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Accuracy Standards of Age Data for Residents of Wasit Governorate

Dr.Latif Hashem Kazar[a], Zainab Kazem Munshad[b]

[a&b]Wasit University, College of Education for Human Sciences, Wasit, Iraq

Abstract

This study addresses the errors that accompany census data, focusing on population census data from 1987 to 1997, which used several criteria to measure the accuracy of age data, namely (Myers scale, Weibel scale, Bashi scale, United Nations Secretariat scale), and focuses on two types of methods used.In measuring the accuracy of ages for the residents of the governorate, which is as follows, the Myers standard scale, as it became clear that the degree of accumulation for the governorate in 1987 amounted to (26.4), while its value decreased to (6.6) for the year 1997, which indicates that there is a degree of improvement in the age guides than it is. As for the scale of the United Nations Secretariat, it exceeded the limit at which age and gender data are accurate, which is less than (20), and it fell within the range in which age and gender data are inaccurate, as the Wasit Governorate in 1987 reached its value (52.3) and increased in 1997 to (53.7) It can be said that, in general, all measures indicate the presence of errors exceeding the permissible limit.

Keywords: Accuracy Standards, Age Data, Residents, Wasit Governorate.

1. Introduction

The issue of measuring the accuracy and efficiency of statistical data is one of the important and complex issues that require criteria for evaluating its data, and standards are defined as measures by which the accuracy of age data can be known and evaluated, and are adopted to obtain data free of errors as much as possible, whether these errors are by chance or intentional or deliberate errors during data collection. Mistakes that population statistics are exposed to. The source of these errors is known from obtaining a scale to measure the degree of errors specifically, especially if these errors are due to technical reasons or causes that can be avoided by training or failure to provide financial capabilities or other reasons where it is not easy to list all The mistakes that happen to population statistics, but population statistics, whether it is a population census or vital registration, are not immune from errors and are subject to errors, the most important of which are:

1-Covera Errors: which is due to deficiencies in counting or repetition, and defects in the administrative stages, especially for Bedouins and those residing in remote areas that are difficult to reach.

2-Content Errors: They are mistakes in answering inaccurate data in which the employees and enumerators fall, due to the failure to address questions accurately because they are not trained, in addition to errors in unpacking and categorizing the data. The data most prone to error is the age data, which is indispensable for all population studies. Choosing a research problem is the first step

in scientific research that requires a systematic and accurate answer. The research problem can be formulated as follows: What methods can be adopted to detect errors that are contained in the age structure data? The hypothesis is a preliminary solution to any problem, as it means the answer to the question contained in the research problem, and the following answer has been taken: There are many methods that can be used to measure the degree of confidence in the data of the population.

2. Research Methodology

The research relied on the descriptive analytical approach based on quantitative statistical methods, which will generate many tables, figures and maps for the years (1987 and 1997). The research was conducted over a ten-year period in order to conduct scientific, objective, and analytical comparisons.

3. Scope of the Study

The study area's spatial boundaries are represented in Wasit Governorate, which is located in the eastern part of Iraq's central governorates and is defined by its astronomical position (30-33 °) north and longitudes (31-44 °) and (34-46 °) east.The study area consisted of (13) administrative units, including (district and sub-district) as shown in Map (1). (Central Statistical Organization, 2009, p. 15). As for the temporal boundaries of the study area, it included the population data mentioned in the 1987 and 1997 censuses because they represent the official population censuses, which are the last two censuses conducted in Iraq.

Map (1): The administrative units of Wasit Governorate for the year 1987

Republic of Iraq, Ministry of Water Resources, Wasit Governorate map, scale 1/500000, 2007.

4. Results and Dissections

4.1 Whipple Index

This indicator is based on measuring the accumulation of ages that are confined to the age range from (23 years to 62 years) and which the numerator is limited to the number of ages confined between the range (from 23 to 62) and that ends in zero and five, and the denominator includes 1/5 of the total The total number of the population at these ages (Al-Hanbali, 2006, p. 21). The value of this indicator can be calculated by relying on the following formula:

$$\text{Whipple Index } \frac{60,55,50,45,40,35,30,25 \text{ Categories in the population Number}}{1/5 \text{ of the population is between the ages of 62 and 23}} 100 \times$$

Where it is noticed from the indicator multiplying the denominator x 1/5, which is in fact 40/8 = 5, where it indicates that (40) is the number of ages that are confined between the two terms from (23 - 62), and (8) is the number of ages that are one of (0) Or 5) (Al-Othman, 2020, p.78).

4.2 Mayers Index

The Myers Index is more complex than the Whipple Index for evaluating the attraction or discard of each final number, but it differs from it in avoiding the weak bias that exists in the Whipple Index as both indicators provide a quantitative method for assessing the degree of age accumulation and through them they can compare the characteristics of accumulation in different societies or one community. From time to time (Al-Saadi, 2014, p. 81). The calculation of the Myers Index is based on the distribution of the population in the form of a single age, and this scale is used to extract the preferences or dislikes of the population for the ten numbers starting from (zero to nine) (Mahmoud, 2008, p. 226) In order to determine the preference, we must take the successive sums of numbers at all ages that end with one of the ten digits, as this indicator does not give accurate results in order to move from one number to another, which makes the numbers in each group tend to decrease (Al-Hanbali, ibid., P. 23), due to progress From one age to another, whenever we move to a higher number, the population will be older than the previous number, and in order to avoid defects, the first step in developing the Meyers Index was to calculate the mixed groups of the population, so that the total for each age ends with a specific number theoretically equal to the total that is obtained It should have any other number (Al-Othman, previous source, page 75).

Accordingly, the Meyers index is calculated by following the following steps:

1-The population numbers are taken according to the age group in the age range, starting from the age (10-19), (20-29), (30-39).... and so on, which represents the column number (2).

2-The totals of numbers in all ages ending with one of the ten digits are calculated for the age groups (10 and over) and (20 and over).... and so on and represents column (3).

3-Columns (4) and (5) represent weights or coefficients for the age groups (10-79), (20-79).

4-The sums of the first category are multiplied by the coefficients 1, 2, 3,...., 10, and also the sums of the second category are multiplied by the coefficients 9, 8, 7,...., zero, which represents the two columns (6),(7).

5-The result of the two previous two operations is added, and we get the mixed population for each number, which represents column (8).

6-We calculate the percentage in each number to the grand total and multiply by 100 and represent the column (9).

7-The values of the absolute deviations from 10%, which represent the equitable distribution of the age groups, are obtained and represent the column (10).

8-Column (11) represents the values of the deviations of the Myers index while neglecting the negative sign values (Sarg, 2009, p. 47).

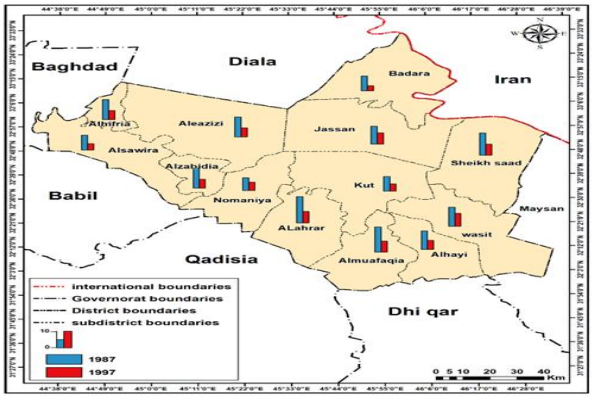
The values of the Myers index range from (0-180). If the value of the index is equal to (zero) it indicates the absence of age accumulation, but if the value of the index is equal to (180) then this means all ages have been mentioned at one final number, for example (zero) (Mahmoud, Previous source, p. 227). Through our findings in Table (1) and Map (2), this evidence has been applied to the single ages data in the 1987 and 1997 censuses of Wasit Governorate, where the Meyers index revealed some errors in the single data.

Table (1): Myers Index for the population of Wasit governorate for the years 1987-1997

No	Administrative units	1987	1997
1	Al Kut District Center	11,6	5,7
2	Wasit sub-district	15	10,2
3	Sheikh Saad district	17,5	8,8
4	Nu'maniyah District Center	10	6,5
5	Al AhrarCaza Center	20,8	9,2
6	District District Center	14,7	7,2
7	Al Mawfakia District Center	19,9	8,6
8	Badra District Center	11,6	4
9	Jassan sub-district	14	8,9
10	Essaouira district center	11,8	5,2
11	Al-Zubaidiyah District Center	15,8	7,1
12	Azizia District Center	15,7	7,1
13	Hafariyeh sub-district	15,7	6,9
Total		26.4	6,6

Republic of Iraq, Ministry of Planning, Central Bureau of Statistics, Population Census results for 1987, 1997, Wasit Governorate, unpublished data.

Map (2): Myers Index of Wasit Governorate population for the years 1987-1997



Source: the researcher relying on Table (1).

It is noted from the attached tables (2) and (3) and figure (1) At the level of Wasit Governorate, the value of the index in 1987 amounted to (26.4), while it decreased in 1997 and its value was (6.6). It is noticed that there is a degree of improvement. To be cast in a different era than 1987.

This measure shows us the biases of each of the ten ones between (zero to nine). The scale was recorded in No. (5) for the Wasit Governorate for the year 1987 (0.5), while in the 1997 census, the number (5) was recorded in it (1.3), which indicates that the preference for number (5) for the 1997 census is stronger than the 1987 census. The rest of the numbers recorded negative deviations, except for the number (3) for the 1987 census, which was more favorable than the numbers (zero and five). Negative deviations were recorded in the 1997 census, except for the numbers (2, 7), indicating that they are more biased than the numbers (zero and five), and this indicates that there is a preference for some numbers (3, 2, 7) for Wasit Governorate, indicating that the existence of ages began with ones Change (zero and five), indicating improvement by casting ages and impartiality. As for the level of administrative units, it is noted in Table(1):

1-In 1987, the highest value of the Myers index was recorded in (Al-Ahrar District Center), amounting to (20.8), and the lowest value of the index was in (Nu'maniyah District Center), which was (10). As for the rest of the administrative units, they ranged between the two mentioned values.

2-Whereas in 1997, the highest value was recorded in (Wasit district), which was (10.2), and the lowest value was in (Badra District), which was (4). As for the rest of the administrative units, they ranged between the two mentioned values.

It is clear from the above:

1-That the highest value was in 1987 in (Al-Ahrar District Center) and in 1997 it was in (Wasit sub-district). Being in remote areas where people find it difficult to count, and some families refrain from fully enumerating their family members.

2-As for the lowest value of the Myers Index in 1987, it was (Nu'maniyah District Center), and in 1997 it was (Badra District Center) and the reason was due to the fact that (Badra District Center) was a border area and because of the bloody Iraqi-Iranian war in 1987 and 1997. Because of the deterioration of the economic conditions that the country suffers from, the imposition of the

economic blockade, which led to the migration of some of its residents to the center, and thus the small number of its population, which reduced some errors in the accuracy of age data due to its small population.

3-As for the rest of the administrative units, they ranged between the two mentioned values.

4.3 Bachi Index method

The Bash method is considered one of the iterative methods of the Myers method for determining the relative preference of each of the ten numbers (Shalakani, 1994, 1994, pp. 438-439).

In order to avoid the natural effect of the severe decrease in the total population of low ages and the total weak population at advanced ages, Bashi established his index based on the age range between (23-72 years) and the comparison is made for the single number for all ages with 10. Attractive and vice versa, if its value is less than (10), it indicates a state of dissonance and its range extends between (zero), which indicates the absence of preference in ages, and (90) denotes all ages ending with the same number (Fateh, 2018, p.77)

Table (2): How to amend age data using the Myers Index method for the year 1987 for Wasit Governorate

The final figure	Age of population							Population in ages	Population in ages
	(19 – 10)	(29 – 20)	(39 – 30)	(49 – 40)	(59 – 50)	(69 – 60)	(79 – 70)	(79 – 10)	(79 – 20)
0	16246	11284	5682	6140	4132	5269	3976	52729	36383
1	15771	10598	6128	3015	1053	925	486	37976	22205
2	15409	10250	7173	4850	2060	1771	967	42480	27071
3	15147	9750	6629	2627	1373	759	617	36902	102755
4	15234	9171	6743	3662	1507	688	388	37393	22219
5	15838	8340	6154	4137	3957	3215	1578	43219	27381
6	13899	6555	5606	2735	1240	673	274	30982	17083
7	14013	6260	6416	3670	3298	2143	1142	36942	22929
8	12393	4728	4900	2740	1302	765	359	27187	14794
9	12163	4571	3534	1905	1432	855	341	24801	12638

Source: Republic of Iraq, Ministry of Planning, Central Bureau of Statistics, Population Census Results for 1987, Wasit Governorate, unpublished data

Continue to Table (2)

The final figure	Population in ages (79 – 10)	Population in ages (79 – 20)	Column weights 2	Column weights 3	Multiplying 2×4	Multiplying 3×5	Total Mixed 6+7	Percent Distribution	Deviation from the number 10	Absolute deviations of the Myers Index
1	2	3	4	5	6	7	8	9	10	11
0	52729	36383	1	9	52729	327447	380176	10,9	0,87	0,90
1	37976	22205	2	8	75952	177640	253592	7,2	2,75-	2,80
2	42480	27071	3	7	127440	189497	316937	9,1	0,94-	0,90
3	36902	102755	4	6	147608	616530	764138	21,8	11,84	11,80
4	37393	22219	5	5	186965	111095	298060	8,5	1,48-	1,50
5	43219	27381	6	4	259314	109524	368838	10,5	0,54	0,50
6	30982	17083	7	3	216874	51249	268123	7,7	2,34-	2,30
7	36942	22929	8	2	295536	45858	341394	9,8	0,24-	0,20
8	27187	14794	9	1	244683	14794	259477	7,4	2,58-	2,60
9	24801	12638	10	0	248010	0	248010	7,1	2,91-	2,90
Total							3498745	100		26,4

-The index value ranges between 0-180.

-In the event that the total value of the index is zero, this means that the ages are accurate.

-In the event that the total value of the index is close to 180, this means that the ages are not accurate.

Table (3): How to amend the age data using the Myers Index method for Wasit Governorate for the year 1997

The final figure	**Population in ages**							**Population in ages**	**Population in ages**
	(19 – 10)	(29 – 20)	(39 – 30)	(49 – 40)	(59 – 50)	(69 – 60)	(79 – 70)	(79 – 10)	(79 – 20)
0	19785	15613	10643	5155	5607	3492	3975	64270	44485
1	20295	15552	10113	5658	2948	1037	714	56317	36022
2	19418	15155	9386	6902	4487	1820	1369	58537	39119
3	18814	14888	8628	6304	2481	1102	526	52743	33929
4	18627	14950	7904	6423	3304	1406	685	53299	34672
5	19219	15540	7204	5898	3679	3226	2200	56966	37747
6	18527	13461	5587	5419	2488	1111	553	47146	28619
7	18914	13796	5669	6112	3290	2672	1455	51908	32994
8	17628	12061	3962	4518	2289	1096	416	41970	24342
9	17206	11818	4220	3547	1951	1357	755	40854	23648

Source: Republic of Iraq, Ministry of Planning, Central Bureau of Statistics, 1997 Population Census results, Wasit Governorate, unpublished data

Continue to Table (3)

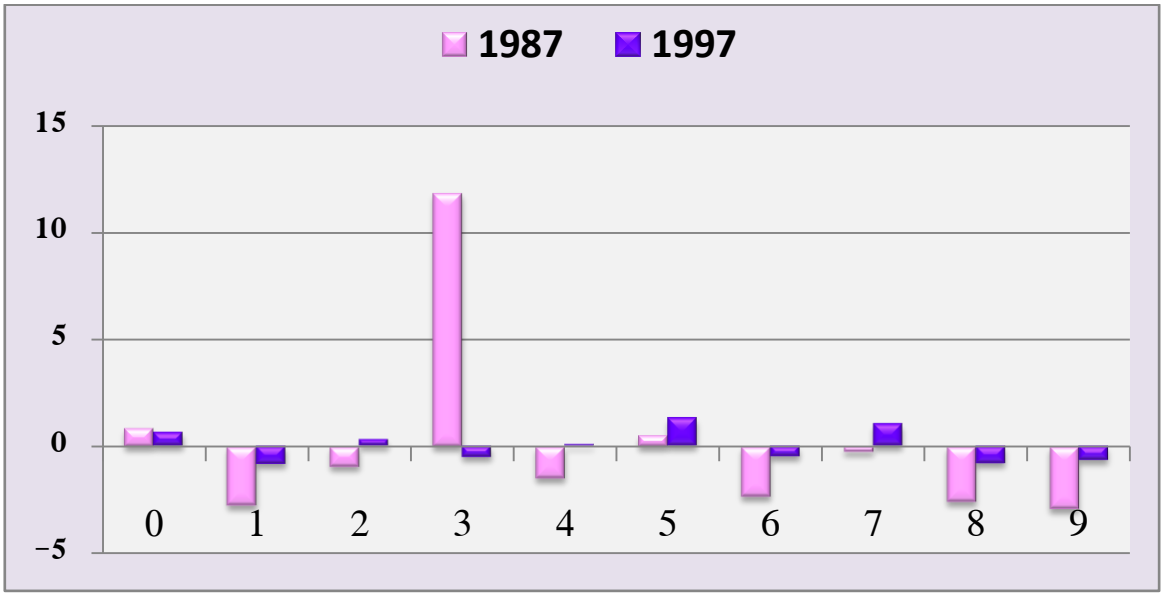
The final figure	Population in ages (79 – 10)	Population in ages (79 – 20)	Column weights 2	Column weights 3	Multiplyin (4×2) g	Multiplyin (5×3) g	Total Mixed 6+7	Percent Distribution	Deviation from the number 10	Absolute deviations of the Myers Index
1	2	3	4	5	6	7	8	9	10	11
less than one year	64270	44485	1	9	64270	400365	464635	10,6	0,63	0,60
1	56317	36022	2	8	112634	288176	400810	9,2	0,83-	0,80
2	58537	39119	3	7	175611	273833	449444	10,3	0,29	0,30
3	52743	33929	4	6	210972	203574	414546	9,5	0,51-	0,50
4	53299	34672	5	5	266495	173360	439855	10,1	0,07	0,10
5	56966	37747	6	4	341796	150988	492784	11,3	1,28	1,30
6	47146	28619	7	3	330022	85857	415879	9,5	0,48-	0,50
7	51908	32994	8	2	415264	65988	481252	11,0	1,01	1,00
8	41970	24342	9	1	377730	24342	402072	9,2	0,80-	0,80
9	40854	23648	10	0	408540	0	408540	9,3	0,65-	0,70
Total							4369817	100		6,6

-The index value ranges between 0-180.

-In the event that the total value of the index is zero, this means that the ages are accurate.

-In the event that the total value of the index is close to 180, this means that the ages are not accurate.

Figure (1): Preference for numbers according to the Myers Index for Wasit Governorate for the years 1987-1997



Source: the researcher, according to Table (2) and (3).

1.1.Methods of the United Nations Secretariat

This indicator was proposed in 1952 by the United Nations to identify the degree of accuracy of age and gender data, and it is known as the index number of the United Nations Secretariat (Hussein, 2009, p. 10).

This scale is based on the calculation of three necessary indicators related to the age and gender ratios of the male and female population in the five-year age groups (Al-Khouli, 2013, p.7). Perhaps the most important measures used to reveal the magnitude of the error for the United Nations Secretariat index (Adwar, 2008, p.139) include:

1-Sex Ratio

2-Age Ratio

3-United Nations Secretary-General

It is common evidence from all the gender ratio index and the age ratio index developed by the United Nations to measure the accuracy of age and gender data in the population census (Mahmoud, ibid, page 231), where the UN Secretariat index can be calculated by following the following steps: (Al-Khorayef, 1993, p. 138):

1-We extract the gender ratio for each age group and then calculate the successive differences for all age groups through the difference between the gender ratio for the next group-the gender ratio for the previous group.

2-We extract the age ratio for each age group by adopting the following formula:

$$\text{Age ratio} = \frac{\text{A certain category in the population is a number}}{(\text{Numerator for the two adjacent categories of total popula tion})\frac{1}{2}}\mathbf{100}\times$$

The age ratio is calculated for all groups except for the first and last category that is within the two adjacent categories. Then the deviation of each ratio is calculated from the number (100), and the absolute deviation values for each calculated age ratio are summed up.

3-The average of the successive differences in the sex ratios and the average deviations for the male and female age ratio is extracted.

4-After that, the formula of the United Nations Secretariat is applied to extract the value of the index (Mahmoud, previous source, p. 231).

United Nations Secretariat index = 3 times the mean gender ratio deviation + (mean age percentage deviation for males + average age deviation for females).

Among the advantages of the United Nations Secretariat from the rest of the indicators, Whipple, Myers and Bashy, the final result obtained is affected by the differences in the extent of the census's coverage of different age groups and by age errors in mentioning ages and preference for certain ages, i.e. age errors, which gives a general idea of the size of errors and is useful for comparing data

to another It also shows the gravity of errors in the reconstruction, as this indicator is applied to the data of the age groups. As a result, when applied to the classified data, a large portion of the errors disappear, with the appearance of fluctuations in the age data as a result of the conditions that the country is experiencing, such as wars and migratory movements, and is affected by fluctuations in the population whose number is small.In terms of its shortcomings, the differences that occur in the ratio of age and gender are due to abnormal demographic facts and incidents (Fawzia, 2014, p. 136). As for judging the quality and accuracy of data by using this indicator to an acceptable extent (Department of Statistics, 2015, p. 36):

-If the index value is less than (20), it shall be described by the data as being familiar to an acceptable extent.

-If the index value is between (20-40), then it is described as medium confidence.

-If it is greater than (40), then the data can not be trusted.

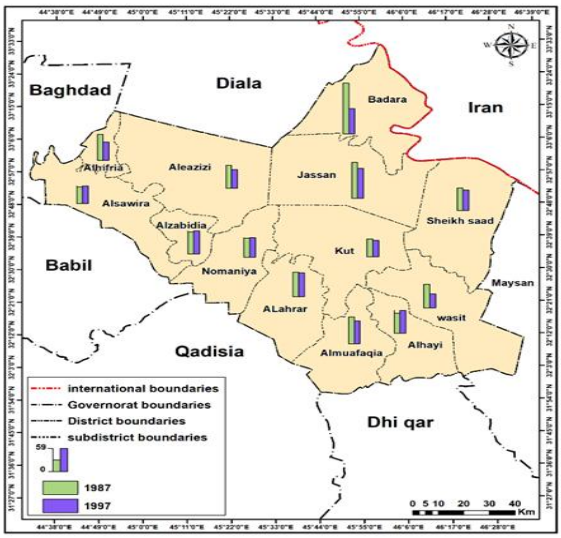
The results of Table (4) and Map (3) appeared as a summary of the calculations that we made regarding the calculation of the value of the index of the United Nations Secretariat's index of the population of administrative units in Wasit Governorate for the years 1987 and 1997.

Table (4): The United Nations Secretariat's index of the population of Wasit Governorate for the years 1987-1997

No	Administrative units	1987	1997
1	Al Kut District Center	57,9	53,6
2	Wasit sub-district	77,5	46,1
3	Sheikh Saad district	73,7	66,6
4	Nu'maniyah District Center	62,6	63,4
5	Al AhrarCaza Center	80,2	78,4
6	District District Center	65,3	74,8
7	Al Mawfakia District Center	87,5	74,6
8	Badra District Center	166	83,4
9	Jassan sub-district	117, 1	98,5
10	Essaouira district center	53,9	57,3
11	Al-Zubaidiyah District Center	71,6	75
12	Azizia District Center	74,9	60,6
13	Hafariyeh sub-district	85,6	59,7
Total		52,3	53,7

Source: Republic of Iraq, Ministry of Planning, Central Bureau of Statistics, Population Census results for 1987, 1997, Wasit Governorate, unpublished data.

Map (3): The United Nations Secretariat's Index of Wasit Governorate Population for the Years 1987-1997



Source: the researcher, based on Table (4).

As for Wasit Governorate, the index of the United Nations Secretariat reached (52.3) in the 1987 census, while in the 1997 census the value of the United Nations Secretariat index reached (53.7), as shown in tables (5) (6). It indicates a noticeable decline in the level of casting data for the age and age of the population and in the accuracy of registration, i.e. it still suffers from some problems as a result of errors of inclusion or content. According to the general population census data for the years 1987 and 1997, it contained errors arising from deficiencies in recording data and their quality. By reviewing the outcomes of the average deviations of the Wasit governorate during the two years for both the age and gender ratios from the value (100), the deviations of the gender ratios for the year 1987 Figure (2) shows that the young age group (20-24) is higher than the general pattern for it, as it reached (109.7) Then it decreased in the young age group (25-29) and the age group (30-34), then it increased from (100) in the age group (40-44) (45-49), then it decreased in the advanced age group. This discrepancy or abnormally large discrepancy in the sex ratios indicates the inaccuracy of providing age data. As for age deviations for males, they were (15.6) higher than the percentage of age deviations for adult females (13).

In the 1997 census, table (6) and Figure (3) show the deviations of gender ratios that decreased in the young age group (20-24), while they increased from (100) in the young age group (25-29) and then decreased in the age group. (35-39) Then it increased in the age group (55-59). As for the age deviation ratios for males, they reached (15.1) higher than the age deviation ratios for females, which amounted to (12.8). This disparity in gender and age ratios for both years indicates the governorate's population censuses due to several factors, including the authority of some customs and traditions in the governorate that prefer not to provide any data related to females and a lack of awareness of the importance of making correct data, in addition to the governorate's low educational level.Being able to remember their ages or provide information may be helpful to a data collector in trying to estimate their age correctly and accurately.

As for the administrative units of the residents of Wasit Governorate for the years 1987 and 1997, the United Nations Secretariat index was as follows:

1-In the 1987 census, the highest value for the UN Secretariat index was (Jassan sub-district), which was (117.1), while the lowest value was for (Essaouira District Center), which amounted to (53.9). As for the rest of the administrative units, they ranged between the two mentioned values.

2-The 1997 census, the highest value was in (Jassan sub-district), which amounted to (98.5), and the lowest value for the index was in (Wasit sub-district), which amounted to (46.1). As for the rest of the administrative units, they ranged between the two mentioned values. It is clear from the above, The highest value was in the 1987 census and the 1997 census in (Jassan sub-district), indicating that it suffers from inaccuracies in recording and counting these data, meaning that the index value is much higher than the value (40). Recording ages, failure to give real ages, lack of awareness of censuses, and low cultural level.

As the gender ratios showed fluctuating between one age group and another, this is also a preliminary indication of the presence of errors in the data. Most likely, the deviation of the sex ratio from what is expected is not due to the previously mentioned gender error, but rather to a lack of limitation for one of the two types:As for males, this is due to evasion from the service of conscription Al-Askari, for example, or fear of envy, and as for females, it is due to the bad habits of some societies that deliberately do not register females because they believe they are naked or have a jinx, which is very wrong and against Islamic law (Sarj, ibid., Pp. 44-45).

Table (5): Calculating a reconstruction accuracy index using the United Nations Secretariat for Wasit Governorate for the year 1987

Age groups (1)	number		Gender ratios analysis		Age ratios analysis (males)		Age ratios analysis (females)	
	Males (2)	Female (3)	Ratios (4)	Cascading differences (5)	Ratios (6)	Deviation from100 (7)	Ratios (8)	Deviation from100 (9)
less than5	46971	45489	103,3	0	0	0	0	0
5	44830	42680	105,0	1,8	103,4	3,4	102,2	2,2
10	39741	38066	104,4	0,6-	98,8	1,2-	101,0	1,0
15	35628	32678	109,0	4,6	107,2	7,2	104,7	4,7
20	26711	24342	109,7	0,7	105,6	5,6	101,1	1,1
25	14971	15483	96,7	13,0-	70,2	29,8-	76,0	24,0-
30	15955	16400	97,3	0,6	115,1	15,1	111,8	11,8
35	12749	13852	92,0	5,2-	96,8	3,2-	105,3	5,3
40	10374	9920	104,6	12,5	100,7	0,7	93,7	6,3-
45	7861	7326	107,3	2,7	104,7	4,7	95,2	4,8-
50	4649	5476	84,9	22,4-	70,1	29,9-	83,2	16,8-
55	5399	5830	92,6	7,7	122,2	22,2	109,0	9,0
60	4189	5223	80,2	12,4-	91,9	8,1-	107,5	7,5

65	3720	3890	95,6	15,4	100,8	0,8	91,9	8,1-
74 - 70	3190	3244	98,3	2,7	171,5	71,5	166,8	66,8
The sum excludes the sign (-, +) Average = total over 13 Arithmetic mean = (three times the gender strands + average deviations in age ratios for males and females)								

= 3 x 7,9 + (15,6 + 13) = 52,3

Columns (2, 3) The Central Bureau of Statistics/Population Census 1987.

Columns (4, 5, 6, 7, 8, 9) were calculated by the researcher depending on the source: the Republic of Iraq, the Ministry of Planning, the Central Bureau of Statistics, the results of the population census. For the year 1987, Wasit Governorate, unpublished data.

Table (6): The United Nations Secretariat set a new record for reconstruction accuracy in Wasit Governorate in 1997.

Age groups (1)	**number**		**Gender ratios analysis**		**Age ratios analysis (males)**		**Age ratios analysis (females)**	
	Males (2)	**Female (3)**	**Female (4)**	**Cascading differences (5)**	**Ratios (6)**	**Deviation from100 (7)**	**Ratios (8)**	**Deviation from100 (9)**
less than5	68631	67640	101,5	0	0	0	0	0
- 5	58405	57083	102,3	0,9	99,3	0,7-	98,8	1,2-
- 10	49038	47861	102,5	0,1	93,6	6,4-	93,6	6,4-
- 15	46359	45135	102,7	0,3	107,3	7,3	104,1	4,1
- 20	37342	38816	96,2	6,5-	93,6	6,4-	99,1	0,9-
- 25	33446	33230	100,7	4,4	111,8	11,8	105,5	5,5
- 30	22497	24177	93,1	7,6-	100,7	0,7	99,4	0,6-
- 35	11227	15439	72,7	20,3-	61,3	38,7-	76,2	23,8-
- 40	14123	16319	86,5	13,8	123,6	23,6	111,3	11,3
- 45	11620	13874	83,8	2,8-	99,3	0,7-	107,2	7,2
- 50	9271	9556	97,0	13,3	101,2	1,2	91,6	8,4-
- 55	6697	7000	95,7	1,3-	102,3	2,3	95,9	4,1-
- 60	3820	5037	75,8	19,8-	69,4	30,6-	82,9	17,1-
- 65	4309	5153	83,6	7,8	126,3	26,3	110,8	10,8
74 - 70	3005	4264	70,5	13,1-	139,5	39,5	165,5	65,5

The sum excludes the sign (-, +) Average = total over 13 Arithmetic mean = (three times the gender strands + average deviations in age ratios for males and females)					

= 3 x 8,6 + (15,1 + 12,8) = 53,7

-Columns (2, 3) of the Central Bureau of Statistics/Population Census of 1997

-Columns (4, 5, 6, 7, 8, 9) were calculated by the researcher with approval. Source: Republic of Iraq, Ministry of Planning, Central Bureau of Statistics, Population Census results For the year 1997, Wasit Governorate, unpublished data.

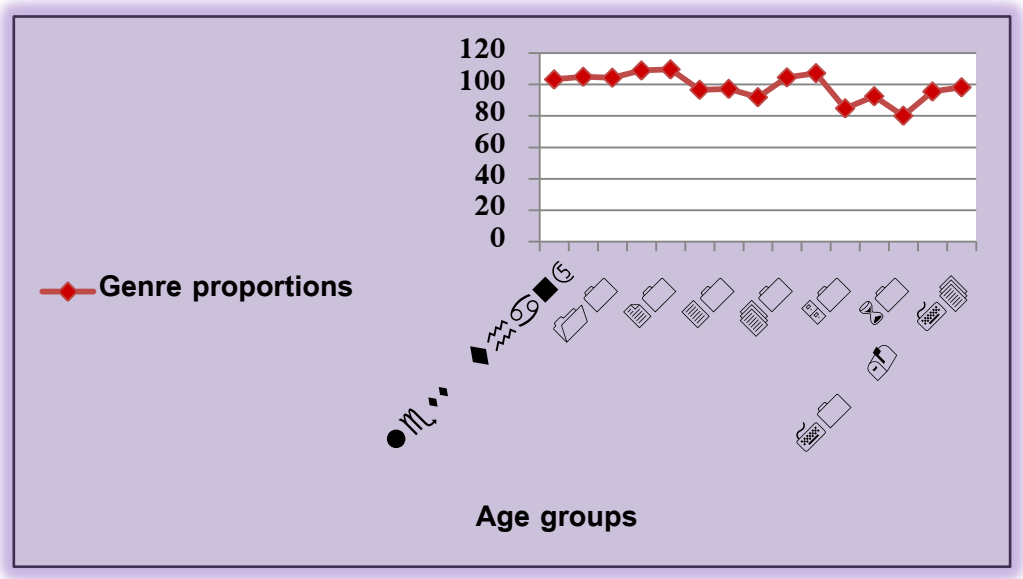
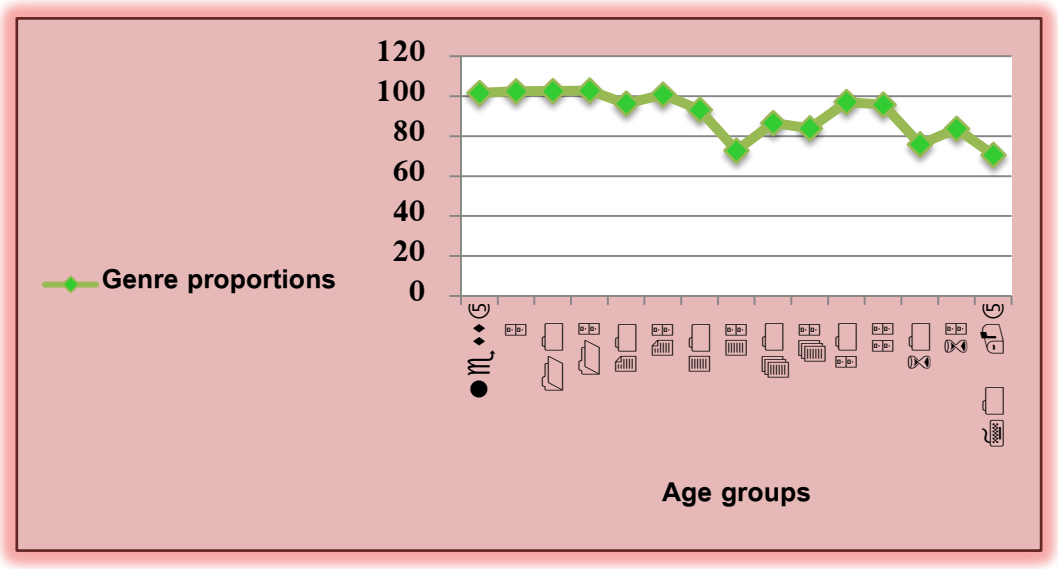


Figure (2): Species deviations in Wasit Governorate for the year 1987

Source: the researcher based on Table (5).

Figure (3): Gender ratios deviations for Wasit Governorate for the year 1997



Source: the researcher, based on Table (6).

5. Conclusions

1. Evaluating the accuracy of age data using criteria such as the Myers Index, Bashi, Weibel, and the United Nations Secretariat to determine their accuracy and quality by applying them to the 1987 and 1997 censuses due to the availability of data, whereas in 2007 and 2017 only the census data were based on estimates and expectations.

2. The results showed, by applying the Myers index for the 1987 census and the 1997 census of Wasit governorate, there is a preference for ages that are different from the age, such as numbers (7, 4, 2,... etc.).

3. Using the scale of the United Nations Secretariat to evaluate the age and gender composition data in Wasit Governorate. This data became clear to us with many errors. This error does not exceed the upper limit of the scale for developing countries.

4. By applying the Myers index for the 1987 census and the 1997 census of Wasit governorate, the results showed that there is a preference for ages that are different from the age, such as numbers (7, 4, 2, etc.).

5. Using the scale of the United Nations Secretariat to evaluate the age and gender composition data in Wasit Governorate. This data became clear to us with many errors, as the value of the index calculated for this scale during the years 1987 and 1997 for Wasit Governorate amounted to (52.3) (53.7). This error does not exceed the upper limit of the scale for developing countries.

6. Giving incorrect data to answer questions of age in the census forms, and this is due to the lack of experience of those involved in data collection and the presence of illiteracy among the population. The degree of accuracy of the data, as there is a tendency for some not to accurately state the age or deliberately give wrong data.

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