

Research-data
A. No. 7.

Standardized Birth- , Death- and
Natural Increase Rate by Prefectures,
1920, 1925, 1930 and 1935

by

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I. I. Aim.

It is needless to say that the study of the regional population phenomena serves much toward solving the question of the population phenomena of one country, but the comparative study of the natural increase of population in each community is, above all, of the utmost importance in its connection with the decline in birth-rate and the centralization which are the two greatest problems of modern times.

II. Method.

Being based on Newsholme-Stevenson Method and using Indirect Standardization Method, we have, in accordance with the results of the censuses for 1920, 1925, 1930 and 1935, calculated standardized birth-rate, death-rate and natural increase rate of each prefecture respectively; and as for the Standard Population we used the whole population of the census for 1925. As to the crude rates, however, we used the average rate of the three years that respectively precede and follow 1935 (1933 - 1938).

III. Results.

The results are shown in the last table of this data paper. The Observation according to this table are as follows.

(1) Birth-rate.

That of the 1935 tells that Yamanashi Prefecture comes first on the list showing 26% above the average level, and next on the list come in turn Gumma, Kagoshima, Tochigi, Niigata, Miyagi, Saitama and Yamagata, all of which belong to the high-rate areas. Osaka comes last in the list showing 31% below the average rate. To this low-rate areas belong such prefectures as Kyoto,

Hyogo.

Hyōgo, Tokyo, Kōchi, Okayama, Hiroshima, Wakayama, Fukuoka. Generally speaking, the rate is low among the urban prefectures, and high in rural prefectures, which is quite a natural phenomenon, but this distribution indicates that the rate is high in Hokkaido, Tohoku, Kwanto excepting Tokyo and Yokohama prefectures, South-west of Kyushu, while the rate is remarkably low in Kinki and Chūgoku districts.

The next thing induced from the change during 1920 - 1935 is that the decline of birth is observable in a remarkable degree, and that even in less degree than was seen in the case of the decrease of the general birth-rate, and the localities that suffered these changes are Osaka, Kyoto, Hyōgo, Nara, Wakayama and Shiga of the Kinki districts, Toyama, Ishikawa and Fukui of the Hokuriku districts, Aichi and Gifu prefectures, Hiroshima and Kagawa prefectures and lastly Tokyo prefecture. Of these, Kyoto, Osaka, Hyōgo and Tokyo are worthy of notice in joining hands to decline even farther down in their birth-rate. On the contrary, prefectures in Kyushu districts hardly show decline, and such prefectures, as Miyazaki, Kagoshima, and Okinawa show even the remarkable rise in the rate. Some prefectures in the Tohoku districts show a slight fall during 1930 - 1935, but they came back to the normal condition. In Fukushima only the rate is on the rise. Except these two districts Shimane prefecture is seen on just a slight rise.

(2) Death-rate.

The first on the list is Ishikawa prefecture with 36% above the average level. Next (in the list) come in turn Toyama, Fukui, Aomori, Akita, Nara, Hyōgo, all of which belong to high-rate areas. Okinawa is the lowest, 13% lower

than

than the average rate, and among the low rate-areas we can number Tokyo, Miyazaki, Kagoshima, Yamanashi and Nagano. In general, in prefectures facing the Pacific, the rate is low, and the prefectures where the rate is high are those as Ishikawa, Toyama, and Fukui which are in the Hokuriku districts and Aomori and Akita of the Tōhoku districts.

Next, areas indicating remarkable decline even than the average decline during 1920 - 1935, are Miyagi, Fukushima, Saitama, Chiba, Tokyo, Kanagawa, Nagano, Yamanashi, Aichi, Shiga, Kyoto, Osaka, and Tokushima. On the contrary, not so remarkably decline show the rate in such localities as Hokkaido, Iwate, Toyama, Ishikawa, Fukui, Mie, Tottori, Shimane, Yamaguchi, Saga, Nagasaki and Oita. Of these, such as Hokkaido, Tottori, Shimane, Yamaguchi, and Nagasaki are those where the death-rate has been comparatively low since the early years of that period, but in Toyama, Ishikawa, Fukui and Mie, the rate had been recognized any decline in the rate, which badly deserves our attention.

(3) Natural Increase Rate.

The statistics for 1935 show that the distribution of this rate has a very wide range. Yamanashi comes first in the list, its rate being 68% higher than the average rate, and next come in turn Kagoshima, Tochigi, Gumma, Miyagi, Fukushima, Ibaragi, Saitama, Nagano and last Niigata which are all high-rate areas. Osaka just comes to the 32% of the average increase rate of this country and is the last on the list, and Hyogo, Ishikawa, Kyoto, Toyama, Fukui, Nara, Yamaguchi, and Tokyo come in turn following Osaka, all belonging to the low rate areas. In urban prefectures, the rate is generally low, though

though the Kwanto districts except Tokyo and Kanagawa, Tohoku districts, Hokkaido and most of the Chubu districts show high rate, while on the contrary the rate is low in Kinki and Chugoku districts. The following are types of those prefectures where the natural increase rate is high:

(a) Two prefectures can be mentioned such as Yamanashi and Kagoshima where birth-rate is high while the death-rate is remarkably low;

(b) We have Miyagi, Fukushima, Ibaragi, Tochigi and Gumma where the birth-rate is very high while the death-rate is neither high nor low;

(c) Nagano, Shizuoka, Miyazaki and Kumamoto are the prefectures where the birth-rate is rather high while the death-rate is remarkably low; and

(d) We can mention Niigata and Yamagata where the death-rate is high, and the birth-rate also is high. Various types can be found in the areas where the natural increase rate is low:

a) There are Tokyo, Kanagawa, Wakayama, and Kochi where the death-rate is remarkably low and the birth-rate also is low;

b) Such as Kyoto, Osaka, Okayama, Hiroshima, Yamaguchi, and Fukuoka are the prefectures where the birth-rate is considerably low but the death-rate is neither high nor low;

c) Hyogo and Nara are the prefectures where the birth-rate is low and

death-rate

death-rate is remarkably high; and

- d) We can mention Toyama, Ishikawa, and Fukui as those prefectures where the death-rate is remarkably high, but the birth-rate is neither high nor low.

Next, the change in the statistics during 1920 - 1935, indicates that such prefectures as Tokyo, Osaka, Kyoto, Fukuoka, and Okinawa are mentioned as showing remarkable increase in the increase rate compared with the rise equally seen in the same cases of all the prefectures, and except in Okinawa they have the remarkable fall in the birth-rate. The cause of the rise in the natural increase rate is due to the sudden decline in the death-rate. Besides those prefectures where the rise of the natural increase rate is higher than the average are Iwate, Miyagi, Fukushima, Akita, Ibaragi, Chiba, Niigata, Shizuoka, Yamanashi, Shimane, Saga, Kumamoto, Oita, Miyazaki, Kagoshima. Of these, (a) those prefectures as Iwate, Akita, and Fukushima show the rise in the birth-rate and the decline is remarkable in the death-rate; (b) Shimane, Miyazaki and Kagoshima are the prefectures where the decline of the death-rate is not remarkable while the birth-rate has risen strikingly; (c) Miyagi, Ibaragi, Yamanashi, Saga, Kumamoto and Oita are the prefectures where the fall is remarkable in the death-rate though the birth-rate has not so remarkably risen; and (d) Chiba, Niigata, and Shizuoka are the prefectures where, notwithstanding the slight fall in the birth-rate, the decline is remarkable in death-rate.

Localities where is seen the remarkable decline in the natural increase rate are Toyama, Ishikawa, and Fukui of the Hokuriku districts, and

Nara and Wakayama of the Kinki districts, cause of which is generally due to the considerable decline in the birth-rate and the stagnancy in the death-rate. Besides these, the decline has been discernible in natural increase rate since 1925, in Nagano, Gifu, Aichi, Mie, Hiroshima, Yamaguchi, Tokushima, and Kagawa, and the cause is in many cases that the more decline is seen in the birth-rate in spite of the decrease of deaths. Of these above-mentioned it is necessary to note, in the cases of Ishikawa and Nara, that the rise is even recognized during 1930 - 1935. Again in Hyōgo and Kanagawa the fall is seen in the natural increase rate since there had been some rise in death-rate during the same date.

IV. Summary.

(1) The Standardized birth-rate has a wider regional range compared with the standardized death-rate. Regionally saying, the final cause leading to the differences in the natural increase of population lies in fertility.

(2) In Hokkaido and Tōhoku districts, though the death-rate is high, the fertility also is very remarkable; therefore high is the natural increase rate. In those localities as the Kwanto districts except Tokyo and Kanagawa prefectures, most part of Tosan and Tokai districts and of Kyushu, the death-rate tends very much to fall, and as the birth-rate slightly declines, there discernible is the rise in the natural increase rate.

(3) In Kinki and most of the parts of Chūgoku where death-rate is low the natural increase rate is very low in accordance with the decline in fertility. In the case of the three prefectures in Hoku-riku the death-rate is very high and the natural increase rate declines with the fall of fertility.

(4) Generally speaking, in prefectures with many large cities in them, both the birth-rate and the death-rate are remarkably low. In late years, as the decline in the death-rate is all the more conspicuous, there tends to be seen somewhat slight rise in the natural increase rate inspite of the striking decline in the birth-rate.

Table I Standardized Birth-rate by Prefectures (per 1,000)

Prefectures	1935	1930	1925	1920
Total	33.70	33.29	34.92	35.96
HOKKAIDO	38.09	37.93	37.97	37.71
AOMORI	40.32	39.59	39.53	42.29
IWATE	37.35	36.58	36.16	37.93
MIYAGI	39.93	39.07	40.09	40.89
AKITA	38.91	38.82	37.22	38.51
YAMAGATA	40.55	41.13	39.93	41.10
FUKUSHIMA	39.55	38.69	37.89	38.17
IBARAGI	40.11	37.57	37.69	38.72
TOCHIGI	41.03	40.07	40.29	40.15
GUNMA	41.38	41.11	41.63	43.64
SAITAMA	41.53	39.17	41.62	43.12
CHIBA	36.63	35.08	37.41	37.38
TOKYO	27.89	26.78	29.41	28.64
KANAGAWA	31.95	31.15	35.31	33.62
NIGATA	40.88	41.03	40.89	41.24
TOYAMA	32.06	33.01	35.97	37.98
ISHIKAWA	31.25	32.50	35.22	37.78
FUKUI	32.38	33.72	36.55	40.47
YAMANASHI	42.86	41.33	44.37	42.91
NAGANO	38.29	38.69	38.29	40.23
GIFU	36.66	38.02	39.12	41.64
SHIZUOKA	36.99	36.18	38.35	37.03
AICHI	32.23	33.05	34.92	38.24
MIE	35.64	36.34	37.67	38.63
SHIGA	34.64	35.55	37.34	40.38
KYOTO	26.86	27.38	30.08	32.66
OSAKA	22.97	23.87	25.30	28.98
HYOGO	27.52	28.02	29.59	32.14
NARA	31.04	32.26	34.73	38.86
WAKAYAMA	30.49	31.97	34.13	37.80
TOTTORI	32.56	32.18	33.58	33.91
SHIMANE	35.00	31.41	32.70	31.79
OKAYAMA	29.61	29.29	30.12	31.92
HIROSHIMA	30.71	30.80	33.64	35.15

YAMAGUCHI	30.20	29.39	31.68	32.09
TOKUSHIMA	35.83	35.72	37.37	40.68
KAGAWA	34.97	34.83	36.45	42.32
EHIME	36.37	35.54	36.39	37.58
KOCHI	30.18	29.49	31.87	32.13
FUKUOKA	30.96	29.15	31.21	30.89
SAGA	38.95	36.58	38.70	37.75
NAGASAKI	36.09	33.89	34.82	35.02
KUMAMOTO	37.69	36.40	37.03	37.15
OITA	35.99	34.24	35.78	35.91
MIYAZAKI	37.80	34.82	34.41	34.15
KAGOSHIMA	41.49	38.54	39.33	37.00
OKINAWA	32.63	27.89	27.81	24.92

Table II Standardized Death-rate by Prefectures (per 1,000)

Prefectures	1935	1930	1925	1920
Total	17.02	18.13	20.27	25.49
HOKKAIDO	17.10	18.31	19.83	23.63
AOMORI	19.25	22.69	23.59	29.40
IWATE	17.95	20.03	21.29	24.89
MIYAGI	17.08	18.64	20.07	26.28
AKITA	19.75	21.35	23.92	27.16
YAMAGATA	18.83	20.61	21.86	28.31
FUKUSHIMA	16.71	18.03	19.60	26.34
IBARAGI	16.68	16.97	20.70	25.48
TOCHIGI	16.38	17.27	19.74	24.34
GUNMA	16.68	17.81	21.42	25.26
SAITAMA	18.09	18.74	21.90	27.68
CHIBA	17.73	18.88	20.88	26.80
TOKYO	15.22	16.36	20.54	28.18
KANAGAWA	16.35	16.58	20.37	25.36
NIIGATA	17.93	19.89	21.81	27.78
TOYAMA	21.30	22.02	23.74	28.60
ISHIKAWA	22.54	22.67	24.42	27.85
FUKUI	20.45	22.30	23.39	28.21

YAMANASHI	16.48	16.39	18.82	25.24
NAGANO	15.79	16.51	18.89	23.85
GIFU	17.40	18.88	20.42	25.25
SHIZUOKA	16.28	17.14	19.30	23.94
AICHI	16.08	17.62	20.98	26.48
MIE	17.53	18.11	21.90	25.67
SHIGA	17.69	18.55	21.54	27.48
KYOTO	16.59	18.58	21.06	28.65
OSAKA	17.26	18.33	22.68	32.01
HYOGO	16.88	17.65	20.08	28.45
NARA	19.18	18.44	21.18	26.96
WAKAYAMA	17.34	16.73	18.66	21.61
TOTTORI	16.38	17.29	17.76	21.22
SHIMANE	17.75	20.64	19.68	22.40
OKAYAMA	16.43	16.56	17.64	22.96
HIROSHIMA	16.09	17.03	19.51	24.99
YAMAGUCHI	17.35	18.28	18.30	23.18
TOKUSHIMA	17.31	16.75	19.55	26.88
KAGAWA	16.67	17.76	19.28	25.47
EHIME	15.96	16.85	18.14	23.36
KOCHI	16.40	16.36	18.81	22.65
FUKUOKA	17.67	19.39	21.01	27.58
SAGA	18.12	21.02	19.87	24.99
NAGASAKI	16.48	17.74	16.81	22.61
KUMAMOTO	16.13	17.46	18.43	22.07
OITA	18.06	18.67	18.92	24.67
MIYAZAKI	15.85	17.25	16.55	19.09
KAGOSHIMA	15.75	16.65	16.99	19.32
OKINAWA	15.31	15.61	19.01	22.82

Table III Standardized Natural Increase-rate by Prefectures
(per 1,000)

Prefectures	1935	1930	1925	1920
Total	16.68	15.16	14.65	10.47
HOKKAIDO	20.99	19.62	18.14	14.08
AOMORI	21.07	16.90	15.94	12.89

IWATE	19.40	16.55	14.87	13.04
MIYAGI	22.85	20.43	20.02	14.61
AKITA	19.16	17.47	13.30	11.35
YAMAGATA	21.72	20.52	18.07	12.79
FUKUSHIMA	22.74	20.66	18.29	11.83
IBARAGI	23.43	20.60	16.99	13.24
TOCHIGI	24.55	22.80	20.55	15.81
GUNMA	24.70	23.30	20.21	18.38
SAITAMA	23.44	20.43	19.72	15.44
CHIBA	18.90	16.20	16.53	10.58
TOKYO	12.67	10.42	8.87	0.46
KANAGAWA	15.60	14.57	14.94	8.26
NIIGATA	22.95	21.14	19.08	13.46
TOYAMA	10.76	10.99	12.23	9.38
ISHIKAWA	8.71	9.83	10.80	9.93
FUKUI	11.93	11.42	13.16	12.26
YAMANASHI	26.38	24.94	25.55	17.67
NAGANO	22.50	22.18	19.40	16.38
GIFU	19.26	19.14	18.70	16.39
SHIZUOKA	20.71	19.04	19.05	13.09
AICHI	16.15	15.43	13.94	11.76
MIÉ	18.11	18.23	15.77	12.96
SHIGA	16.95	17.00	15.80	12.90
KYOTO	10.27	8.80	9.02	4.01
OSAKA	5.71	5.54	2.62	3.02
HYOGO	10.64	10.37	9.55	3.69
NARA	11.86	13.82	13.55	11.90
WAKAYAMA	13.15	15.24	15.47	16.19
TOTTORI	16.18	14.89	15.82	12.69
SHIMANE	17.25	10.77	13.02	9.39
OKAYAMA	13.18	12.73	12.48	8.96
HIROSHIMA	14.62	13.77	14.13	10.16
YAMAGUCHI	12.85	11.11	13.38	8.91
TOKUSHIMA	18.52	18.97	17.82	13.80
KAGAWA	18.30	17.07	17.17	16.85
EHIME	20.41	18.69	18.25	14.23
KOCHI	13.78	13.13	13.06	9.48
FUKUOKA	13.29	9.76	10.20	3.31
SAGA	20.83	15.56	18.83	12.76
NAGASAKI	19.61	16.15	18.01	12.41
KUMAMOTO	21.56	18.94	18.60	15.08
OITA	17.93	15.57	16.86	11.24

MIYAZAKI	21.95	17.57	17.86	15.06
KAGOSHIMA	25.74	21.89	22.34	17.68
OKINAWA	17.31	12.28	8.80	2.10