

Workshop on Demographic Measures and their Policy Implications: The Case of ECO Countries

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Outline

- Basic demographic concepts
- Sources of demographic data
- Population growth, age-sex composition and marital status (marriage and divorce)
- Key demographic indicators
 - Fertility
 - Mortality
 - Migration
- MORTPAK for Windows: Version 4.3
 - Programmes and application
- Discussion and evaluation

DAY 2: AFTERNOON SESSION

Migration

Why study migration?

- One of the 3 components of population change
 - Less attention
 - Conceptual, methodological and practical challenges
- Impact on size & age-sex structure of population
- Future migration trends
- People's experiences of migration
- Why do people migrate

Migration defined

Unlike births & deaths difficult to define

Migration is “a permanent or semi-permanent change of residence by an individual or group of people”

Ogden, 2000: 504 (The Dictionary of Human Geography)

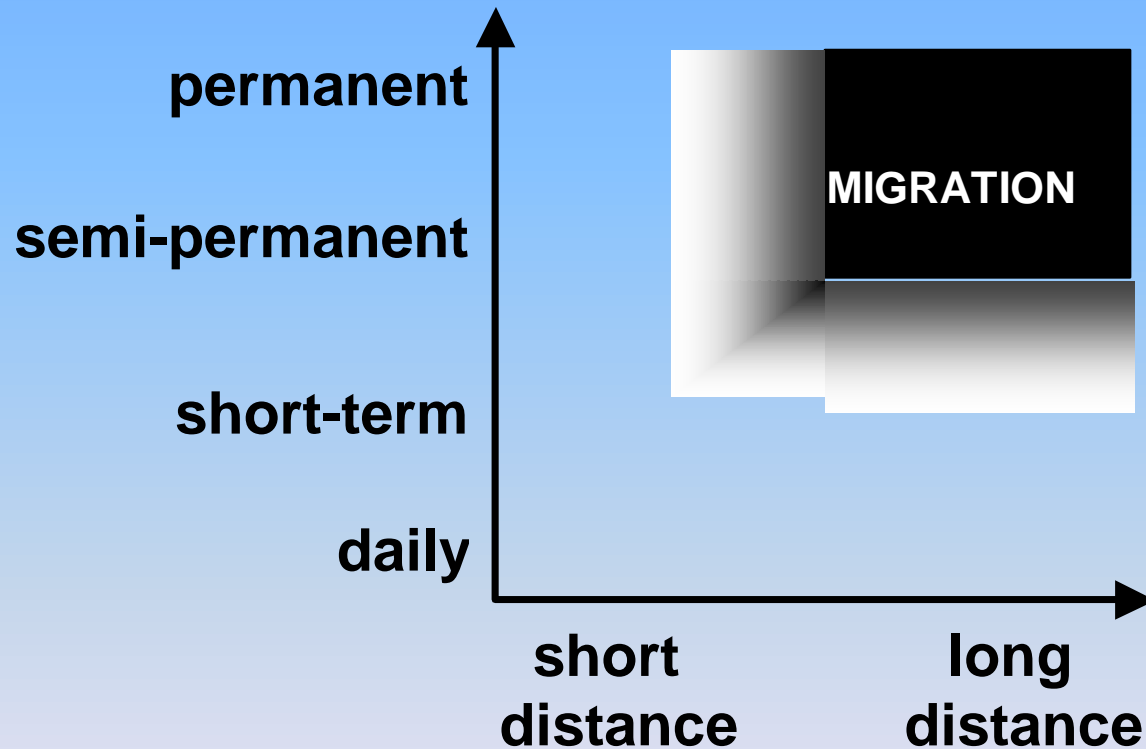
“Migration is a form of . . . spatial mobility involving a change of usual residence between clearly defined geographical units”

Shryock et al., 1976: 349. (The Methods and Materials of Demography)

Migration defined

- Spatial mobility
 - Includes all types of geographical movement
- Migration
 - Has TIME and SPACE aspects to its definition.
 - Excludes short-term & short-distance moves
- Circulation
 - Short term

Migration defined



Migration terms

- **MIGRATION FLOWS**
 - No. of moves over a period of time
 - e.g. people moving to Tehran from other parts of Iran during 2006
- **MIGRATION STREAMS**
 - Migration flows from one place to another place
- **MIGRANT STOCKS**
 - No.s at a point in time
 - e.g. foreign-born population of Iran at the time of the 2006 census

Migration terms

- **INTERNAL MIGRATION**
 - Migration within a country
- **IN-MIGRATION**
 - Migration into a place from somewhere else within a country
- **OUT-MIGRATION**
 - Migration out of a place to somewhere else within a country

Migration terms

- **INTERNATIONAL MIGRATION**
 - Migration between countries
- **IMMIGRATION**
 - Migration to a country from another country
- **EMIGRATION**
 - Migration out of a country to another country

Migration terms

- **GROSS MIGRATION**
 - Numbers of migrations (immigration, emigration, in-migration, out-migration)

- **NET MIGRATION**
 - in-migration – out-migration
 - immigration – emigration

Immigration Rate

$$\frac{\text{Number of immigrants}}{\text{Total population at destination}} \times K = \frac{720,461}{262,755,000} \times 1,000 = 2.7$$

“In fiscal year 1995, the U.S. immigration rate was 2.7 immigrants (counting legal immigrants only) for every 1,000 residents.”

During the peak immigration years (1901-1910), U.S. immigration averaged 10.4 immigrants per 1,000 residents.

Emigration Rate

$$\frac{\text{Number of emigrants}}{\text{Total population at origin}} \times K = \frac{222,000}{262,755,000} \times 1,000 = 0.8$$

“In 1995, the U.S. emigration rate was estimated to be 0.8 per 1,000 residents.”

Net Migration Rate

$$\frac{\text{Number of immigrants} - \text{Number of emigrants}}{\text{Total population}} \times K = \frac{720,461 - 222,000}{262,755,000} \times 1,000 = +1.9$$

“In 1995, the United States experienced an increased of 1.9 persons per 1,000 population through net migration (excluding illegal immigration).”

By contrast, Estonia had a net migration rate of -5.5 per 1,000 in 1995 (or a net emigration of 5.5 persons per 1,000 population).

MORTPAK FOR WINDOWS: VERSION 4.3

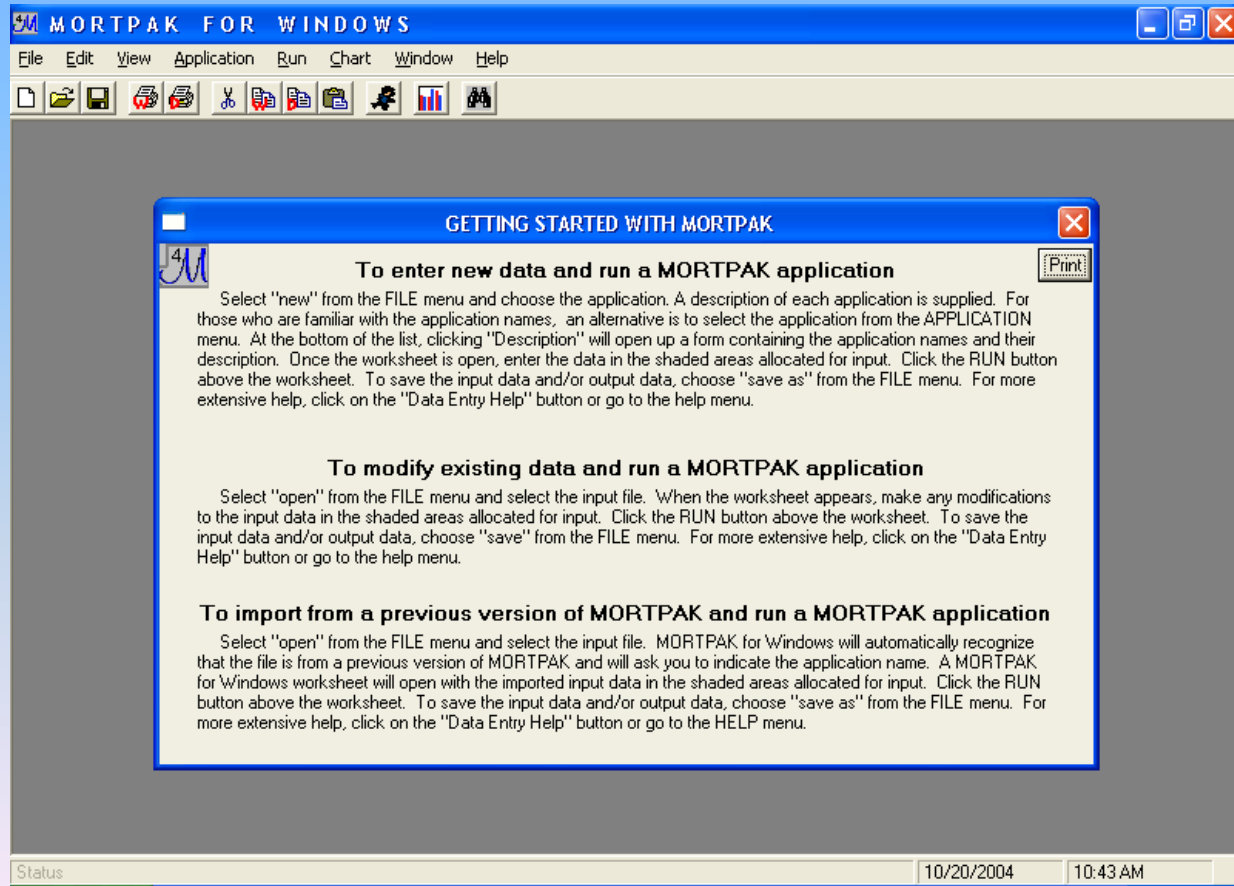
- This software is prepared by the United Nations Population Division, New York. This software is very useful to indirectly estimate fertility, infant and child mortality and adult mortality.
- It also includes programmes to construct life-tables and population projections.

Example:

Construction of Abridged Life Table

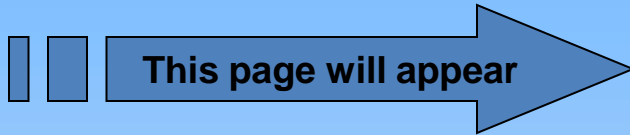
Step 1. Install MORTPAK for Windows

Step 2. Click on the icon



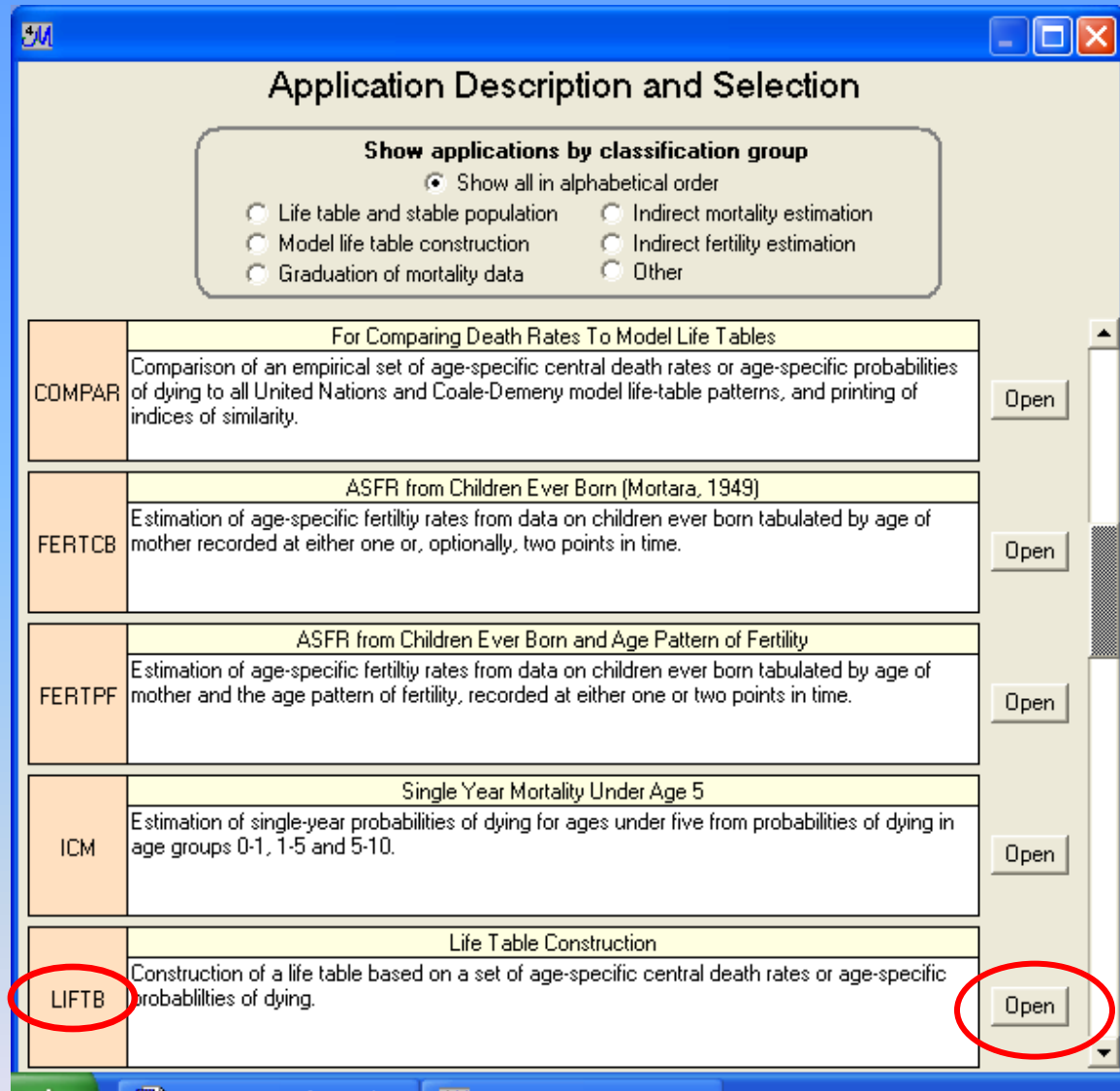
Step 3. Click on 'FILE'

Step 4. Select 'NEW'



Step 5. Select 'LIFTB'

Click 'OPEN'



Application Description and Selection

Show applications by classification group

- Show all in alphabetical order
- Life table and stable population
- Model life table construction
- Graduation of mortality data
- Indirect mortality estimation
- Indirect fertility estimation
- Other

COMPAR	For Comparing Death Rates To Model Life Tables Comparison of an empirical set of age-specific central death rates or age-specific probabilities of dying to all United Nations and Coale-Demeny model life-table patterns, and printing of indices of similarity.	Open
FERTCB	ASFR from Children Ever Born (Mortara, 1949) Estimation of age-specific fertility rates from data on children ever born tabulated by age of mother recorded at either one or, optionally, two points in time.	Open
FERTPF	ASFR from Children Ever Born and Age Pattern of Fertility Estimation of age-specific fertility rates from data on children ever born tabulated by age of mother and the age pattern of fertility, recorded at either one or two points in time.	Open
ICM	Single Year Mortality Under Age 5 Estimation of single-year probabilities of dying for ages under five from probabilities of dying in age groups 0-1, 1-5 and 5-10.	Open
LIFTB	Life Table Construction Construction of a life table based on a set of age-specific central death rates or age-specific probabilities of dying.	Open

This page will appear

Step 6. Click on space provided for 'TITLE'
Enter title of Life Table to be printed e.g.
Kazakhstan, male, 2005

Step 7. Click on 'SEX'
Drop down menu will appear
Select 'Male' or 'Female'

Step 8. Click on 'DATA TYPE'
Drop down menu will appear
Select 'q(x, n), m(x, n), l(x)
Usually it will be m(x, n) – age-specific death rate

Step 9. Select 'Same as input data'

Step 10. Enter m(x, n) data (for all age groups)
Note: Rates to be specified per person. For the age group 0-1 enter IMR/IDR

Step 11. Click 'RUN'

Input File Name: C:\MORTPAK4\Exercise1.mpl
When last updated: 20 October 2004

Construction of a life table.

TITLE: Hypothetical Population

Sex: Males

Data Type: m(x,n)

(Output) open age group: Same as input data

Age Group	m(x,n)
0 - 1	0.00870
1 - 5	0.00120
5 - 10	0.00085
10 - 15	0.00070
15 - 20	0.00046
20 - 25	0.00033
25 - 30	0.00025
30 - 35	0.00065
35 - 40	0.00086
40 - 45	0.00099
45 - 50	0.00112
50 - 55	0.00453
55 - 60	0.00678
60 - 65	0.00759

Life Table will appear

MORTPAK FOR WINDOWS - [Selected application is LIFTB (Exercise1.mpl)]

File Edit View Application Run Chart Window Help

Input File Name: C:\MORTPAK4\Exercise1.mpl
When last updated: 20 October 2004

Data Entry Help
Show Document Output

Construction of a life table.

TITLE: Hypothetical Population
Sex: Males
Data Type: m(x,n)
(Output) open age group: Same as input data

Age Group	m(x,n)	Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)	a(x,n)
0 - 1	0.00870	0	0.00870	0.00863	100000.	863.	99195.	0.98923	8111658.	81.117	0.067
1 - 5	0.00120	1	0.00120	0.00479	99137.	475.	395422.	0.99524	8012463.	80.822	1.627
5 - 10	0.00085	5	0.00085	0.00426	98662.	420.	492263.	0.99614	7617041.	77.203	2.500
10 - 15	0.00070	10	0.00070	0.00347	98243.	341.	490361.	0.99704	7124778.	72.522	2.500
15 - 20	0.00046	15	0.00046	0.00230	97902.	225.	488912.	0.99806	6634417.	67.766	2.344
20 - 25	0.00033	20	0.00033	0.00165	97677.	161.	487961.	0.99863	6145506.	62.917	2.372
25 - 30	0.00025	25	0.00025	0.00125	97516.	122.	487292.	0.99788	5657544.	58.017	2.641
30 - 35	0.00065	30	0.00065	0.00325	97394.	316.	486261.	0.99614	5170252.	53.086	2.756
35 - 40	0.00086	35	0.00086	0.00429	97078.	417.	484384.	0.99536	4683991.	48.250	2.586
40 - 45	0.00099	40	0.00099	0.00494	96661.	477.	482139.	0.99504	4199607.	43.447	2.553
45 - 50	0.00112	45	0.00112	0.00559	96184.	537.	479746.	0.98730	3717468.	38.650	2.814
50 - 55	0.00453	50	0.00453	0.02243	95647.	2146.	473654.	0.97117	3237722.	33.851	2.866
55 - 60	0.00678	55	0.00678	0.03336	93501.	3119.	460000.	0.96457	2764068.	29.562	2.593
60 - 65	0.00759	60	0.00759	0.03726	90382.	3368.	443704.	0.95779	2304068.	25.492	2.563
65 - 70	0.00989	65	0.00989	0.04830	87015.	4203.	424977.	0.94512	1860364.	21.380	2.598
70 - 75	0.01340	70	0.01340	0.06499	82812.	5382.	401655.	0.90371	1435387.	17.333	2.695
75 - 80	0.02890	75	0.02890	0.13548	77429.	10490.	362981.	0.83085	1033733.	13.351	2.696
80 - 85	0.04590	80	0.04590	0.20680	66939.	13843.	301584.	0.74497	670752.	10.020	2.608
85 - 90	0.07680	85	0.07680	0.32497	53097.	17255.	224672.	0.54328	369167.	6.953	2.635
90 - 95	0.18900	90	0.18900	0.64364	35842.	23069.	122060.	0.18351	144495.	4.031	2.523
95 - 100	0.56700	95	0.56700	0.99435	12772.	12700.	22399.	0.00161	22435.	1.757	1.735
		100	1.99722	...	72.	72.	36.	...	36.	0.501	0.501

First entry of S(x,n) is for survivorship of 5 cohorts of birth to age group 0-4 = L(0,5) / 500000
Second entry of S(x,n) is for S(0,5) = L(5,5) / L(0,5)

Status 10/20/2004 11:06 AM

Discussion and evaluation

Reference Materials:

- Population Reference Bureau's, Population Handbook, 5th Edition by Arthur Haupt and Thomas T Kane, 2004.
- United Nations, Manual X: Indirect Techniques for Demographic Estimation, United Nations, New York, 1983.
- MORTPAK for Windows, version 4.3, The United Nations Software Package for Demographic Measurement, United Nations Population Division, New York.
- Global and regional population data websites:
- United Nations Population Division, New York. <http://www.unpopulation.org>
- Population Reference Bureau. <http://www.prb.org>
- United Nations Economic and Social Commission for Asia and the Pacific. <http://www.unescap.org>
- Australian Demographic and Social Research Institute, Australian National University, Canberra, Australia. <http://adsri.anu.edu.au/demo-stats>

Selected References:

- Abbasi-Shavazi and McDonald, 2006, Fertility decline in Iran: 1972-2000, *Asian Population Studies*,
- Abbasi-Shavazi, et all. 2005, **Trends and emerging issues of health and mortality in the Islamic Republic of Iran**, United Nation Economic and Social Commission for Asia and the Pacific, New York. pp 147-160.
- Hayes, A. 2005, **Population, Reproductive Health and Poverty Eradication: Is the Cairo Agenda Still Relevant?** *University of Tehran*.
- Abbasi-Shavazi and McDonald, Hosseini, M., 2009, **Fertility Transition in Iran: Revolution and Reproduction**, *Springer*.
- Abbasi-Shavazi, MJ., Hosseini-Chavoshi, M., and P. McDonald, 2007, The path to below –replacement fertility in Iran, *Asia-Pacific Population Journal*, Vol 22 (No. 2), 91-112.
- Abbasi-Shavazi, MJ., and P. McDonald, 2006, The fertility decline in the Islamic Republic of Iran, 1972-2000, *Asian Population Studies*, 2(3): 217-237.
- Yaukey, D., 1985, *Demography: The study of Human Population*, Waveland Press, Illinois.