly lower. In the following years, there was a sharp decline in fertility, common to all countries in the area, which reached half of the transition in the same period, between the end of the 1980s and the beginning of the 1990s. Then, fertility decreased further but on the eve of the new millennium it widely increased. As a result, in 2021, the fertility transition was still ongoing in all countries except Tunisia, where it was completed in 1999. Well behind was Egypt's fertility transition, with only about 81% of its completion.

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<sup>7</sup> Note that these values are consistent in terms of stable populations.



**Figure 1.** *Transitional Fertility and Mortality Path Indexes in Mediterranean African Countries. 1950-2021*



Source: Our elaboration on UN data

**Table 2.** *Demographic Transitions in the Mediterranean African Countries. Summary Features*

	<i>Transitional path achieved in 1950 (%)</i>	<i>Achievement of 50% of the transitional path (Year)</i>	<i>Completion of the transitional path (Year)</i>	<i>Transitional path achieved in 2021 (%)</i>
<b>Algeria</b>				
Mortality	31	1979	2005	+12
Fertility	-19	1992	-	82
<b>Egypt</b>				
Mortality	16	1967	2014	99
Fertility	-11	1992	-	81
<b>Libya</b>				
Mortality	10	1966	1994	+3
Fertility	-10	1993	-	92
<b>Morocco</b>				
Mortality	23	1974	2011	+8
Fertility	0.34	1989	-	95
<b>Tunisia</b>				
Mortality	20	1967	1991	+10
Fertility	-1.30	1987	1999	+0.32

Note: (-) Not completed; (+ "number") quantity exceeding the end.

Source: Our elaboration on UN data

### *Path Similarities*

The dissimilarity index values show a close similarity in the mortality path in Egypt and Morocco (Table 3). These paths are also similar to that of Algeria, although in the latter country the mortality transition was more backward until the end of the 1970s, while later it was more advanced. The index values also show that the transitional mortality path in Tunisia was overall similar to that of Libya; in particular the paths went hand in hand between the mid-1960s and the mid-1990s. (Table 3 and Figure 2, a and b).

As with mortality trajectories, fertility trajectories also show greater similarities within smaller groups of countries. However, the totals of differences are larger, proving that these similarities are less strong than those in mortality. The path of the fertility transition in Algeria was very similar to that in Libya; in these countries the decline in fertility occurred very late but, once it started, it continued rapidly and, in both cases, was preceded by a notable increase. Instead, the fertility transition path in Tunisia was very similar to that of Morocco, where fertility began to decline in the second half of the 1960s, after an initial turnaround. (Table 3 and Figure 2, c and d)

The fertility transition in Egypt was more similar to that in Morocco, but the similarity is less strong than between the other country pairs and less marked than in the case of the mortality transition; there is also a non-negligible similarity with the fertility transition in Tunisia. (Table 3 and Figure 2d)

**Table 3. Index of Dissimilarity**

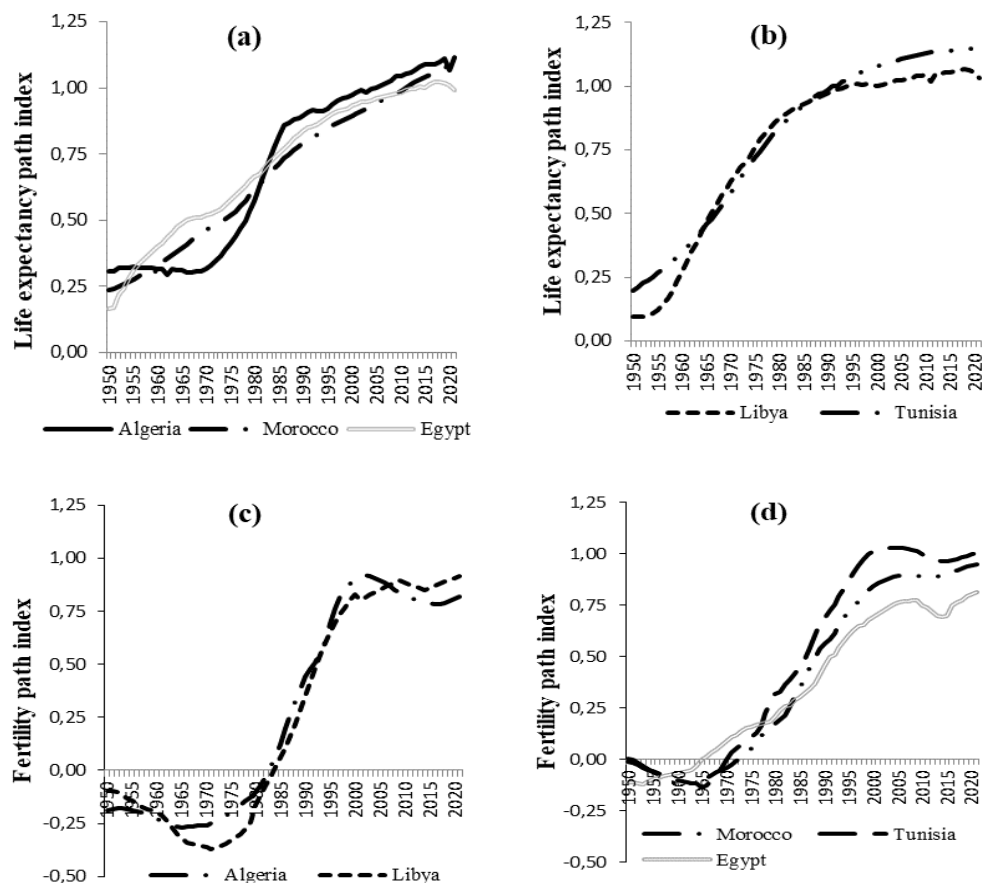
	Mortality				
	Algeria	Egypt	Libya	Morocco	Tunisia
Algeria	0	3.09	4.66	2.54	4.54
Egypt	3.09	0	3.96	1.63	4.07
Libya	4.66	3.96	0	4.59	2.15
Morocco	2.54	1.63	4.59	0	4.70
Tunisia	4.54	4.07	2.15	4.70	0

	Fertility				
	Algeria	Egypt	Libya	Morocco	Tunisia
Algeria	0	5.82	2.51	4.99	7.32
Egypt	5.82	0	6.90	3.69	5.81
Libya	2.51	6.90	0	5.56	8.29
Morocco	4.99	3.69	5.56	0	2.91
Tunisia	7.32	5.81	8.29	2.91	0

Note: ID=half of the summation of the differences expressed as absolutes between the LEPI (FPI) of two countries in each calendar year.

Source: Our elaboration on UN data

**Figure 2. Transitional Paths of Mortality and Fertility by Similarities**



Source: Our elaboration on UN data

*Pace and Regularity*

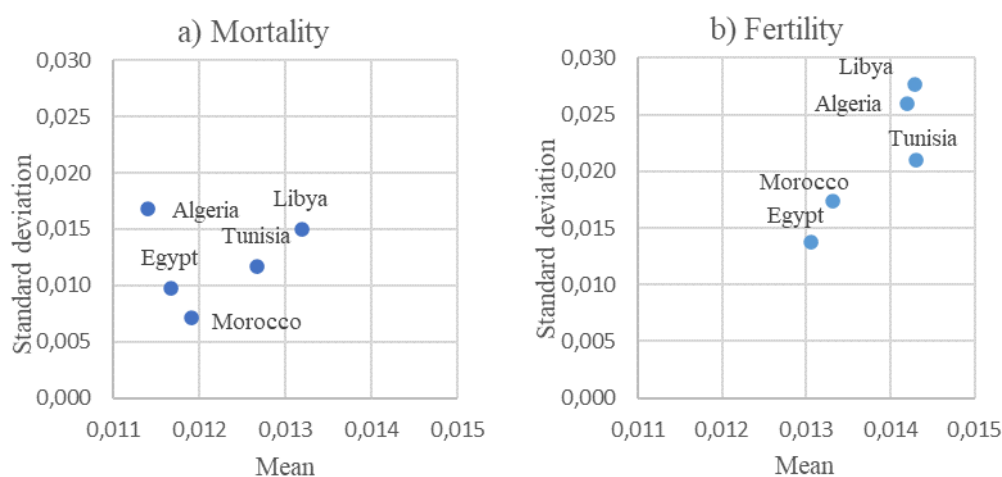
Speed and regularity of paths are at the basis of the similarities shown in the previous subsection.

The mortality transition was rapid and rather irregular in Libya and Tunisia while it was slow and smooth in Morocco and Egypt. In Algeria, it was particularly slow and irregular due to some mortality crises, the most important of which was caused by the war of independence (Figure 3a).

Regarding fertility, transitions in Algeria and Libya were faster and more irregular than in Morocco and Egypt while the pace of the process in Tunisia was as rapid as in Algeria and Libya but more regular (Figure 3b).

Overall, the mortality transition has been on average slower and more regular than the fertility transition across Mediterranean African countries.

**Figure 3.** *Pace and Regularity of Transitions in Mediterranean African Countries, 1950-2021*



Note: Mean and standard deviation of LEPI (a) and FPI (b) annual changes

Source: Our elaboration on UN data

*talls and Trend Reversals*

The speed and especially the irregularity of the paths can be better analysed in terms of stalls and trend reversals, namely periods of not substantial or substantial trend changes. We also consider the recurrence and duration of a stall/reversal – because their number influences the duration and possibility of completing the transition – and their timing – because different times are probably associated with different underlying causes –. For individual countries, details of each stall and reversal are shown in Table 4.

In the period 1950–2021, none of the Mediterranean African countries experienced reversals or stalls in mortality transition despite a few major changes in some countries in some years. In contrast, all countries had a few breaks in fertility transition, and these were mostly stalls but sometimes reversals.

At the beginning of the observation period, in the 1950s and the 1960s, all countries experienced at least a period of uncertainty in the fertility transitional process. They were actual periods of stagnation for Algeria, Egypt, and Tunisia, and of reversal for Libya and Morocco. Further stalls occurred later in Libya and in Egypt (in 1967–1973 and 1975–1979 respectively), and in the last two decades in Algeria, Libya, Morocco, and Tunisia. In these last two countries they were particularly severe because they were long and repeated.

**Table 4. Stalls and Reversals in the Transitions of Mediterranean African Countries, 1950–2021. Main Features**

Country		<b>Total breaks (stalls reversals)</b>	<i>Stall(s)</i>			<i>Reversal(s)</i>		
			<b>+</b> Number	Period	Duration (years)	Number	Period	Duration (years)
Algeria	Mortality	<b>0</b>	0	-	-	0	-	-
	Fertility	<b>3</b>	3	1951–1957 1962–1971 2015–2019	7 10 5	0	-	-
Egypt	Mortality	<b>0</b>	0	-	-	0	-	-
	Fertility	<b>2</b>	2	1955–1963 1975–1979	14 5	0	-	-
Libya	Mortality	<b>0</b>	0	-	-	0	-	-
	Fertility	<b>4</b>	2	1967–1973 2011–2016	7 6	2	1953–1958 1960–1966	6 7
Morocco	Mortality	<b>0</b>	0	-	-	0	-	-
	Fertility	<b>3</b>	2	2003–2013 2017–2021	11 5	1	1952–1959	8
Tunisia	Mortality	<b>0</b>	0	-	-	0	-	-
	Fertility	<b>3</b>	3	1954–1964 2002–2009 2012–2017	11 8 6	0	-	-

Note: (-) Not concerned.

Source: Our elaboration on UN data

## Summary of Findings and Discussion

The period we focused on, from 1950 to 2021, is long enough for almost all of the transition to unfold and the two indicators on which the analysis is based enabled us to make proper comparisons and to draw appropriate conclusions.

Findings showed characteristics common to all Mediterranean African countries, which can be summarized as follows.

- Similarly to what has usually happened worldwide, the mortality transition started before and progressed earlier than the fertility transition; it is unambiguously concluded in all countries.
- Mortality transition was not a regular process. Nevertheless, from 1950 to 2021 the process did not undergo either stalls or regressions, whatever the country examined.
- The fertility transition was faster and more irregular than the mortality transition and a few proper breaks took place in each country over the period 1950–2021.
- Mediterranean African countries were in their exact mid-transitions in similar periods: between 1966 and 1979, as regards mortality; between 1987 and 1993, as regards fertility.
- A period of fertility increase preceded the period of accelerated fertility decline in all Mediterranean African countries, as occurred in many other developing countries at the onset of the transition (Mauldin 1981, Dyson and Murphy 1985, Saito 2006, Shapiro and Hinde 2020).
- Recently, instability in fertility transition has been a common characteristic of Mediterranean African countries, certainly not disconnected from the upheavals of the "Arab Springs" that affected all countries.

Findings also showed closer similarities both within smaller groups of countries and those with specific characteristics. The overall path of mortality transition in Algeria was very similar to the paths in Morocco and Egypt, while the path in Tunisia was very similar to that in Libya. Differently, the fertility transition path in Algeria was very similar to the path in Libya while that of Morocco was very similar to the paths in Tunisia and Egypt.

Egypt, usually portrayed as a demographic outlier, has indeed shown some peculiar characteristics (in fertility the greatest slowness and the greatest regularity, a stall in the period of accelerated fertility decline, no stall or reversal in the more recent phases) but not enough to make it a case in itself. In fact, its overall demographic transition and that of Morocco appear to be the most similar.

The striking similarities that emerged from our study suggest that specific characteristics common to pairs (or trios) of countries influenced their fertility and mortality paths, in addition to the characteristics common to all countries. They also suggest that fertility and mortality transitions were sensitive to different characteristics.

The Algerian and Libyan economies are based primarily, though not exclusively, on oil and gas while the Egyptian, Moroccan, and Tunisian economies

are more diversified. This difference may be very important and help explain why in Algeria and Libya fertility decline began very late. As already pointed out by Fargues (2003), revenues have allowed the expansion of public expenditure and people have increased their standard of living being able to support large families, especially at the time of the oil crisis in Western countries.

Furthermore, both Algeria and Libya – and to a lesser extent Egypt – had been socialist states during their transitions, but not Morocco or Tunisia, and to some extent transformed the social and institutional context in which individuals lived and made their reproductive choices.

Tunisia and Morocco initiated family planning programmes in the 1960s and had never given up on them, differently from Algeria and Libya. In Algeria, initially, the government's position was against direct intervention in favour of a fertility reduction, a position they gave up in 1983 (Eltigani 2001). In Libya, in the 1970s the government considered that population growth and fertility were too low and acted to increase them; later, they found them satisfactory and consequently they did not implement any family planning programme<sup>8</sup>. Concerns about fertility levels are very recent and the government has finally accepted support from the UNFPA<sup>9</sup>. Intermediate is the position of Egypt where the government initiated a family planning programme in the 1960s but political support has varied over time (Radovich et al. 2018).

Levels and persistence of social and economic inequalities between urban and rural areas can explain typical traits of fertility as well as mortality transitions. In these respects, Egypt and Morocco stand out for the high share of rural population and the high share of those employed in agriculture.<sup>10</sup> This aspect is very important and seems to us to be the strongest factor explaining the similarities in the transitions of the two countries.

Results and discussion emphasize the need for future research on which explanatory factors are the most decisive for the uncovered similarities.

## Conclusion

Results showed that the demographic transition has been very similar in Mediterranean African countries. Homogeneities were present in the pre-transitional period and common characteristics persisted during the transition, proving that also at the demographic level the region is a geographical area in its own right. This is true even though some closer similarities exist between pairs or among a trio of countries, in fertility and mortality.

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<sup>8</sup>Information taken from UN World Population Policies Database. <https://www.un.org/development/desa/pd/data/world-population-policies>

<sup>9</sup>Documentation at UNFPA website (<https://www.unfpa.org/>).

<sup>10</sup>The shares of rural population in 2021 are: Algeria 26.8%, Egypt 57.3%, Libya 19.6%, Morocco 37%, Tunisia 30.7%; the shares of employed in agriculture in 2021 are: Algeria 9.7%, Egypt 23.3% Libya 18.8%, Morocco 34.1%, Tunisia 12.7% (UN data, available at <https://data.un.org/>).

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