

Week 8

The logo for Stamford Online, featuring a stylized orange 'S' with a blue dot in the center.

stamfordonline
EDUCATION BEYOND BORDERS



Time Series Analysis

Learning outcomes:

- Able to find the seasonal factors and seasonally adjusted values.
- Able to find likely future values of the trend and be able to forecast.



Example:

year	Season	Real data	Sum-4s	sum-2s	Trend	T-Y	T/Y
1	spring	79					
	summer	48					
			302				
	autumn	68		622	77.8	9.8	1.143
			320				
	winter	107		658	82.3	-24.8	0.769
		338					
2	spring	97		693	86.6	-10.4	0.893
			355				
	summer	66		737	92.1	26.1	1.396
			382				
	autumn	85		780	97.5	12.5	1.147
			398				
	winter	134		821	102.6	-31.4	0.766
		423					
3	spring	113		861	107.6	-5.4	0.952
			438				
	summer	91		890	111.3	20.3	1.223
			452				
	autumn	100					
	winter	148					

Additive Model

Year	spring	summer	autumn	winter
1			9.75	-24.75
2	-10.4	26.1	12.5	-31.4
3	-5.4	20.3		
Sum	-15.8	46.4	22.25	-56.15
average	-7.9	23.2	11.125	-28.075
Adj	-0.4125	-0.4125	-0.4125	-0.4125
Seasonal factor	-7.4875	23.6125	11.5375	-27.6625

Multiplicative Model

Year	spring	summer	autumn	winter
1			1.143	0.769
2	0.893	1.396	1.147	0.766
3	0.952	1.223		
Sum	1.845	2.619	2.29	1.535
average	0.923	1.310	1.145	0.768
Adj	0.965	0.965	0.965	0.965
Seasonal factor	0.890	1.264	1.105	0.741