University of Colombo
Faculty of Arts
Bachelor of Arts Degree Examination (Special) - Fourth Year
Semester End Examination- Semester 1 - 2020/2021
DMG 4168: Labour Force Projection Methods

Answer three (03) questions only
Calculators can be used   Time: Two (02) hours
This paper contains five (05) questions and two (02) pages

1. a) "Briefly explain the sources of data which can be used in analyzing the labour force in a country".

    (05 Marks)

    b) Examine the labour force indicators which can be used in analyzing labour force in a country by citing examples.

    (15 Marks)

2. a) Suppose you need to make a labour force projection for a country. Explain how you would plan your projection by using examples.

    (05 Marks)

    b) Suppose that you have been provided the following sets of data to project future activity rates for a country. By using the data given below, answer the following questions.

Age group	Activity rates for females	
	2014	2019
15-19	35.5	38.8
20-24	67.5	72.5
25-29	62.5	60.0
30-34	45.5	48.8
35-39	42.0	38.0
40-44	65.0	72.5
45-49	64.0	70.0
50-54	52.0	52.0
55-59	45.0	44.0
60-74	20.0	28.0

    i. Suggest suitable technique/s for this projection and provide reasons for your suggestion.

    (05 Marks)

    ii. Project future activity rates by using an indirect extrapolation method and correction coefficient "a".

    (08 Marks)

$$\text{Equation } (a): \Delta_{t,t_1}^x = (u_t^x \times \alpha)\left(\frac{a_t^x \times u_t^x}{a_{t_0}^x \times u_{t_0}^x}\right)$$

    iii. Interpret your results

    (02 Marks)

3. (a) Once you projected the future activity rates for a country, explain three (03) calculations that you can compute based on the projected data.

(06 M

(b) Explain how you would make policy recommendations for future labour force bais each calculation that you have suggested for the question 3(a) by providing examp

(14 M

4. The following table provides male activity rates in 2019 for the country 'A'. Using data and attached life table for the year 2011 for the country A, answer following quest

Age group	Male Activity rates
15-19	28.0
20-24	85.0
25-29	90.0
30-34	98.0
35-39	92.0
40-44	91.0
45-49	93.0
50-54	86.0
55-59	85.0
60-64	44.0

a) Calculate age specific gross years of active life

b) Calculate percentages of total gross working years and total gross non-working yea for each age group

(03 Mark

c) Calculate the total gross working years of a person by the age of 50 years and age of 6 years.

(05 Mark

d) Calculate the age-specific net years of active life and interpret your results

(02 Marks

e) Compare the above results of age specific gross years of working life and age specifi net years of working life and interpret your results

(05 Marks

(05 Marks

5. Briefly explain the following relationships

a) Usually economically active population and currently economically active population
b) Labour supply and labour demand
c) Under-employed persons and unemployed persons
d) Female labourforce participation and male labourforce participation

(05x4 = 20 Marks)

Life Table Male - 2011

Age	nqx	lx	ndx	nLx	nsx	Tx	ex
0	0.01465	1000000	1465	98700	0.98436 (1)	6882161	68.8
1	0.00300	98535	296	393479	0.99693 (2)	6783461	68.8
5	0.00216	98239	212	490666	0.99758	6389982	65.0
10	0.00268	98027	263	489479	0.99602	5899315	60.2
15	0.00607	97764	593	487530	0.99075	5409836	55.3
20	0.01266	97171	1230	483019	0.98544	4922306	50.7
25	0.01578	95941	1514	475985	0.98403	4439287	46.3
30	0.01604	94427	1515	468384	0.98309	3963302	42.0
35	0.01823	92912	1694	460462	0.97908	3494918	37.6
40	0.02432	91219	2218	450827	0.97083	3034456	33.3
45	0.03489	89000	3105	437678	0.95765	2583629	29.0
50	0.05097	85895	4378	419143	0.93810	2145950	25.0
55	0.07449	81517	6072	393197	0.90985	1726807	21.2
60	0.10820	75445	8163	357752	0.86983	1333610	17.7