The Valency Of The Natural And Social Components As Determinants Of A Population's Future Development

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doi: 10.19044/esj.2016.v12n8p284 URL:http://dx.doi.org/10.19044/esj.2016.v12n8p284

Abstract

The relation which ties the sociodemographic phenomena to the reference population of a given territory, is the representative essence of every social organism. Hence, there is the statistical need to get as many data as possible, as they become essential when you must make a decision that will influence the future choices of any human aggregation. The goal of the present contribution is to make population projections of the city of Bari (South Italy), studied by sex and age, aimed at knowing the future social effects through the analysis of the natural components (fecundity, mortality) and the social ones (migrations) of the studied population.

Keywords: Italy, fecundity, mortality

Introduction

In this survey we want to give, through an essentially demographic perspective, the future dynamics of Bari population studied by sex and age. As far as this research is concerned, we have used not only the *Istat* data but also those which were purposely taken from the General Registry Office of Bari concerning the year 2014 and contained in its computerized archives[64].

The method we used is the well-known *cohort component model*. With the above mentioned object in view, the basic population we chose was the one calculated by Istat on 1st January 2014 and subdivided by sex and single year age.

It has to be said that the methodological approaches used in this survey for the presentation of the foreseeable scenarios aren't by any means

[64] The computerized archives keep information about the resident population at a certain moment. Dead and emigrated people are not included.

to be considered as the only possible approach, because the various existing logical and operative processes must be used according to the statistical-environmental context in which the forecast has to be created.

The hypotheses used to estimate survival and fecundity

In order to assess the possible future trends of the city of Bari's population, we estimated the present levels of both the natural components and the migratory movement which were valid during the whole observation period.

As far as survival is concerned, the City Hall's life tables of both sexes were not available; we have therefore determined the estimation of their survival level by using the mortality parameters contained in the complete life tables of Bari Province calculated by Istat on the basis of the year 2012. Actually, according to the national statistical plan, the only available life tables having territorial details do not go further the provincial level.

The applied methodology was the *scaling factor* one (*see* Terra Abrami 1998).

We know that:

$$p_x = \frac{L_{x+1}}{L_x}$$

represents, in the complete life table of Bari Province, the survival perspective probability and

$$1 - p_x$$

represents the death probability according to the generation-period observation.

By applying that probability to the city of Bari's population by single year age, calculated on 1st January 2013, we get the number of expected deaths:

$${}^{Bari}_{att}D_x = P_x^{Bari} \cdot (1 - p_x)$$

while the total number of expected deaths in the city of Bari will be:

$${}_{Bari}D_{att} = \sum {}^{Bari}_{att}D_x \,.$$

Starting from these measurements we can set up the *scaling factor (sf)*, defined as a dimensioning–re-proportioning coefficient, obtained through the ratio between the deaths recorded in the City of Bari, gathered from 2012 Istat demographic balance, and the expected deaths that we should get if we used the provincial mortality:

$$sf_{Bari} = \frac{{}_{Bari}D_{oss}}{{}_{Bari}D_{att}} \,.$$

By applying the *scaling factor* to the death probability series, according to the generation-period observation of Bari Province, we obtain a series of mortality perspective probabilities of the City of Bari:

$$sf_{Bari} \cdot (1 - p_x).$$

The complement to one of the mortality perspective probabilities will give us the City of Bari's survival perspective probabilities, which are useful for the population projective calculation:

$$1 - [sf_{Bari} \cdot (1 - p_x)].$$

This procedure, aimed at setting up the City of Bari's survival perspective probabilities (Table 1), is the same for both sexes but it was suitably applied both to the male and female complete life table of Bari Province on the basis of the year 2012.

Table 1. Estimated survival perspective probabilities in the city of Bari - 2012

Age	***Males***	***Females***	***Age***	***Males***	***Females***
Born	0,997316	0,997054	50	0,998041	0,998764
0	0,999806	0,999745	51	0,997937	0,998717
1	0,999949	0,999868	52	0,997740	0,998629
2	0,999947	0,999882	53	0,997352	0,998458
3	0,999944	0,999895	54	0,996688	0,998170
4	0,999948	0,999936	55	0,995996	0,997873
5	0,999947	0,999964	56	0,995462	0,997643
6	0,999935	0,999952	57	0,994941	0,997415
7	0,999924	0,999941	58	0,994446	0,997190
8	0,999913	0,999929	59	0,994117	0,997054
9	0,999907	0,999918	60	0,993801	0,996925
10	0,999901	0,999907	61	0,993343	0,996714
11	0,999891	0,999896	62	0,992777	0,996413
12	0,999876	0,999887	63	0,991997	0,995932
13	0,999852	0,999884	64	0,991158	0,995293
14	0,999817	0,999889	65	0,990324	0,994646
15	0,999782	0,999894	66	0,989445	0,994059
16	0,999751	0,999893	67	0,988278	0,993352
17	0,999715	0,999891	68	0,986530	0,992404
18	0,999669	0,999887	69	0,984061	0,991376
19	0,999598	0,999878	70	0,981533	0,990353
20	0,999525	0,999869	71	0,979388	0,989295
21	0,999469	0,999863	72	0,977249	0,987959
22	0,999436	0,999860	73	0,975123	0,986067
23	0,999452	0,999861	74	0,973915	0,983947
24	0,999543	0,999870	75	0,972801	0,981834
25	0,999630	0,999880	76	0,970819	0,979676
26	0,999661	0,999883	77	0,967852	0,976866
27	0,999679	0,999881	78	0,962890	0,972744
28	0,999668	0,999871	79	0,955992	0,967617
29	0,999615	0,999853	80	0,948938	0,962436
30	0,999561	0,999836	81	0,942725	0,957556
31	0,999533	0,999821	82	0,935444	0,951797

32	0,999504	0,999797	83	0,925970	0,944245
33	0,999474	0,999758	84	0,915037	0,935668
34	0,999451	0,999694	85	0,904043	0,927073
35	0,999427	0,999629	86	0,893368	0,918582
36	0,999398	0,999576	87	0,881510	0,908859
37	0,999361	0,999525	88	0,867150	0,896578
38	0,999308	0,999476	89	0,849773	0,882840
39	0,999252	0,999446	90	0,831972	0,869082
40	0,999197	0,999417	91	0,815987	0,855450
41	0,999137	0,999372	92	0,800960	0,840270
42	0,999053	0,999316	93	0,788040	0,821751
43	0,998921	0,999235	94	0,780848	0,801192
44	0,998717	0,999117	95	0,775218	0,780578
45	0,998507	0,998997	96	0,763942	0,760247
46	0,998339	0,998899	97	0,749942	0,738334
47	0,998184	0,998813	98	0,729636	0,712781
48	0,998056	0,998750	99	0,662015	0,641029
49	0,998045	0,998756	100+		

As far as the **fecundity** phenomenon is concerned, in this case as well we considered the fecundity trend with reference to the superior hierarchic-territorial level.

Briefly, we indirectly estimated the city of Bari's fecundity specific rates by age for the year 2013 through the provincial fecundity tables, on the basis of the year 2012, by using the scaling factor method once again.

The availability of the fecundity specific rates by mother's single year age in Bari province in the year 2012 (${}^{prov}f_x^{2012}$), together with the average value of the city of Bari's female population of child-bearing age by single year age in 2013, allowed us to estimate the number of the expected born people by mother's age in the same city:

$$ {}^{Bari}_{att}N_x = {}_{prov}f_x^{2012} \cdot \overline{F}_x $$

while the total number of the expected born people in 2013 in the city of Bari is given by:

$$ {}_{Bari}N_{att} = \sum {}^{Bari}_{att}N_x $$

As we know, through the 2013 Istat demographic balance, the number of born people of the inhabitants of Bari (2,535 recorded born people), we can fix a dimensioning–reproportioning coefficient, which is defined as the ratio between the recorded born people and the expected ones:

$$ sf_{Bari} = \frac{{}_{Bari}N_{oss}}{{}_{Bari}N_{att}} $$

By applying the above mentioned coefficient to the series of the fecundity specific rates by mother's single year age of Bari Province (

$_{prov}f_x^{2012}$) we obtain the series of municipal fecundity specific rates by mother's single year age ($_{Bari}f_x^{2013}$) (Table 2):

$$_{Bari}f_x = sf_{Bari} \cdot {}_{prov}f_x^{2012}.$$

Table 2. Estimation of the municipal fecundity specific rates by age -2013

Age	Provincial fecundity rates	Average female population	Expected born people	Municipal fecundity rates
15	0,000000	1449	0	0,000000
16	0,002789	1477	4	0,002817
17	0,007445	1487	11	0,007519
18	0,007815	1518	12	0,007893
19	0,014780	1523	23	0,014927
20	0,019666	1611	32	0,019862
21	0,022072	1701	38	0,022293
22	0,023503	1638	38	0,023738
23	0,030182	1682	51	0,030484
24	0,034037	1710	58	0,034378
25	0,044269	1815	80	0,044712
26	0,055227	1770	98	0,055779
27	0,067121	1666	112	0,067792
28	0,066658	1724	115	0,067324
29	0,072285	1781	129	0,073008
30	0,089932	1801	162	0,090831
31	0,091926	1839	169	0,092845
32	0,096684	1850	179	0,097651
33	0,091997	1891	174	0,092917
34	0,092480	1988	184	0,093404
35	0,081153	2098	170	0,081965
36	0,071849	2210	159	0,072567
37	0,057420	2401	138	0,057994
38	0,049638	2484	123	0,050134
39	0,034497	2434	84	0,034842
40	0,025654	2321	60	0,025911
41	0,016940	2361	40	0,017110
42	0,011203	2399	27	0,011315
43	0,006534	2422	16	0,006599
44	0,003572	2481	9	0,003608
45	0,001751	2546	4	0,001768
46	0,001718	2723	5	0,001735
47	0,000673	2782	2	0,000680
48	0,000206	2798	1	0,000208
49	0,000210	2725	1	0,000212
	TFR 1,29		**2505**	**TFR 1,31**

We get the same result if we first estimate the TFR and then we obtain Bari population's fecundity specific rates by age.

We know that, in 2013, the number of born people (N_{2013}) of Bari inhabitants is 2,532; so, as we know the average value of the female population $(\overline{F}_x)$ of child-bearing age by single year age in 2013 in the same city, if we create the fecundity calendar $\frac{f_x^{prov}}{TFT^{prov}}$ through the fecundity specific rates by mother's single year age in Bari province in 2012 $({}^{prov}f_x)$, it is possible to indirectly estimate, the fecundity level (TFT^{Bari}), i.e.

$$TFT^{Bari} = \frac{N_{2013}}{\sum_{x=15}^{49} \frac{f_x^{prov}}{TFT^{prov}} \cdot \overline{F}_x}$$

If we multiply the TFT^{Bari} (Total Fecundity Rate), which is the average number of children that a woman can have in her whole fertile period, by the provincial fecundity calendar, which represents the TFR portion at different ages, we obtain the series estimation of the municipal fecundity specific rates by mother's single year age (${}^{Bari}f_x^{2013}$)

$${}^{Bari}f_x^{2013} = TFT^{Bari} \cdot \frac{f_x^{prov}}{TFT^{prov}}$$

With this indirect estimation of the fecundity specific rates by age, the TFR recorded level in the city of Bari in 2013, is always equal to 1.31 children per woman. (Table 3)

Table 3. Estimation of the municipal fecundity specific rates by age -2013

Age	Provincial fecundity rates	Female average population	Provincial fecundity calendar	Municipal fecundity rates
15	0,000000	1449	0,000000	0,000000
16	0,002789	1477	0,002156	0,002824
17	0,007445	1487	0,005754	0,007537
18	0,007815	1518	0,006040	0,007912
19	0,014780	1523	0,011423	0,014964
20	0,019666	1611	0,015199	0,019911
21	0,022072	1701	0,017059	0,022347
22	0,023503	1638	0,018165	0,023796
23	0,030182	1682	0,023327	0,030558
24	0,034037	1710	0,026306	0,034461
25	0,044269	1815	0,034214	0,044821
26	0,055227	1770	0,042683	0,055914
27	0,067121	1666	0,051876	0,067957
28	0,066658	1724	0,051518	0,067488
29	0,072285	1781	0,055866	0,073185
30	0,089932	1801	0,069505	0,091052
31	0,091926	1839	0,071046	0,093071
32	0,096684	1850	0,074724	0,097888

33	0,091997	1891	0,071101	0,093143
34	0,092480	1988	0,071474	0,093631
35	0,081153	2098	0,062721	0,082164
36	0,071849	2210	0,055529	0,072744
37	0,057420	2401	0,044378	0,058135
38	0,049638	2484	0,038364	0,050256
39	0,034497	2434	0,026662	0,034927
40	0,025654	2321	0,019827	0,025974
41	0,016940	2361	0,013093	0,017151
42	0,011203	2399	0,008658	0,011343
43	0,006534	2422	0,005050	0,006615
44	0,003572	2481	0,002761	0,003617
45	0,001751	2546	0,001353	0,001773
46	0,001718	2723	0,001328	0,001740
47	0,000673	2782	0,000520	0,000681
48	0,000206	2798	0,000159	0,000208
49	0,000210	2725	0,000162	0,000213
	TFR 1,29		**1,000000**	**TFR 1,31**

In-depth analysis

We noticed that, by estimating the fecundity specific rates by age of the city of Bari, the present fecundity level, which has a TFR value of 1.31 children per woman, is definitely below the "substitution" level thus having a tendentially decreasing population. In order to obtain at least the substitution of the mothers' generation, the TFR should be 2.1 (substitution level), which means that every woman should give birth to something more than 2 children (males and females) so that a generated daughter can "substitute" her mother after her death.

In these circumstances allow us to ask a question: if in 2013, with 2532 births (Istat datum), we obtained a TFR level of 1.31 children per woman, how many births do we need to reach the 2.1 TFR substitution level to guarantee the substitution of the mothers and the tendential constancy of the population dimension?

Once we have the TFR for the year 2013 (previously estimated), the fecundity specific rates by age ${}_5 f_x$ (previously estimated but grouped by five-year classes) and also the female average population of child-bearing age ${}_5 \overline{F}_x$ (by five-year classes, recorded), we can obtain the births recorded in the year 2013 (Istat datum), (Table 4):

$$ {}_5 N_x^{2013} = TFT \cdot \frac{{}_5 f_x / 5}{TFT} \cdot {}_5 \overline{F}_x $$

Table 4. Calculation of the births recorded in the city of Bari - 2013

Age classes	**Municipal fecundity rates**	**Female average population**	**Recorded births**
15-19	0,033237	7452	50
20-24	0,131073	8341	219
25-29	0,309365	8756	542
30-34	0,468785	9268	869
35-39	0,298225	11526	687
40-44	0,064700	11883	154
45-49	0,004614	13474	12
	TFR 1,31		**2532**

In the same way, but by imposing the TFR to the substitution level of 2.1 children per woman, we obtain the theoretical births that we need to reach the TFR "substitution" level of 2.1 thus guaranteeing the substitution of mothers, i.e.

$${}_5N_x^{teoriche} = 2{,}1 \cdot \frac{{}_5f_x / 5}{TFT} \cdot {}_5\overline{F}_x .$$

Once we get the theoretical births and relate them to the female average population of child-bearing age ${}_5\overline{F}_x$, we obtain the theoretical fecundity specific rates by age class. Their summation will give us a TFR whose value is 2.1 (Table 5):

$${}_5f_x^{teorici} = \frac{{}_5N_x^{teoriche}}{{}_5\overline{F}_x} \cdot 5$$

$$\sum {}_5f_x^{teorici} = 2{,}1$$

Table 5. Estimation of the theoretical births in the city of Bari - 2013

Age classes	**Municipal fecundity rates**	**Female average population**	**Theoretical births**	**Theoretical municipal fecundity rates**
15-19	0,033237	7452	79	0,053281
20-24	0,131073	8341	351	0,210117
25-29	0,309365	8756	868	0,495929
30-34	0,468785	9268	1393	0,751487
35-39	0,298225	11526	1102	0,478071
40-44	0,064700	11883	246	0,103717
45-49	0,004614	13474	20	0,007397
	TFR 1,31		**4060**	**TFR 2,1**

Briefly, to guarantee the substitution of the mothers' generation and make the population figure reach a constant level, births should increase by about 60%, i.e. from the 2,532 births recorded in 2013 they should change over to 4,060.

Hypotheses used about migratory movements

As far as the migratory movements are concerned, we must remember that this variable is more dependent on sudden variations compared with fecundity and mortality. For this reason, in order to assure the phenomenon a more stable estimation through the data relating to the registry registrations and deregistrations concerning both sexes recorded in the city of Bari in the quinquennium 2009-2013, we estimated, through the extrapolation of the trends in progress, the migratory balance for the following quinquennium (2014-2018). We obtained a migratory balance of 5,099 males and 6,137 females as a forecast for the 2014-2018 quinquennium.

These future migratory balances should be divided according to the per cent composition by age of the migratory balance recorded in the city of Bari in 2013.

Actually, this per cent composition cannot be obtained at a municipal level because it is difficult to get the migratory balances at different ages. However, through the resident population by age classes on 1st January 2013 and on 1st January 2014 (Istat data) and the already recorded municipal survival perspective probabilities, we were able to indirectly estimate the migratory balance of both sexes at different ages thanks to the following formula:

$$SM_x = {}_{2014}P_{x+1} - ({}_{2013}P_x \cdot p_x)$$

The total migratory balance will be

$$SM = \sum SM_x$$

Later, by relating the migratory balances by age to the total migratory balance, we set up the per cent composition, by sex and age, of the municipal migratory balance in 2013

$$\frac{SM_x^M}{SM^M} \cdot 100 \qquad\qquad \frac{SM_x^F}{SM^F} \cdot 100$$

Finally, we adapted the future migratory balance to the estimated per cent composition by sex and age, i.e.

$$SM_x = \frac{5099 \cdot \frac{SM_x^M}{SM^M}}{100} \qquad\qquad SM_x = \frac{6137 \cdot \frac{SM_x^F}{SM^F}}{100}$$

The migratory balances thus obtained were kept constant for the whole projection period of the future population of the city of Bari.

Projection "closed" to migratory movements.

We can examine now what the future evolutive and structural characteristics of Bari population might be, if, in the observation period, the levels of the natural component and of the migratory one became stable

In Table 6 we show Bari population divided into large age classes on 1st January 2014 and the projected one obtained by comparing the scenario "closed" to migrations and the one "open" to migratory drift with the main indexes of structure. The first analysed scenario was hypothesized as "closed" to migratory movements, which is a little realistic hypothesis, but useful to understand the intrinsic "force" of the population net of the structural modifications caused by the migratory flows.

For the future analysis of Bari population, if we disregard migrations and consider only the natural component, we notice that the population will have a decreasing trend. It will change over from 322,751 inhabitants on 1st January 2014 to 304,139 inhabitants in 2018 (-5.8%) with a negative annual average rate of variation of 3,96‰[65].

By analysing the large age groups, what is evident is a reduction in the infantile and juvenile classes. Actually, on the one hand the population between 0 and 19 years old in 2014 represented 17.63% of the total population, while in 2028 their presence will decrease to 15.42%; on the other hand the over-65 population will increase more and more. If in 2014 the latter were 22.32% of the total population, in 2028 they will change over to 28.25%, thus recording a progressive ageing of the population. We will witness above all a steep rise in "the grand old" age class, i.e. individuals who are older than 80 years: in 2014 they represented 6.45% of the population while in 2028 they will change over to 9.07%.

As a consequence of this inevitable ageing of the population, there is also the increase of the median age. Actually, it was 45.6 years in 2014, while it is expected to be 51.1 in 2028, thus having an increase of more than 5 years.

If we examine the future structure indexes of Bari population, we will have another confirmation of the population's progressive ageing process. The old age index, which represent the weight of the over-sixty-fives compared to the population up to 14 years old, will change over from 174.4% in 2014 to 252.4 in 2028. Prospectively speaking, in 2028 Bari will have about 252 elderly people older than 65 years out of 100 young people aged up to 14.

([65]) The variation annual average rate was calculated according to the continuous development model where: $r = \frac{\lg \frac{P_t}{P_0}}{t}$

Consequently, the old-age dependency ratio, which is the ratio between the over-sixty-fives and the 20-64 working-age population, will trend upwards as well, changing over from 37.2% in 2014 to 50.1% in 2028.

As for the structure indicators of the job offer potential, but above all the turnover rate obtained from the ratio between the individuals who are going to enter the active age population, represented by the 15-19 age class, and those who are going to leave, belonging to the 60-64 age class, in 2014 it was 77.1%, while in 2028 it is expected to decrease to 50.9%. The downturn is fundamentally due to the combined effect of the population's low fecundity and high ageing rates.

Also the activity index or structure index of the active population, obtained by the ratio between the 25 oldest generations (40-64-year-olds) and the 25 youngest ones (15-39-year-olds) that shows the active population's ageing degree, will trend upwards and change over from 124.5% in 2014 to 145.2%in 2028.

Table 6. Population of the city of Bari by large age classes in 2014, projected to 2028, and structure indexes.

	Projection without migrations			**Projection with migrations**		
	2014	**2021**	**2028**	**2014**	**2021**	**2028**
population						
0-19	56916	52057	46903	56916	64094	63616
20-59	173539	162637	146055	173539	220026	260759
60+	92296	101441	111182	92296	109851	133544
65+	72048	79393	85916	72048	83786	98999
80+	20831	24983	27584	20831	26150	30094
0+	322751	316136	304139	322751	393971	457919
Percentage incidence						
0-19	17,63	16,47	15,42	17,63	16,27	13,89
20-59	53,77	51,45	48,02	53,77	55,85	56,94
60+	28,60	32,09	36,56	28,60	27,88	29,16
65+	22,32	25,11	28,25	22,32	21,27	21,62
80+	6,45	7,90	9,07	6,45	6,64	6,57
0+	100,00	100,00	100,00	100,00	100,00	100,00
Median age	45,6	48,6	51,1	45,6	45,6	46,5
Indexes:						
old age	174,4	211,0	252,4	174,4	189,8	238,7
old-age dependency	37,2	43,0	50,1	37,2	34,0	33,5
turnover	77,1	65,4	50,9	77,1	76,6	64,1
activity	124,5	141,2	145,2	124,5	123,1	128,6

Source: our elaborations on the basis of Istat data and registry data of the city of Bari.

We have decided to compare also with a chart, through the age pyramids concerning the relative ages in 2014 and 2028 (figures 1-2), the structural modifications occurred in the examined population, analysing only the natural component.

The structure by age in 2014 shows a narrow base essentially due to the low fecundity and a greater survival in the elderly classes, particularly in female population.

On the contrary, from the 2028 projection we realize that there is a deep change in the structure by age: the narrowing of the base is even more evident, but, compared to 2014, that narrowing involves also the other classes up to the 45-49 age-class, including most of working-age population (20-64), in view of the rise in senile ages population.

Fig. 1

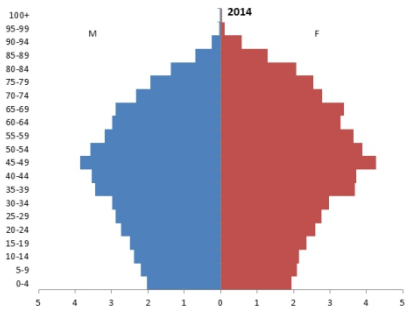


Fig. 2

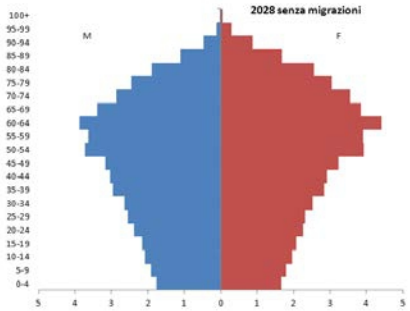
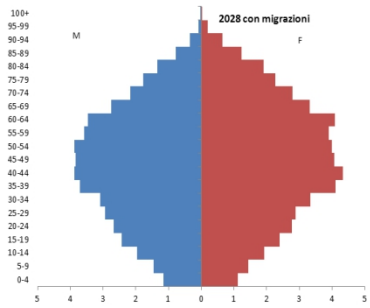


Fig. 3



In the light of these considerations it is evident that in Bari population the generation turnover cannot sufficiently guarantee both an adequate substitution level in the working classes and a balanced development of the population. Actually, by estimating the specific fecundity rate by age, we have obtained a TFR level of 1.31 children per woman, a value which is below the "substitution" one, thus creating a decreasing trend of the population.

Projection "open" to the migratory movements..

Now we need to understand what the "picture" of Bari population will be, if we consider the migratory drift. As the population has a fecundity rate well below the generation substitution level, thus being in a natural decrease regime, it is important to see whether the migratory component will

be a factor of the demographic development, thus being able to oppose the demographic regression, or it will be an irrelevant variable on the population structure and will therefore help in stressing the population's ageing. Actually, the analysis of Table 6 data, represented in Figure 3, shows that in the future the migratory component could become a demographic development factor able to neutralize the present demographic regression and drive the population to achieving a new balance.

By comparing the two presented scenarios through the data of Table 6 and Figures 2 and 3, the action of the positive migration balance is evident. In the first scenario "closed" to migratory movements, in consequence of a decreasing natural component force, the structure of the population splits in two parts: in the lower part of the ages pyramid, in the future, there will be a population decrease (age-classes 0-19 and 20-59) caused by low fecundity rates, while in the upper part of the ages pyramid there will be a population increase (age-classes 60+, 65+ and 80+) due to the population ageing. In the second scenario "open" to the migratory movements, instead, the entry of immigrants will cause a population increase in the active and reproductive classes (20-59-year-olds) and will mitigate the population ageing process. This effect of immigration in the city of Bari is highlighted also by the lowering of the median age, thus passing from a "closed" scenario to an "open" one. If there were the outlined hypotheses, in the first scenario of the 2014-2028 period, the population would decrease of about 6% and would lose about 18,000 units, while in the second scenario they would increase of 41%, thus getting about 135,000 new units.

Final considerations

What we analysed was the fruit of an "effort" to show the future scenarios that we would have if the projected trend of Bari population's natural and social components occurred.

Basically, the effects of social and demographic changes, characterized by the acceleration of the population ageing process, show the numerous critical elements of our population: we live longer and longer but the propensity to have children is still low. The migratory component shows instead a possible development factor useful to mitigate the present demographic regression. Actually, we do need to study the interdependence between social and demographic factors, if we want to understand the possible benefit that the entire social-economic-productive system can really obtain from a right knowledge of the population's tendential structure. Consequently, we also need to correctly understand the dynamics of the demographic variables linked to it.

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