



2024

LABOUR FORCE SURVEY QUARTERLY REPORT

SECOND QUARTER

NATIONAL STATISTICS BUREAU

2024

**LABOUR FORCE SURVEY
QUARTERLY REPORT**

SECOND QUARTER

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Chapter 1

EXECUTIVE SUMMARY

1.1 INTRODUCTION

The second quarterly labour force survey for the year 2024 is conducted in the month of May. The extent and scope of the survey is for the entire *Dzongkhags* with an exception of Gasa covering 2940 households. It is funded by the Royal Government of Bhutan and is aimed at furnishing critical data for monitoring socio-economic development, informing policy formulation related to job creation and poverty reduction, and supporting similar programs.

The report presents the key findings from the labour related indicators like labour force, employment, unemployment and the youth unemployment for the second quarter. The statistics are measured based on the labour force framework and standards provided by the International Labour Organization (ILO) for labour market statistics for international comparability

1.2 KEY HIGHLIGHTS

Key Indicator (%)	Quarter (2024)	
	Q1	Q2
Labour Force Participation Rate		
By Sex		
Male	72.8	72.5
Female	54.1	50.0
Total	63.9	61.8
By Area		
Urban	58.8	56.7
Rural	67.0	65.0
Total	63.9	61.8
Inactivity Rate		
By Sex		
Male	27.2	27.5
Female	45.9	50.0
Total	36.1	38.2
By Area		
Urban	41.2	43.3
Rural	33.0	35.0
Total	36.1	38.2
Employment Rate		
By Sex		
Male	96.0	96.9
Female	95.7	95.5
Total	95.9	96.3

Key Indicator (Total)	Quarter (2024)	
	Q1	Q2
Labour Force Population		
By Sex		
Male	229,024	226,821
Female	154,736	142,100
Total	383,760	368,921
By Area		
Urban	131,737	130,710
Rural	252,023	238,211
Total	383,760	368,921
Inactive Population		
By Sex		
Male	85,562	85,831
Female	131,090	142,174
Total	216,652	228,005
By Area		
Urban	92,262	99,655
Rural	124,390	128,350
Total	216,652	228,005
Employed Population		
By Sex		
Male	219,922	219,765
Female	148,126	135,650
Total	368,048	355,416

Key Indicator (%)	Quarter (2024)	
	Q1	Q2
By Area		
Urban	93.4	94.3
Rural	97.2	97.5
Total	95.9	96.3
By Sector		
Agriculture	41.3	41.2
Male	34.2	34.7
Female	52	51.8
Industry	14.8	13.5
Male	17.9	16.1
Female	10.2	9.2
Service	43.9	45.3
Male	48.0	49.2
Female	37.8	39.1
By Age Groups		
15-64	95.70	96.16
Male	95.80	96.74
Female	95.50	95.22
18-64	95.80	96.15
Male	96.00	96.73
Female	95.50	95.22
15-65+	95.9	96.3
Male	96.0	96.9
Female	95.7	95.5
Unemployment Rate		
By Sex		
Male	4.0	3.1
Female	4.3	4.5
Total	4.1	3.7
By Area		
Urban	6.6	5.7
Rural	2.8	2.5
Total	4.1	3.7
Youth Employment Rate		
By Sex		
Male	25.7	18.9
Female	19.7	19.6
Total	22.9	19.2
By Area		
Urban	31.5	21.7
Rural	17.9	16.7
Total	22.9	19.2

Key Indicator (Total)	Quarter (2024)	
	Q1	Q2
By Area		
Urban	123,091	123,225
Rural	244,957	232,191
Total	368,048	355,416
By Sector		
Agriculture	152,151	146,403
Male	75,119	76,182
Female	77,032	70,221
Industry	54,314	47,921
Male	39,266	35,467
Female	15,048	12,455
Service	161,584	161,092
Male	105,537	108,116
Female	56,046	52,975
By Age Groups		
15-64	349,122	338,296
Male	208,008	209,687
Female	141,114	128,609
18-64	347,706	337,361
Male	207,162	208,977
Female	140,544	128,383
15-65+	368,048	355,416
Male	219,922	219,765
Female	148,126	135,650
Unemployed Population		
By Sex		
Male	9,102	7,056
Female	6,610	6,449
Total	15,712	13,505
By Area		
Urban	8,646	7,485
Rural	7,066	6,020
Total	15,712	13,505
Youth Employed Population		
By Sex		
Male	5,382	4,187
Female	3,549	3,716
Total	8,932	7,903
By Area		
Urban	4,538	4,470
Rural	4,394	3,433
Total	8,932	7,903

Chapter 2

LABOUR FORCE AND INACTIVE POPULATION

As per the ILO labour force framework (Figure 2.1), all persons 15 years and above are considered as the working-age population. The working age population is divided into two major groups: economically active and economically

inactive. The economically active population which is also referred to as the 'labour force', is further composed of employed and unemployed persons.

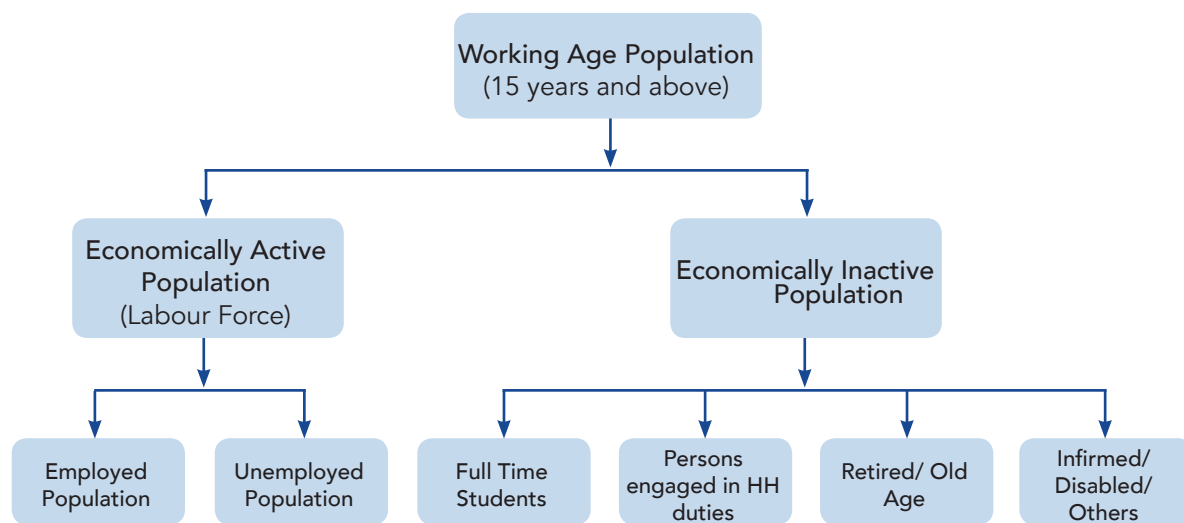


Figure 2.1 The basic building blocks of the labour force

UNDERSTANDING LABOUR FORCE CONCEPTS AND THE INDICATORS

2.1 Working age population

Three criteria define employment (including self-employment):

1. **Age:** To be in the age range chosen to define the active population, usually 15 years and older.
2. **Duration of the activity:** All persons who have worked at least one hour during a specified brief period (in general, one week) including all those who have a job, but are on leave for various reasons.
3. **Nature of the activity:** Must be an activity of production of goods and services according to the national accounting system (*International Conference of Labour Statisticians, 1982*).

Table 2.1 Working-Age Population By Area And Sex, Second Quarter-2024

Sex	Urban		Rural		Both Areas	
	Number	Percent	Number	Percent	Number	Percent
Male	118,701	51.5	193,950	52.9	312,652	52.4
Female	111,664	48.5	172,610	47.1	284,274	47.6
Both Sex	230,365	100.0	366,560	100.0	596,926	100.0

Working age population is defined as all persons aged 15 years and above.

2.2 Labour Force (Economically Active) Population

Economically active population: All the persons aged 15 years and above who are either employed or unemployed during the reference period.

2.3 Labour Force Participation Rate (LFPR):

The labour force participation rate (LFPR in the diagram below) provides information about the size of the supply of labour currently available for work compared to the whole working-age population.

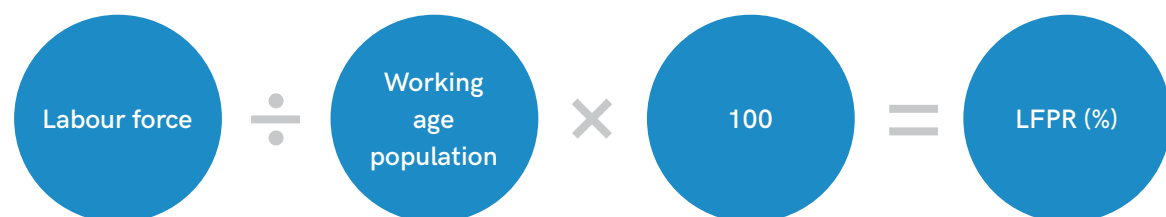


Table 2.2 Distribution of Economically Active Persons by Sex and Area, Second Quarter-2024

Sex	Urban		Rural		Both Areas	
	Number	Percent	Number	Percent	Number	Percent
Male	83,421	63.8	143,400	60.2	226,821	61.5
Female	47,289	36.2	94,811	39.8	142,100	38.5
Both Sex	130,710	100.0	238,211	100.0	368,921	100.0

Table 2.3 Distribution of Economically Inactive Population by Sex and Area, Second Quarter-2024

Sex	Urban		Rural		Both Areas	
	Number	Percent	Number	Percent	Number	Percent
Male	35,280	35.4	50,551	39.4	85,831	37.6
Female	64,375	64.6	77,799	60.6	142,174	62.4
Both Sex	99,655	100.0	128,350	100.0	228,005	100.0

Table 2.4 Labour Force Participation Rate by Sex and Age group, Second Quarter- 2024

Age Group	Total	Sex		
		Male	Female	Both Sex
15-19	6,436	7.1	10.6	8.9
20-24	34,645	61.7	50.7	56.4
25-29	47,983	83.9	61.4	73.3
30-34	64,322	90.9	60.8	77.2
35-39	52,679	94.4	61.1	78.9
40-44	48,382	94.3	64.3	80.4
45-49	33,704	91.9	64.4	78.2
50-54	28,710	88.5	61.3	76.7
55-59	19,433	84.3	58.4	71.8
60-64	15,507	69.9	45.9	58.7
65+	17,120	37.5	26.4	31.9
Total	368,921	72.5	50.0	61.8

Table 2.5 Labour Force Participation rate by Sex and *Dzongkhag/Thromdes*, Second Quarter 2024

Dzongkhag/Thromde	Labour Force Population	Sex		
		Male	Female	Both Sex
Bumthang	8,145	63.5	52.6	58.2
Chhukha	21,067	71.1	40.8	57.1
Phuntsholing Thromde	10,456	77.8	40.6	58.2
Dagana	15,543	80.7	76.9	78.9
Haa	8,465	88.3	67.8	79.2
Lhuentse	6,653	74.3	59.9	67.4
Monggar	17,533	75.0	58.6	66.4
Paro	27,926	74.1	60.8	67.6
Pema Gatshel	13,974	77.7	76.0	76.8
Punakha	15,247	72.2	50.8	62.2
Samdrup Jongkhar	11,412	65.5	51.4	58.8
Samdrup Jongkhar Thromde	4,109	71.5	44.8	59.3
Samtse	26,445	76.0	32.9	54.5
Sarpang	19,025	68.3	57.9	63.4
Gelephu Thromde	5,800	72.3	44.0	57.9
Thimphu	9,334	71.1	32.2	52.7
Thimphu Thromde	60,503	69.6	36.1	53.2
Trashigang	20,691	71.8	58.6	65.4
Trashy Yangtse	8,198	75.3	63.5	69.4
Trongsa	12,829	77.4	49.4	67.1
Tsirang	14,912	79.1	78.9	79.0
Wangdue Phodrang	21,307	64.1	46.3	57.2
Zhemgang	9,352	83.2	66.8	75.4
Bhutan	368,921	72.5	50.0	61.8

Chapter 3

EMPLOYMENT

Employment: All those household members who are 15 years and above and are engaged in any activity to produce goods or provide services for pay or profit during a reference period. It comprises employed persons “at work” and “not at work”. Employed persons “not at work” are those persons who still maintained a job attachment during their absences, including those such as sick leave due to their illness or injury and periods of maternity or paternity leave during the reference period.

The term “for pay or profit” refers to work done as part of a transaction in exchange for remuneration in cash or in kind. The remuneration may be paid directly to the person performing the work or indirectly to a household or family member.

Employment Rate: The proportion of employed population to the total labour force.

Employment-to population ratio: Represents the percentage of employed persons relative to the working age population.

The overall employment rate in Bhutan for the second quarter, 2024 is 96.3%, with a higher rate among males (96.9%) than females (95.5%).



3.1 The employment-to-population ratio

The employment-to-population ratio (shown as EPR in this diagram) is a basic yardstick for understanding the overall demand for labour in an economy. It provides information on the ability of an economy to generate employment.

It is defined as the percentage of employed persons in the **working-age population**:

When the employment-to-population rate rises over time, it usually means there is increasing demand for workers within the economy. A low percentage means that a large share of the working-age population is unemployed or not attached to the labour force.

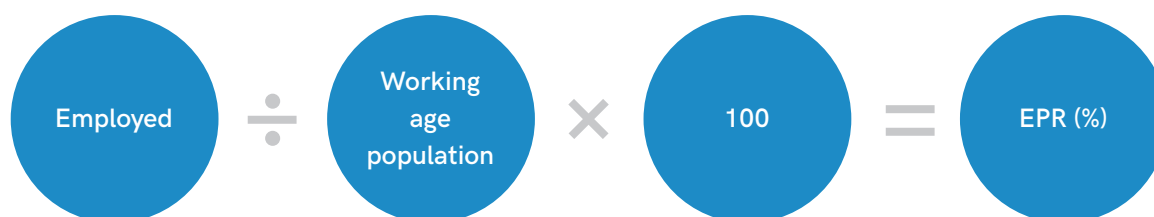


Table 3.1 Proportion of Employed Persons by Dzongkhag/Thromdes and Sex, Second Quarter-2024

Dzongkhag/Thromde	Total	Employment Rate		
		Male	Female	Both sex
Bumthang	7,899	97.5	96.3	97.0
Chhukha	20,658	98.2	97.9	98.1
Phuentshogling Thromde	9,772	96.2	88.8	93.5
Dagana	15,432	99.3	99.3	99.3
Haa	8,156	97.3	94.9	96.4
Lhuentse	6,388	94.6	97.9	96.0
Monggar	17,431	99.5	99.3	99.4
Paro	26,941	95.8	97.4	96.5
Pema Gatshel	13,781	100.0	97.2	98.6
Punakha	14,375	97.7	88.8	94.3
Samdrup Jongkhar	11,232	97.3	100.0	98.4
Samdrup Jongkhar Thromde	3,756	92.6	89.1	91.4
Samtse	25,216	98.4	88.2	95.4
Sarpang	17,553	90.3	94.9	92.3
Gelegphu Thromde	5,298	92.1	90.1	91.3
Thimphu	8,898	95.8	94.1	95.3
Thimphu Thromde	56,388	94.5	90.7	93.2
Trashigang	20,187	97.6	97.5	97.6
Trash Yangtse	8,115	100.0	97.8	99.0
Trongsa	12,779	100.0	98.6	99.6
Tsirang	14,712	97.4	100.0	98.7
Wangdue Phodrang	21,111	99.3	98.6	99.1
Zhemgang	9,338	100.0	99.6	99.9
Total	355,416	96.9	95.5	96.3

Table 3.2 Proportion of Employed Persons by Age Group and Sex, Second Quarter-2024

Age Group	Total	Employment Rate(%)		
		Male	Female	Both sex
15-64	338,296	96.74	95.22	96.16
18-64	337,361	96.73	95.22	96.15
15-19	5,030	90.3	70.3	78.1
20-24	28,148	79.9	83.0	81.2
25-29	44,367	93.8	90.4	92.5
30-34	63,295	98.9	97.5	98.4
35-39	52,292	99.3	99.2	99.3
40-44	47,943	99.0	99.3	99.1
45-49	33,571	99.6	99.6	99.6
50-54	28,710	100.0	100.0	100.0
55-59	19,433	100.0	100.0	100.0
60-64	15,507	100.0	100.0	100.0
65+	17,120	100.0	100.0	100.0
Bhutan	355,416	96.9	95.5	96.3

Table 3.3 Proportion of Employed Persons by Sector, Sex and Area, Second Quarter-2024

Sector	Total	Area		Sex		Total
		Urban	Rural	Male	Female	
Agriculture	146,403	4.4	60.7	34.7	51.8	41.2
Industry	47,921	17.6	11.3	16.1	9.2	13.5
Service	161,092	78.0	28.0	49.2	39.1	45.3
All Sectors	355,416	100.0	100.0	100.0	100.0	100.0

Table 3.4 Distribution of Employed Persons by Nature of Employment, Sex and Area, Second Quarter-2024

Nature of Employment	Total	Urban			Rural			Both Area		
		Male	Female	Both Sex	Male	Female	Both Sex	Male	Female	Both Sex
Employee (regular paid)	127,137	66.1	55.7	62.4	27.8	12.3	21.6	41.7	26.2	35.8
Employee (Casual paid)	23,411	8.2	2.7	6.3	10.1	1.6	6.8	9.4	1.9	6.6
Own-account worker (Non-agriculture)	52,404	20.6	27.4	23.0	9.1	12.3	10.4	13.3	17.1	14.7
Own-account worker(Agriculture)	66,078	1.3	3.7	2.2	27.0	27.7	27.3	17.7	20.0	18.6
Family worker(Non-agriculture)	11,096	3.1	6.6	4.4	1.8	3.5	2.5	2.3	4.5	3.1
Family worker(Agriculture)	74,690	0.6	3.8	1.7	24.0	42.3	31.3	15.5	29.9	21.0
Employer	317	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Apprenticeship/Internship	283	0.0	0.1	0.0	0.1	0.2	0.1	0.0	0.1	0.1
Total	355,416	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 3.5 Percentage Distribution of Employed Persons by Major Occupation and Sex, Second Quarter-2024

Major Occupation	Total	Area		Sex		Total
		Urban	Rural	Male	Female	
Managers	41,657	7.5	10.1	14.3	11.7	11.7
Professionals	29,472	5.5	9.1	7.0	8.3	8.3
Technicians and Associate Professionals	22,494	4.2	7.9	3.7	6.3	6.3
Clerical Support Workers	10,694	1.2	2.0	4.7	3.0	3.0
Services and Sales Workers	32,043	5.4	9.6	8.0	9.0	9.0
Skilled Agricultural, Forestry and Fishery Workers	143,951	59.9	33.9	51.2	40.5	40.5
Craft and Related Trades Workers	30,057	7.1	9.7	6.4	8.5	8.5
Plant and Machine Operators and Assemblers	24,806	5.3	11.2	0.2	7.0	7.0
Elementary Occupations	15,719	3.8	4.4	4.4	4.4	4.4
Armed Forces Occupations	4,523	0.3	2.1	0.0	1.3	1.3
Total	355,416	100.0	100.0	100.0	100.0	100.0

Table 3.6 Proportions of Employed Persons by Level of Education, Area and Sex, Second Quarter-2024

Level of Education	Total	Area		Sex		Total
		Urban	Rural	Male	Female	
None	114,680	14.4	41.7	27.4	40.1	32.3
Primary/Nursery	42,928	9.6	13.4	14.4	8.2	12.1
Lower Secondary	24,660	8.6	6.0	7.9	5.3	6.9
Middle Secondary	46,612	18.4	10.3	13.4	12.6	13.1
Higher Secondary	53,480	24.1	10.3	14.9	15.3	15.0
Certificate/Diploma	7,585	4.3	1.0	2.8	1.0	2.1
Bachelors Degree	28,677	13.9	5.0	8.7	7.0	8.1
Masters Degree & Above	8,421	3.9	1.6	2.8	1.6	2.4
Monastic Education	11,262	1.1	4.3	5.0	0.2	3.2
Non-Formal Education	17,111	1.8	6.4	2.5	8.6	4.8
Total	355,416	100.0	100.0	100.0	100.0	100.0

* This excludes those who are enrolled in TVET under the MoLHR

Table 3.7 Total Employed Persons by Major Economic Activity, Area and Sex, Second Quarter-2024

Major Economic Activity	Total	Area		Sex		Total
		Urban	Rural	Male	Female	
Agriculture, Forestry and Fishing	146,403	4.4	60.7	34.7	51.8	41.2
Mining and Quarrying	2,339	0.8	0.6	1.0	0.0	0.7
Manufacturing*	24,593	11.3	4.6	6.3	7.9	6.9
Electricity, Gas, Steam and Air Conditioning Supply	20,990	5.5	6.1	8.8	1.3	5.9
Water Supply; Sewerage, Waste Management and Remediation Activities	8,610	3.0	2.1	3.2	1.2	2.4
Construction	484	0.1	0.2	0.2	0.1	0.1
Wholesale & Retail Trade; Repair of Motor Vehicles and Motorcycles	34,074	18.6	4.8	8.0	12.2	9.6
Transportation and Storage	12,250	5.4	2.4	5.4	0.2	3.4
Accommodation and Food Service Activities	18,508	10.3	2.5	3.6	7.8	5.2
Information and Communication	3,218	2.4	0.1	1.0	0.8	0.9
Financial and Insurance Activities	3,970	2.7	0.3	1.2	1.0	1.1
Real Estate Activities	162	0.1	0.0	0.1	0.0	0.0
Professional, Scientific and Technical Activities	768	0.4	0.1	0.2	0.2	0.2
Administrative and Support Service Activities	6,663	3.4	1.1	2.6	0.6	1.9
Public Administration and Defense; Compulsory Social Security	32,478	17.5	4.7	11.9	4.6	9.1
Education	21,863	6.2	6.1	6.3	6.0	6.2
Human Health and Social Work Activities	8,185	4.4	1.2	2.6	1.8	2.3
Arts, Entertainment and Recreation	2,538	1.7	0.2	0.5	1.0	0.7
Other Service Activities	6,521	1.8	1.9	2.2	1.2	1.8
Activities of Households as Employers	33	0.0	0.0	0.0	0.0	0.0
Activities of Extraterritorial Organizations and Bodies	766	0.1	0.3	0.2	0.3	0.2
Total	355,415	100.0	100.0	100.0	100.0	100.0

* This includes weaving of home-based textiles, cane and wood products

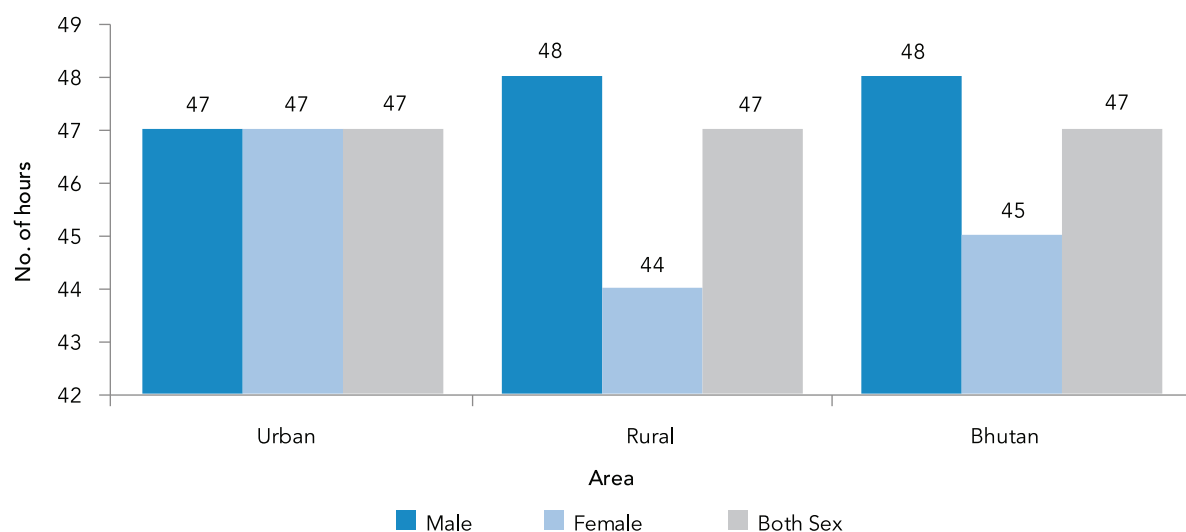


Figure 3.1 Mean Hours Worked in a Week by Area and Sex, Second Quarter-2024

Table 3.8 Employment to Population Ratio by Sex and Area, Second Quarter-2024

Area	Employed Person			Working Age Population			Employment to Population Ratio (%)		
	Male	Female	Both Sex	Male	Female	Both Sex	Male	Female	Both Sex
Urban	79,735	43,490	123,225	118,701	111,664	230,365	67.2	38.9	53.5
Rural	140,030	92,160	232,191	193,950	172,610	366,560	72.2	53.4	63.3
Bhutan	219,765	135,650	355,416	312,652	284,274	596,926	70.3	47.7	59.5

Table 3.9 Percentage Distribution of Employed Person by Sex and Type of Enterprise, Second Quarter-2024

Type of Enterprise	Total	Sex		Both Sex	% contribution of females to the total employment
		Male	Female		
Government Agency	51,363	16.4	11.3	14.5	29.8
Armed Forces	9,880	4.1	0.6	2.8	8.1
Agriculture Farming	144,646	34.1	51.3	40.7	48.1
Public/Government Company	26,500	9.4	4.3	7.5	21.8
Private Limited Company	11,494	4.0	2.0	3.2	23.4
Private Business	109,327	31.3	29.9	30.8	37.1
A Household(s) as a Domestic Worker	33	0.0	0.0	0.0	100.0
NGO/INGO/CSO	2,173	0.6	0.6	0.6	37.3
Total	355,416	100	100	100	38.2

Chapter 4

THE CONCEPT OF UNEMPLOYMENT

The three criteria used to define unemployment

1. **Without Work:** A person of working age who did not work at all during the reference period (not even for one hour), nor was temporarily absent from work.
2. **Seeking Work:** The person is actively seeking for work in past four weeks.
3. **Currently available for work:** The person is available for employment in the next two weeks.



Youth Unemployment: Those unemployed persons aged 15-24 years.

Unemployment-to-population ratio: The proportion of unemployed persons relative to the total working-age population.

Unemployment rate: The proportion of unemployed persons in the labor force, also known as the economically active population.

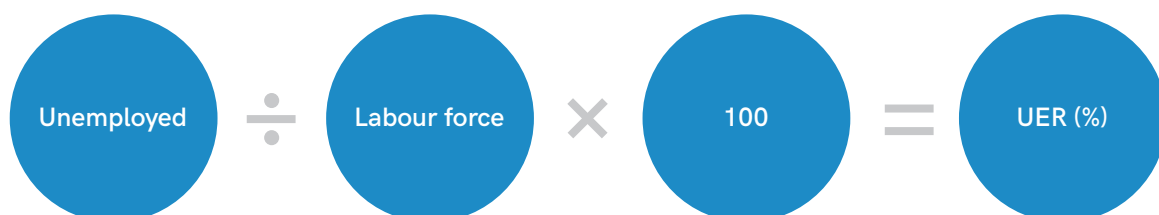
Youth unemployment rate: The percentage of unemployed individuals in the age group 15-24 years relative to the labor force (also known as the economically active population) in the same age group.

Unemployment rate

The unemployment rate (UR in this diagram) reflects the ability of an economy to generate employment for those persons who want to work but are not doing so, even though they are available for employment and actively seeking work. It is an important indicator of labour

market performance, and a key measure of labour underutilization.

For the second quarter of the year 2024, the estimated unemployment rate is 3.7%. This rate is higher for females compared to males. Specifically, the unemployment rate for females



is 4.5%, which is slightly higher compared to their male counterpart where the rate is at 3.1%. Likewise, the youth unemployment rate

is estimated at 19.2%. Notably, the youth unemployment rate for males (18.9%) is lower than that of females (19.6%).

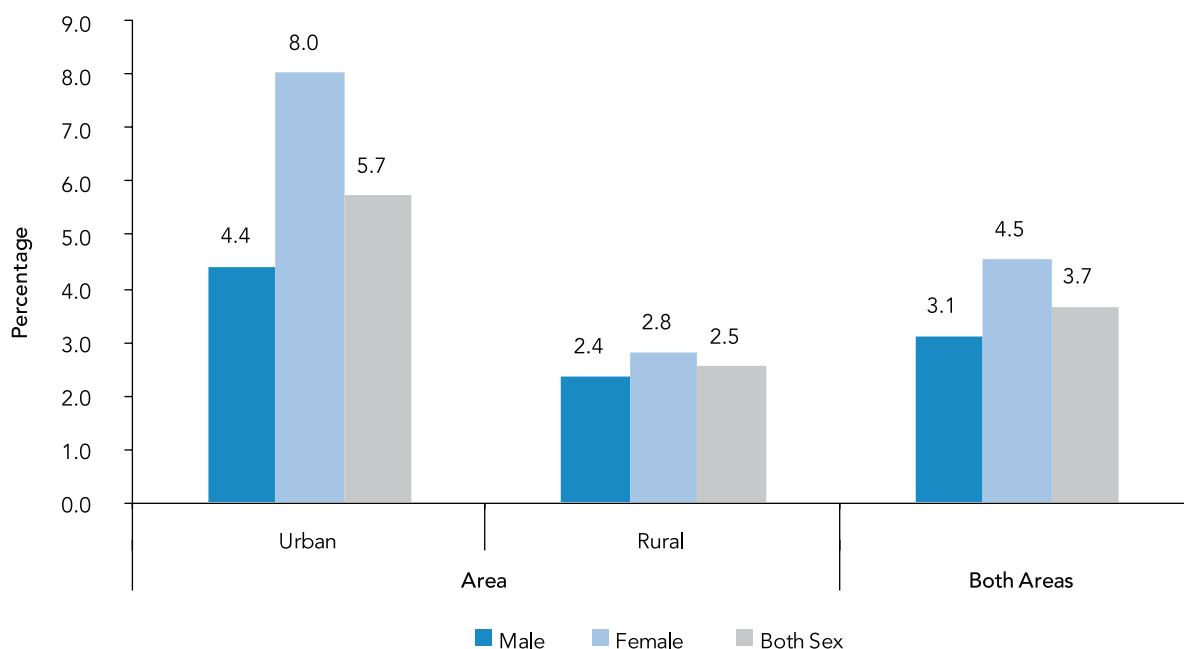


Figure 4.1 Unemployment Rate by Sex and Area, Second Quarter-2024



Table 4.1 Unemployment Rate by Sex and Dzongkhag/Thromde, 2024

Dzongkhag/Thromde	Total	Unemployment Rate		
		Male	Female	Both sex
Bumthang	246	2.5	3.7	3.0
Chhukha	409	1.8	2.1	1.9
Phuentshogling Thromde	684	3.8	11.2	6.5
Dagana	110	0.7	0.8	0.7
Haa	308	2.7	5.1	3.6
Lhuentse	264	5.4	2.1	4.0
Monggar	101	0.5	0.7	0.6
Paro	985	4.2	2.7	3.5
Pema Gatshel	193	0.0	2.8	1.4
Punakha	872	2.3	11.2	5.7
Samdrup Jongkhar	180	2.7	0.0	1.6
Samdrup Jongkhar Thromde	353	7.4	10.9	8.6
Samtse	1,229	1.6	11.8	4.7
Sarpang	1,472	9.7	5.1	7.7
Gelephu Thromde	502	7.9	9.9	8.7
Thimphu	437	4.2	5.9	4.7
Thimphu Thromde	4,114	5.5	9.3	6.8
Trashigang	504	2.4	2.5	2.4
Trashi Yangtse	82	0.0	2.2	1.0
Trongsa	50	0.0	1.5	0.4
Tsirang	200	2.6	0.0	1.3
Wangdue Phodrang	195	0.7	1.4	0.9
Zhemgang	14	0.0	0.4	0.2
Total	13,505	3.1	4.5	3.7

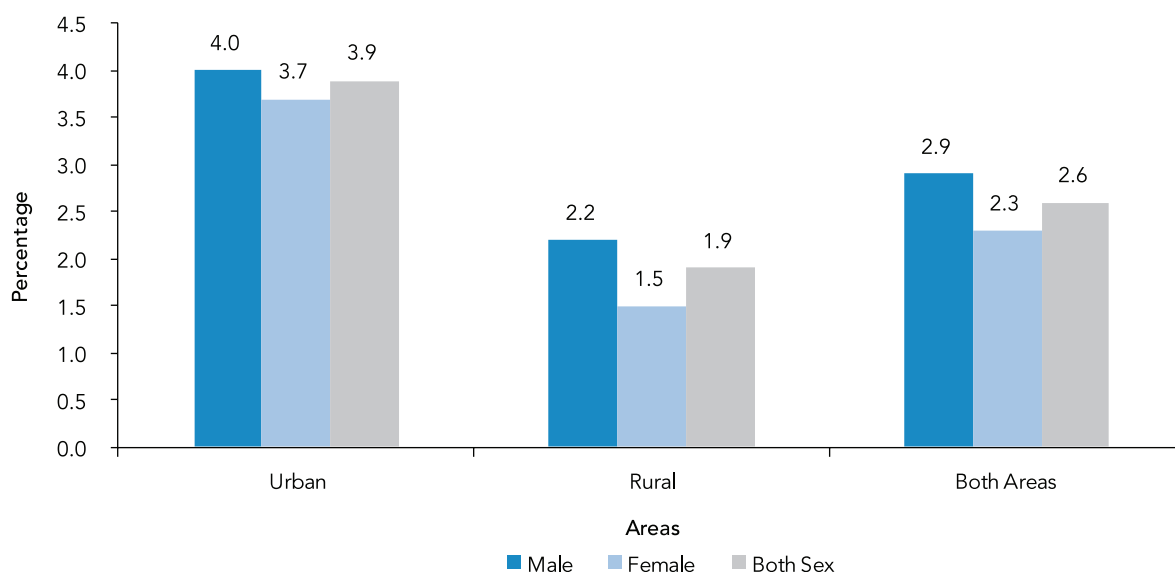


Figure 4.2 -Unemployment-to-Population Ratio by Sex and Area, Second Quarter-2024

Table 4.2 Unemployment Rate by Level of Education and Sex, Second Quarter-2024

Level of education	Total	Sex		Both Sex
		Male	Female	
None	241	0.2	0.2	0.2
Primary	335	0.6	1.2	0.8
Lower Secondary	1,630	4.6	9.8	6.2
Middle Secondary	2,340	2.3	8.8	4.8
Higher Secondary	6,754	9.8	13.4	11.2
Certificate/Diploma	169	2.7	0.0	2.2
Bachelor's Degree	1,901	6.7	5.2	6.2
Masters Degree	104	1.7	0.0	1.2
Non-Formal Education	30	0.0	0.3	0.2
Total	13,505	3.1	4.5	3.7

Table 4.3 Youth Unemployment Rate by Sex and Area, Second Quarter-2024

Sex	Total	Urban	Rural	Both Areas
Male	4,187	23.8	15	18.9
Female	3,716	19.8	19.4	19.6
Both Sex	7,903	21.7	16.7	19.2

ANNEXURES

SAMPLING DESIGN & ESTIMATION PROCEDURE

Coverage of the Survey

The QLFS 2024 has been designed to cover the entire country. The country is divided into a number of Enumeration Areas (EAs) in both urban and rural areas. The urban areas are classified as defined by the erstwhile Department of Urban Development and Engineering Services (DUDES) under the then Ministry of Works and Human Settlement (MoWHS), and as used in the 2017 PHCB. The rural areas are *gewogs* and *chiwogs* from all twenty *dzongkhags*. The smaller *chiwogs* are considered as one EA, while the bigger *chiwogs* were divided into several EAs.

Sampling Frame

The sampling frame was developed from the 2017 PHCB and updated in 2023 with merging of undersized EAs and the splitting of oversized EAs across the country. A fresh listing of households was carried out while splitting the EAs.

Sample Design

The sample for the second quarter of the year 2024 is designed to provide estimates of the labour force-related indicators at the national and domain levels. In addition to 20 domains of interest, which are *dzongkhags*, the four *thromdes* are also considered as domains. Every *dzongkhag* is further stratified into urban and rural areas, resulting in 44 strata for the survey. However, Gasa is treated as the hard-to-reach Dzongkhag in this quarter.

A stratified two-stage sampling design was adopted. The urban and rural areas of each Dzongkhag served as first-level stratification.

Within each first-level strata, all Primary Sampling Units (PSUs) were first ordered geographically. From the ordered list, the PSUs were further stratified in such a way that the total number of households within second-level strata are approximately equal. The number of secondary-level strata per primary strata were based on the sample size allocated. In each secondary-level stratum, Probability Proportional to number of households and with Replacement (PPSWR) was used to select four PSUs. All PSUs in each stratum were randomly assigned numbers 1-4. All PSUs with the same assigned number were then grouped to form replicates. These replicates constitute the sample areas to be covered for each quarter.

In the second stage of sampling, all the regular households in the sampled PSUs were listed, and the required number of households in each PSU was selected based on the Circular Systematic Sampling (CSS).

Sample Size Determination

The overall sample size was determined based on various precision targets, i.e., at 1%, 3%, and 5% margin of error values, for six major labour force-related indicators at both national and domain levels. It was decided that the estimation of the required sample size would be based on the generation of reliable estimates of Employment/Unemployment Rates at the domain levels and Youth Unemployment Rates in the annual sample. The sample size was determined using the following formula:

Taking into account the estimates from LFS 2022, the computation was conducted.

n = is the number of households required in the sample

p = is the estimated proportion of the population that possesses a certain characteristic

$deff$ = design of effect

SE = standard error of the estimate

R = response rate, assumed to be 90%

Utilizing the above-mentioned formula, the total sample size for the pilot QLFS was adjusted at 3,000 households, resulting in an annual sample of 12,000 households to achieve the survey objectives.

Sample Allocation

Considering equal importance to produce estimates at national and domain levels, a compromise allocation scheme was used for sample allocation. The sample allocation for each domain followed as per the given formula:

$$n_h = n * \frac{\sqrt{\theta W_h^2 + (1 - \theta)/L^2}}{\sum_{h=1}^L \sqrt{\theta W_h^2 + (1 - \theta)/L^2}}$$

Where:

n = overall sample size

W_h = relative importance given to proportional allocation,

L = total number of strata

$W_h = N_h/N$

N_h = total number of units in stratum h

N = population size

The allocated sample size for each domain was then distributed proportionately to the number of households in both urban and rural areas, except for *Thromdes*.

Dzongkhag/Thromde	Rural		Urban		Both Areas	
	No. of EA	No. of HHs	No. of EA	No. of HHs	No. of EA	No. of HHs
Bumthang	4	64	3	36	7	100
Chhukha	7	112	2	24	9	136
Phuentshogling Thromde	-	-	10	120	10	120
Dagana	6	96	2	24	8	120
Haa	4	64	2	24	6	88
Lhuentse	5	80	1	12	6	92
Monggar	6	96	3	36	9	132
Paro	8	128	3	36	11	164
Pema Gatshel	5	80	3	36	8	116
Punakha	6	96	2	24	8	120
Samdrup Jongkhar	6	96	1	12	7	108
S/Jongkhar Thromde	-	-	7	84	7	84
Samtse	10	160	3	36	13	196
Sarpang	7	112	1	12	8	124
Gelephu Thromde	-	-	8	96	8	96
Thimphu	6	96	1	12	7	108
Thimphu Thromde	-	-	28	336	28	336
Trashigang	5	80	2	24	7	104
Trashigang	8	128	2	24	10	152
Trongsa	4	64	2	24	6	88
Tsirang	6	96	1	12	7	108
Wangdue Phodrang	6	96	3	36	9	132
Zhemgang	5	80	3	36	8	116
Total	114	1,824	93	1,116	207	2,940

Sampling Weights

The sampling weights were made up of three components namely:

Base weight (w_1);

Nonresponse weight (w_2); and

Post-stratification Weight (w_3).

The final weight was computed as

Base weight is the inverse of the selection probabilities for a stratified two-stage sampling. In the 1st stage sampling, the selection probability for i^{th} PSU in a stratum was computed as follows:

$$P_{psu_i} = \frac{M_i}{\sum_{i=1}^N M_i} * n \quad (1)$$

Where,

M_i = number of households in i^{th} PSU

n = total number of PSUs selected in the stratum

$\sum_{i=1}^N M_i$ = total number of households in the stratum

In the 2nd stage sampling, the selection probability for j^{th} household in the i^{th} PSU in a stratum, was computed as follows:

$$P_{psu_{ij}} = \frac{n_{ij}}{m_{ij}} \quad (2)$$

Where,

n_{ij} = total number of households interviewed in the i^{th} PSU

m_{ij} = total number of households during fresh listing in the i^{th} PSU

Then base weight for j^{th} household in the i^{th} PSU in a stratum is computed as follows:

$$w_1 = \frac{1}{P_{psu_i} * P_{psu_{ij}}}$$

The non-response weight is computed at the stratum level, i.e., in urban and rural areas

within each domain. It is the inverse of stratum response rate as follows:

$$w_2 = \frac{1}{\text{weighted response rate in a stratum } (R)}$$

Where,

$$R = \frac{\text{weighted number of completed interviews in the stratum}}{\text{weighted total number of households in the stratum}}$$

To further improve the precision of the estimates and account for changes in the population structure, a post-stratification adjustment was additionally employed, utilizing population projections by Dzongkhag, ten-year age group, and sex. To achieve this, the post-stratification adjustment weight for each post-stratification cell was calculated as

$$w_3 = N_{[g]}^{2024} / \hat{N}_{[g]}^{2024}$$

Where $N_{[g]}^{2024}$ is the projected population for adjustment cell $[g]$. In here an adjustment cell refers to 10-year age-group by sex for each Dzongkhag. The age-groups are <15, 15-24, 25-34, 35-44, 45-54, 55-64, 65+. Further $\hat{N}_{[g]}^{2024}$ is simply the sum of assigned weights (after adjusting for non-response) of all individuals belonging to adjustment cell $[g]$. Therefore, the final survey weight is then defined as

$$W_f = w_1 * w_2 * w_3$$

Estimation

Given the final weight attached to a sample unit, the population total is estimated as

$$\hat{Y} = \sum_{i \in S} w_{fi} * y_i, \quad i \in S \quad \text{is all sampled units}$$

The population mean is estimated as

$$\bar{y} = \frac{\sum_{i \in S} w_{fi} * y_i}{\sum_{i \in S} w_{fi}}$$

The population proportion is estimated as

$$\hat{p} = \frac{\sum_{i \in S} w_{fi} * y_i}{\sum_{i \in S} w_{fi}}$$

$y_i = 1$ if unit i possesses attribute, 0 otherwise

INDICATORS: DEFINITION, NUMERATORS AND DENOMINATOR

Sl No	Indicators	Definition	Numerator	Denominator
1	Working-age Population	Persons aged 15 years and above		
2	Economically Active Population (labour force)	Working-age population who were/are employed or unemployed during the reference period of the survey are referred to as Economically active population or Labour Force.		
3	Economically Inactive Population (out of labour force)	Working-age population who are/were neither employed nor unemployed during the reference period		
4	Labour Force Participation Rate (LFPR)	LFPR is defined as proportion of economically active persons (labour force) to the working age population	Economically active/ labour force	Working-age population
5	Economically Inactivity Rate	It is defined as proportion of economically inactive persons (out of labour force) to the working-age population	Economically inactive population	Working-age population
6	Employment Rate	It is defined as proportion of employed persons to the economically active population	Employed persons	Economically active population
7	Employment-to-Population Ratio	It is defined as the proportion of employed persons to the working-age population	Employed persons	Working-age population
8	Unemployment Rate	Unemployment rate is defined as the proportion of unemployed persons to the economically active population	Unemployed persons	Economically active Population
9	Unemployment-to-Population Ratio	It is defined as the proportion of unemployed persons to the working-age population	Unemployed persons	Working-age population
10	Youth Unemployment Rate	Youth unemployment rate is defined as the percentage of unemployed persons in the age group 15-24 years to the economically active population in the same age group	Unemployed persons (aged 15-24 years)	Economically active youth population
11	Share of Youth Unemployment	It is expressed as percentage of youth unemployed persons to all unemployed persons	Youth Unemployed persons	Total Unemployed persons

RELIABILITY OF THE ESTIMATES

Since estimates are based on sample data, they differ from figures that would have been obtained from complete enumeration of the population using the same instrument. Results are subject to both sampling and non-sampling errors. Non-sampling errors include biases from inaccurate reporting, processing, and tabulation, etc., as well as errors from non-responses and incomplete reporting. These types of errors cannot be measured readily. However, to some extent, non-sampling errors can be minimized through the procedures used for data collection, editing, quality control, and non-response adjustment. The variances of the survey estimates are used to measure sampling errors.

(i) Variance estimation

Most commonly used methods for estimating variances of survey estimates from complex surveys such as the QLFS are the Taylor-series Linearization, Jack-knife Replication, Balanced Repeated Replication (BRR), and Bootstrap methods. The Taylor-series Linearization method has been used for variance estimation in the QLFS because of its simplicity.

(ii) Coefficient of variation

It is more useful in many situations to assess the size of standard error relative to magnitude of the characteristic being measured (the standard error is defined as the square root of the variance). The coefficient of variation provides such a measure. It is the ratio of the standard error of the survey estimate to the value of the estimate itself expressed as a percentage. It is very useful in comparing the precision of several different survey estimates, where their sizes or scales differ from one another.

(iii) P-value of an estimate of change

The p-value corresponding to an estimate of change is the probability of observing a value

larger than the particular observed value under the hypothesis that there is no real change. If the p-value $< 0,01$, the difference is highly significant; if p-value is between 0,01 and 0,05, the difference is significant; and if p-value $> 0,05$, the difference is not significant.

The exact differences, or sampling error, vary depending on the particular sample selected, and this variability is measured by the standard error of the estimate. There is approximately a 95 percent chance, or level of confidence, that an estimate based on a sample will differ from the 'true' population value by no more than 1.96 standard errors due to sampling error. Analyses related to the Labour Force Survey are generally conducted at this 95 percent confidence level. For example, the confidence interval for the quarterly unemployment rate is calculated as follows:

When the estimated unemployment rate is 3.7 and standard error of unemployment rate is 0.43 then at 95% confidence interval, the estimated value (of the unemployment rate) $\pm$ (standard error) $\times$ (1.96)

$$3.7 \pm (0.43) \times (1.96) \\ (3.7 \pm 0.8428)$$

This means, the 95 percent confidence interval on the quarterly unemployment rate could range from (3.36 to 4.84). This implies that there is about a 95 percent chance that the 'true' unemployment rate lies within this interval. This range includes all the values ranging from 3.36 to 4.84.

Therefore, for the quarterly labour force survey report, a separate table is given including approximate standard errors for some selected indicators, so that users could understand this statistical scenario clearly.

Indicator	Total	Std. Error	95% Confidence Interval	
			Lower Limit	Upper Limit
Labour Force participation Rate	61.8	0.83	60.1	63.4
Inactivity Rate	38.2	0.83	36.5	39.8
Employment Rate	96.3	0.43	95.4	97.1
Unemployment Rate	3.7	0.43	2.9	4.6
Youth Unemployment Rate	19.2	2.7	14.4	25.2



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