

```
SAVE OUTFILE='/Users/macbook/Documents/Viết báo/2026/Khuong 2/Data.sav'
/COMPRESSED.
DATASET ACTIVATE DataSet0.

SAVE OUTFILE='/Users/macbook/Documents/Viết báo/2026/Khuong 2/Data.sav'
/COMPRESSED.
RELIABILITY
/VARIABLES=Pre_Q1 pre_Q2 pre_Q3 pre_Q4 pre_Q5 pre_Q6 pre_Q7 pre_Q8 pre_Q9
pre_Q10 pre_Q11 pre_Q12
pre_Q13 pre_Q14 pre_Q15 pre_Q16 pre_Q17 pre_Q18 post_Q1 post_Q2 post_Q3
post_Q4 post_Q5 post_Q6
post_Q7 post_Q8 post_Q9 post_Q10 post_Q11 post_Q12 post_Q13 post_Q14
post_Q15 post_Q16 post_Q17
post_Q18
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA.
```

Reliability

Notes

Output Created		04-NOV-2025 10:02:27
Comments		
Input	Data	/Users/macbook/Document s/Viết báo/2026/Khuong 2/Data.sav
	Active Dataset	DataSet0
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	421
	Matrix Input	
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the procedure.

Syntax		RELIABILITY /VARIABLES=Pre_Q1 pre_Q2 pre_Q3 pre_Q4 pre_Q5 pre_Q6 pre_Q7 pre_Q8 pre_Q9 pre_Q10 pre_Q11 pre_Q12 pre_Q13 pre_Q14 pre_Q15 pre_Q16 pre_Q17 pre_Q18 post_Q1 post_Q2 post_Q3 post_Q4 post_Q5 post_Q6 post_Q7 post_Q8 post_Q9 post_Q10 post_Q11 post_Q12 post_Q13 post_Q14 post_Q15 post_Q16 post_Q17 post_Q18 /SCALE('ALL VARIABLES') ALL /MODEL=ALPHA.
Resources	Processor Time	00:00:00.01
	Elapsed Time	00:00:00.00

[DataSet0] /Users/macbook/Documents/Viết báo/2026/Khuong 2/Data.sav

Scale: ALL VARIABLES

Case Processing Summary			
		N	%
Cases	Valid	421	100.0
	Excluded ^a	0	.0
	Total	421	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.912	36

FREQUENCIES VARIABLES=ID Region Gender Nationality Group
/NTILES=4
/ORDER=ANALYSIS.

Frequencies

Notes

Output Created		04-NOV-2025 10:03:26
Comments		
Input	Data	/Users/macbook/Document s/Viết báo/2026/Khương 2/Data.sav
	Active Dataset	DataSet0
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	421
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data.
Syntax		FREQUENCIES VARIABLES=ID Region Gender Nationality Group /NTILES=4 /ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.07
	Elapsed Time	00:00:00.00

Statistics

		ID	Region	Gender	Nationality	Group
N	Valid	421	421	421	421	421
	Missing	0	0	0	0	0

Percentiles	25	105.5000	1.0000	1.0000	2.0000	1.0000
	50	211.0000	2.0000	2.0000	2.0000	2.0000
	75	316.5000	3.0000	2.0000	2.0000	2.0000

Frequency Table

		ID			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	1	.2	.2	.2
	2.00	1	.2	.2	.5
	3.00	1	.2	.2	.7
	4.00	1	.2	.2	1.0
	5.00	1	.2	.2	1.2
	6.00	1	.2	.2	1.4
	7.00	1	.2	.2	1.7
	8.00	1	.2	.2	1.9
	9.00	1	.2	.2	2.1
	10.00	1	.2	.2	2.4
	11.00	1	.2	.2	2.6
	12.00	1	.2	.2	2.9
	13.00	1	.2	.2	3.1
	14.00	1	.2	.2	3.3
	15.00	1	.2	.2	3.6
	16.00	1	.2	.2	3.8
	17.00	1	.2	.2	4.0
	18.00	1	.2	.2	4.3
	19.00	1	.2	.2	4.5
	20.00	1	.2	.2	4.8
	21.00	1	.2	.2	5.0
	22.00	1	.2	.2	5.2
	23.00	1	.2	.2	5.5
	24.00	1	.2	.2	5.7
	25.00	1	.2	.2	5.9
	26.00	1	.2	.2	6.2
	27.00	1	.2	.2	6.4
	28.00	1	.2	.2	6.7
	29.00	1	.2	.2	6.9
	30.00	1	.2	.2	7.1
	31.00	1	.2	.2	7.4

	32.00	1	.2	.2	7.6
	33.00	1	.2	.2	7.8
	34.00	1	.2	.2	8.1
	35.00	1	.2	.2	8.3
	36.00	1	.2	.2	8.6
	37.00	1	.2	.2	8.8
	38.00	1	.2	.2	9.0
	39.00	1	.2	.2	9.3
	40.00	1	.2	.2	9.5
	41.00	1	.2	.2	9.7
	42.00	1	.2	.2	10.0
	43.00	1	.2	.2	10.2
	44.00	1	.2	.2	10.5
	45.00	1	.2	.2	10.7
	46.00	1	.2	.2	10.9
	47.00	1	.2	.2	11.2
	48.00	1	.2	.2	11.4
	49.00	1	.2	.2	11.6
	50.00	1	.2	.2	11.9
	51.00	1	.2	.2	12.1
	52.00	1	.2	.2	12.4
	53.00	1	.2	.2	12.6
	54.00	1	.2	.2	12.8
	55.00	1	.2	.2	13.1
	56.00	1	.2	.2	13.3
	57.00	1	.2	.2	13.5
	58.00	1	.2	.2	13.8
	59.00	1	.2	.2	14.0
	60.00	1	.2	.2	14.3
	61.00	1	.2	.2	14.5
	62.00	1	.2	.2	14.7
	63.00	1	.2	.2	15.0
	64.00	1	.2	.2	15.2
	65.00	1	.2	.2	15.4
	66.00	1	.2	.2	15.7
	67.00	1	.2	.2	15.9
	68.00	1	.2	.2	16.2
	69.00	1	.2	.2	16.4
	70.00	1	.2	.2	16.6
	71.00	1	.2	.2	16.9
	72.00	1	.2	.2	17.1
	73.00	1	.2	.2	17.3
	74.00	1	.2	.2	17.6
	75.00	1	.2	.2	17.8
	76.00	1	.2	.2	18.1
	77.00	1	.2	.2	18.3

	78.00	1	.2	.2	18.5
	79.00	1	.2	.2	18.8
	80.00	1	.2	.2	19.0
	81.00	1	.2	.2	19.2
	82.00	1	.2	.2	19.5
	83.00	1	.2	.2	19.7
	84.00	1	.2	.2	20.0
	85.00	1	.2	.2	20.2
	86.00	1	.2	.2	20.4
	87.00	1	.2	.2	20.7
	88.00	1	.2	.2	20.9
	89.00	1	.2	.2	21.1
	90.00	1	.2	.2	21.4
	91.00	1	.2	.2	21.6
	92.00	1	.2	.2	21.9
	93.00	1	.2	.2	22.1
	94.00	1	.2	.2	22.3
	95.00	1	.2	.2	22.6
	96.00	1	.2	.2	22.8
	97.00	1	.2	.2	23.0
	98.00	1	.2	.2	23.3
	99.00	1	.2	.2	23.5
	100.00	1	.2	.2	23.8
	101.00	1	.2	.2	24.0
	102.00	1	.2	.2	24.2
	103.00	1	.2	.2	24.5
	104.00	1	.2	.2	24.7
	105.00	1	.2	.2	24.9
	106.00	1	.2	.2	25.2
	107.00	1	.2	.2	25.4
	108.00	1	.2	.2	25.7
	109.00	1	.2	.2	25.9
	110.00	1	.2	.2	26.1
	111.00	1	.2	.2	26.4
	112.00	1	.2	.2	26.6
	113.00	1	.2	.2	26.8
	114.00	1	.2	.2	27.1
	115.00	1	.2	.2	27.3
	116.00	1	.2	.2	27.6
	117.00	1	.2	.2	27.8
	118.00	1	.2	.2	28.0
	119.00	1	.2	.2	28.3
	120.00	1	.2	.2	28.5
	121.00	1	.2	.2	28.7
	122.00	1	.2	.2	29.0
	123.00	1	.2	.2	29.2

	124.00	1	.2	.2	29.5
	125.00	1	.2	.2	29.7
	126.00	1	.2	.2	29.9
	127.00	1	.2	.2	30.2
	128.00	1	.2	.2	30.4
	129.00	1	.2	.2	30.6
	130.00	1	.2	.2	30.9
	131.00	1	.2	.2	31.1
	132.00	1	.2	.2	31.4
	133.00	1	.2	.2	31.6
	134.00	1	.2	.2	31.8
	135.00	1	.2	.2	32.1
	136.00	1	.2	.2	32.3
	137.00	1	.2	.2	32.5
	138.00	1	.2	.2	32.8
	139.00	1	.2	.2	33.0
	140.00	1	.2	.2	33.3
	141.00	1	.2	.2	33.5
	142.00	1	.2	.2	33.7
	143.00	1	.2	.2	34.0
	144.00	1	.2	.2	34.2
	145.00	1	.2	.2	34.4
	146.00	1	.2	.2	34.7
	147.00	1	.2	.2	34.9
	148.00	1	.2	.2	35.2
	149.00	1	.2	.2	35.4
	150.00	1	.2	.2	35.6
	151.00	1	.2	.2	35.9
	152.00	1	.2	.2	36.1
	153.00	1	.2	.2	36.3
	154.00	1	.2	.2	36.6
	155.00	1	.2	.2	36.8
	156.00	1	.2	.2	37.1
	157.00	1	.2	.2	37.3
	158.00	1	.2	.2	37.5
	159.00	1	.2	.2	37.8
	160.00	1	.2	.2	38.0
	161.00	1	.2	.2	38.2
	162.00	1	.2	.2	38.5
	163.00	1	.2	.2	38.7
	164.00	1	.2	.2	39.0
	165.00	1	.2	.2	39.2
	166.00	1	.2	.2	39.4
	167.00	1	.2	.2	39.7
	168.00	1	.2	.2	39.9
	169.00	1	.2	.2	40.1

	170.00	1	.2	.2	40.4
	171.00	1	.2	.2	40.6
	172.00	1	.2	.2	40.9
	173.00	1	.2	.2	41.1
	174.00	1	.2	.2	41.3
	175.00	1	.2	.2	41.6
	176.00	1	.2	.2	41.8
	177.00	1	.2	.2	42.0
	178.00	1	.2	.2	42.3
	179.00	1	.2	.2	42.5
	180.00	1	.2	.2	42.8
	181.00	1	.2	.2	43.0
	182.00	1	.2	.2	43.2
	183.00	1	.2	.2	43.5
	184.00	1	.2	.2	43.7
	185.00	1	.2	.2	43.9
	186.00	1	.2	.2	44.2
	187.00	1	.2	.2	44.4
	188.00	1	.2	.2	44.7
	189.00	1	.2	.2	44.9
	190.00	1	.2	.2	45.1
	191.00	1	.2	.2	45.4
	192.00	1	.2	.2	45.6
	193.00	1	.2	.2	45.8
	194.00	1	.2	.2	46.1
	195.00	1	.2	.2	46.3
	196.00	1	.2	.2	46.6
	197.00	1	.2	.2	46.8
	198.00	1	.2	.2	47.0
	199.00	1	.2	.2	47.3
	200.00	1	.2	.2	47.5
	201.00	1	.2	.2	47.7
	202.00	1	.2	.2	48.0
	203.00	1	.2	.2	48.2
	204.00	1	.2	.2	48.5
	205.00	1	.2	.2	48.7
	206.00	1	.2	.2	48.9
	207.00	1	.2	.2	49.2
	208.00	1	.2	.2	49.4
	209.00	1	.2	.2	49.6
	210.00	1	.2	.2	49.9
	211.00	1	.2	.2	50.1
	212.00	1	.2	.2	50.4
	213.00	1	.2	.2	50.6
	214.00	1	.2	.2	50.8
	215.00	1	.2	.2	51.1

	216.00	1	.2	.2	51.3
	217.00	1	.2	.2	51.5
	218.00	1	.2	.2	51.8
	219.00	1	.2	.2	52.0
	220.00	1	.2	.2	52.3
	221.00	1	.2	.2	52.5
	222.00	1	.2	.2	52.7
	223.00	1	.2	.2	53.0
	224.00	1	.2	.2	53.2
	225.00	1	.2	.2	53.4
	226.00	1	.2	.2	53.7
	227.00	1	.2	.2	53.9
	228.00	1	.2	.2	54.2
	229.00	1	.2	.2	54.4
	230.00	1	.2	.2	54.6
	231.00	1	.2	.2	54.9
	232.00	1	.2	.2	55.1
	233.00	1	.2	.2	55.3
	234.00	1	.2	.2	55.6
	235.00	1	.2	.2	55.8
	236.00	1	.2	.2	56.1
	237.00	1	.2	.2	56.3
	238.00	1	.2	.2	56.5
	239.00	1	.2	.2	56.8
	240.00	1	.2	.2	57.0
	241.00	1	.2	.2	57.2
	242.00	1	.2	.2	57.5
	243.00	1	.2	.2	57.7
	244.00	1	.2	.2	58.0
	245.00	1	.2	.2	58.2
	246.00	1	.2	.2	58.4
	247.00	1	.2	.2	58.7
	248.00	1	.2	.2	58.9
	249.00	1	.2	.2	59.1
	250.00	1	.2	.2	59.4
	251.00	1	.2	.2	59.6
	252.00	1	.2	.2	59.9
	253.00	1	.2	.2	60.1
	254.00	1	.2	.2	60.3
	255.00	1	.2	.2	60.6
	256.00	1	.2	.2	60.8
	257.00	1	.2	.2	61.0
	258.00	1	.2	.2	61.3
	259.00	1	.2	.2	61.5
	260.00	1	.2	.2	61.8
	261.00	1	.2	.2	62.0

	262.00	1	.2	.2	62.2
	263.00	1	.2	.2	62.5
	264.00	1	.2	.2	62.7
	265.00	1	.2	.2	62.9
	266.00	1	.2	.2	63.2
	267.00	1	.2	.2	63.4
	268.00	1	.2	.2	63.7
	269.00	1	.2	.2	63.9
	270.00	1	.2	.2	64.1
	271.00	1	.2	.2	64.4
	272.00	1	.2	.2	64.6
	273.00	1	.2	.2	64.8
	274.00	1	.2	.2	65.1
	275.00	1	.2	.2	65.3
	276.00	1	.2	.2	65.6
	277.00	1	.2	.2	65.8
	278.00	1	.2	.2	66.0
	279.00	1	.2	.2	66.3
	280.00	1	.2	.2	66.5
	281.00	1	.2	.2	66.7
	282.00	1	.2	.2	67.0
	283.00	1	.2	.2	67.2
	284.00	1	.2	.2	67.5
	285.00	1	.2	.2	67.7
	286.00	1	.2	.2	67.9
	287.00	1	.2	.2	68.2
	288.00	1	.2	.2	68.4
	289.00	1	.2	.2	68.6
	290.00	1	.2	.2	68.9
	291.00	1	.2	.2	69.1
	292.00	1	.2	.2	69.4
	293.00	1	.2	.2	69.6
	294.00	1	.2	.2	69.8
	295.00	1	.2	.2	70.1
	296.00	1	.2	.2	70.3
	297.00	1	.2	.2	70.5
	298.00	1	.2	.2	70.8
	299.00	1	.2	.2	71.0
	300.00	1	.2	.2	71.3
	301.00	1	.2	.2	71.5
	302.00	1	.2	.2	71.7
	303.00	1	.2	.2	72.0
	304.00	1	.2	.2	72.2
	305.00	1	.2	.2	72.4
	306.00	1	.2	.2	72.7
	307.00	1	.2	.2	72.9

	308.00	1	.2	.2	73.2
	309.00	1	.2	.2	73.4
	310.00	1	.2	.2	73.6
	311.00	1	.2	.2	73.9
	312.00	1	.2	.2	74.1
	313.00	1	.2	.2	74.3
	314.00	1	.2	.2	74.6
	315.00	1	.2	.2	74.8
	316.00	1	.2	.2	75.1
	317.00	1	.2	.2	75.3
	318.00	1	.2	.2	75.5
	319.00	1	.2	.2	75.8
	320.00	1	.2	.2	76.0
	321.00	1	.2	.2	76.2
	322.00	1	.2	.2	76.5
	323.00	1	.2	.2	76.7
	324.00	1	.2	.2	77.0
	325.00	1	.2	.2	77.2
	326.00	1	.2	.2	77.4
	327.00	1	.2	.2	77.7
	328.00	1	.2	.2	77.9
	329.00	1	.2	.2	78.1
	330.00	1	.2	.2	78.4
	331.00	1	.2	.2	78.6
	332.00	1	.2	.2	78.9
	333.00	1	.2	.2	79.1
	334.00	1	.2	.2	79.3
	335.00	1	.2	.2	79.6
	336.00	1	.2	.2	79.8
	337.00	1	.2	.2	80.0
	338.00	1	.2	.2	80.3
	339.00	1	.2	.2	80.5
	340.00	1	.2	.2	80.8
	341.00	1	.2	.2	81.0
	342.00	1	.2	.2	81.2
	343.00	1	.2	.2	81.5
	344.00	1	.2	.2	81.7
	345.00	1	.2	.2	81.9
	346.00	1	.2	.2	82.2
	347.00	1	.2	.2	82.4
	348.00	1	.2	.2	82.7
	349.00	1	.2	.2	82.9
	350.00	1	.2	.2	83.1
	351.00	1	.2	.2	83.4
	352.00	1	.2	.2	83.6
	353.00	1	.2	.2	83.8

	354.00	1	.2	.2	84.1
	355.00	1	.2	.2	84.3
	356.00	1	.2	.2	84.6
	357.00	1	.2	.2	84.8
	358.00	1	.2	.2	85.0
	359.00	1	.2	.2	85.3
	360.00	1	.2	.2	85.5
	361.00	1	.2	.2	85.7
	362.00	1	.2	.2	86.0
	363.00	1	.2	.2	86.2
	364.00	1	.2	.2	86.5
	365.00	1	.2	.2	86.7
	366.00	1	.2	.2	86.9
	367.00	1	.2	.2	87.2
	368.00	1	.2	.2	87.4
	369.00	1	.2	.2	87.6
	370.00	1	.2	.2	87.9
	371.00	1	.2	.2	88.1
	372.00	1	.2	.2	88.4
	373.00	1	.2	.2	88.6
	374.00	1	.2	.2	88.8
	375.00	1	.2	.2	89.1
	376.00	1	.2	.2	89.3
	377.00	1	.2	.2	89.5
	378.00	1	.2	.2	89.8
	379.00	1	.2	.2	90.0
	380.00	1	.2	.2	90.3
	381.00	1	.2	.2	90.5
	382.00	1	.2	.2	90.7
	383.00	1	.2	.2	91.0
	384.00	1	.2	.2	91.2
	385.00	1	.2	.2	91.4
	386.00	1	.2	.2	91.7
	387.00	1	.2	.2	91.9
	388.00	1	.2	.2	92.2
	389.00	1	.2	.2	92.4
	390.00	1	.2	.2	92.6
	391.00	1	.2	.2	92.9
	392.00	1	.2	.2	93.1
	393.00	1	.2	.2	93.3
	394.00	1	.2	.2	93.6
	395.00	1	.2	.2	93.8
	396.00	1	.2	.2	94.1
	397.00	1	.2	.2	94.3
	398.00	1	.2	.2	94.5
	399.00	1	.2	.2	94.8

	400.00	1	.2	.2	95.0
	401.00	1	.2	.2	95.2
	402.00	1	.2	.2	95.5
	403.00	1	.2	.2	95.7
	404.00	1	.2	.2	96.0
	405.00	1	.2	.2	96.2
	406.00	1	.2	.2	96.4
	407.00	1	.2	.2	96.7
	408.00	1	.2	.2	96.9
	409.00	1	.2	.2	97.1
	410.00	1	.2	.2	97.4
	411.00	1	.2	.2	97.6
	412.00	1	.2	.2	97.9
	413.00	1	.2	.2	98.1
	414.00	1	.2	.2	98.3
	415.00	1	.2	.2	98.6
	416.00	1	.2	.2	98.8
	417.00	1	.2	.2	99.0
	418.00	1	.2	.2	99.3
	419.00	1	.2	.2	99.5
	420.00	1	.2	.2	99.8
	421.00	1	.2	.2	100.0
	Total	421	100.0	100.0	

Region					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	North	145	34.4	34.4	34.4
	Central	127	30.2	30.2	64.6
	South	149	35.4	35.4	100.0
	Total	421	100.0	100.0	

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	144	34.2	34.2	34.2
	Male	277	65.8	65.8	100.0
	Total	421	100.0	100.0	

Nationality					
		Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Laos	66	15.7	15.7	15.7
	Vietnam	355	84.3	84.3	100.0
	Total	421	100.0	100.0	

Group					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	EG	209	49.6	49.6	49.6
	CG	212	50.4	50.4	100.0
	Total	421	100.0	100.0	

```
COMPUTE Pre_Score=Mean( Pre_Q1 + pre_Q2 + pre_Q3 + pre_Q4 + pre_Q5 + pre_Q6+
pre_Q7 + pre_Q8 +
pre_Q9 + pre_Q10 + pre_Q11+ pre_Q12 + pre_Q13+ pre_Q14+ pre_Q15+
pre_Q16+ pre_Q17 + pre_Q18) .
EXECUTE.
COMPUTE Post_Score=Mean( Post_Q1 + Post_Q2 + Post_Q3 + Post_Q4 + Post_Q5
+ Post_Q6+ Post_Q7 +
Post_Q8 + Post_Q9 + Post_Q10 + Post_Q11+ Post_Q12 + Post_Q13+
Post_Q14+ Post_Q15+ Post_Q16+
Post_Q17 + Post_Q18) .
EXECUTE.
MEANS TABLES=Pre_Score Post_Score BY Region
/CELLS=MEAN COUNT STDDEV.
```

Means

Notes		
Output Created		04-NOV-2025 10:23:18
Comments		
Input	Data	/Users/macbook/Documents/Viết báo/2026/Khương 2/Data.sav
	Active Dataset	DataSet0
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data	421
	File	

Missing Value Handling	Definition of Missing	For each dependent variable in a table, user-defined missing values for the dependent and all grouping variables are treated as missing.
	Cases Used	Cases used for each table have no missing values in any independent variable, and not all dependent variables have missing values.
Syntax		MEANS TABLES=Pre_Score Post_Score BY Region /CELLS=MEAN COUNT STDDEV.
Resources	Processor Time	00:00:00.01
	Elapsed Time	00:00:00.00

Case Processing Summary

	Included		Cases Excluded		Total	
	N	Percent	N	Percent	N	Percent
Pre_Score * Region	421	100.0%	0	0.0%	421	100.0%
Post_Score * Region	421	100.0%	0	0.0%	421	100.0%

Report

Region		Pre_Score	Post_Score
North	Mean	51.9172	67.4483
	N	145	145
	Std. Deviation	6.70976	9.03153
Central	Mean	51.4016	66.6378
	N	127	127
	Std. Deviation	6.49696	7.95989
South	Mean	55.2819	68.4094
	N	149	149
	Std. Deviation	7.40077	8.94277
Total	Mean	52.9525	67.5439
	N	421	421
	Std. Deviation	7.10081	8.69899

UNIANOVA Post_Score BY Region Group WITH Pre_Score
/METHOD=SSTYPE(3)

```
/INTERCEPT=INCLUDE
/EMMEANS=TABLES (Region) WITH (Pre_Score=MEAN) COMPARE ADJ (LSD)
/EMMEANS=TABLES (Group) WITH (Pre_Score=MEAN) COMPARE ADJ (LSD)
/EMMEANS=TABLES (Region*Group) WITH (Pre_Score=MEAN)
/PRINT ETASQ DESCRIPTIVE HOMOGENEITY
/CRITERIA=ALPHA (.05)
/DESIGN=Pre_Score Region Group Region*Group.
```

Univariate Analysis of Variance

Notes

Output Created		04-NOV-2025 10:49:05
Comments		
Input	Data	/Users/macbook/Documents/Viết báo/2026/Khương 2/Data.sav
	Active Dataset	DataSet0
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	421
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.

Syntax	UNIANOVA Post_Score BY Region Group WITH Pre_Score /METHOD=SSTYPE(3) /INTERCEPT=INCLUDE /EMMEANS=TABLES(Region) WITH(Pre_Score=MEAN) COMPARE ADJ(LSD) /EMMEANS=TABLES(Group) WITH(Pre_Score=MEAN) COMPARE ADJ(LSD) /EMMEANS=TABLES(Region*Group) WITH(Pre_Score=MEAN) /PRINT ETASQ DESCRIPTIVE HOMOGENEITY /CRITERIA=ALPHA(.05) /DESIGN=Pre_Score Region Group Region*Group.	
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.00

Between-Subjects Factors

		Value Label	N
Region	1.00	North	145
	2.00	Central	127
	3.00	South	149
Group	1.00	EG	209
	2.00	CG	212

Descriptive Statistics

Dependent Variable: Post_Score

Region	Group	Mean	Std. Deviation	N
North	EG	75.6533	2.84981	75
	CG	58.6571	3.15257	70
	Total	67.4483	9.03153	145
Central	EG	74.1452	3.04527	62

South	CG	59.4769	3.03679	65
	Total	66.6378	7.95989	127
	EG	77.1111	2.61930	72
	CG	60.2727	3.24295	77
	Total	68.4094	8.94277	149
Total	EG	75.7081	3.05966	209
	CG	59.4953	3.20766	212
	Total	67.5439	8.69899	421

Levene's Test of Equality of Error Variances^a

Dependent Variable: Post_Score

F	df1	df2	Sig.
.609	5	415	.693

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.^a

a. Design: Intercept + Pre_Score + Region + Group + Region * Group

Tests of Between-Subjects Effects

Dependent Variable: Post_Score

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	28066.010 ^a	6	4677.668	521.080	.000	.883
Intercept	28973.138	1	28973.138	3227.530	.000	.886
Pre_Score	12.624	1	12.624	1.406	.236	.003
Region	237.112	2	118.556	13.207	.000	.060
Group	26658.507	1	26658.507	2969.686	.000	.878
Region * Group	99.779	2	49.890	5.558	.004	.026
Error	3716.427	414	8.977			
Total	1952462.000	421				
Corrected Total	31782.437	420				

a. R Squared = .883 (Adjusted R Squared = .881)

Estimated Marginal Means

1. Region

Estimates

Dependent Variable: Post_Score

Region	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
North	67.183 ^a	.250	66.691	67.674
Central	66.852 ^a	.268	66.325	67.379
South	68.629 ^a	.251	68.136	69.123

a. Covariates appearing in the model are evaluated at the following values: Pre_Score = 52.9525.

Pairwise Comparisons

Dependent Variable: Post_Score

(I) Region	(J) Region	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
North	Central	.331	.364	.364	-.385	1.048
	South	-1.447*	.358	.000	-2.150	-.743
Central	North	-.331	.364	.364	-1.048	.385
	South	-1.778*	.372	.000	-2.510	-1.046
South	North	1.447*	.358	.000	.743	2.150
	Central	1.778*	.372	.000	1.046	2.510

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Univariate Tests

Dependent Variable: Post_Score

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	237.112	2	118.556	13.207	.000	.060
Error	3716.427	414	8.977			

The F tests the effect of Region. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

2. Group

Estimates

Dependent Variable: Post_Score

Group	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
EG	75.614 ^a	.209	75.203	76.024
CG	59.495 ^a	.207	59.087	59.903

a. Covariates appearing in the model are evaluated at the following values: Pre_Score = 52.9525.

Pairwise Comparisons

Dependent Variable: Post_Score

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
EG	CG	16.119 [*]	.296	.000	15.537	16.700
CG	EG	-16.119 [*]	.296	.000	-16.700	-15.537

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Univariate Tests

Dependent Variable: Post_Score

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	26658.507	1	26658.507	2969.686	.000	.878
Error	3716.427	414	8.977			

The F tests the effect of Group. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

3. Region * Group

Dependent Variable: Post_Score

Region	Group	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound

North	EG	75.660 ^a	.346	74.980	76.340
	CG	58.706 ^a	.360	57.997	59.414
Central	EG	74.200 ^a	.383	73.446	74.953
	CG	59.503 ^a	.372	58.771	60.235
South	EG	76.982 ^a	.369	76.256	77.708
	CG	60.277 ^a	.341	59.605	60.948

a. Covariates appearing in the model are evaluated at the following values:

Pre_Score = 52.9525.

```
COMPUTE Group_stite=Region * 2 + Group - 2.
EXECUTE.
ONEWAY Pre_Score BY Group_stite
  /STATISTICS DESCRIPTIVES HOMOGENEITY
  /MISSING ANALYSIS
  /CRITERIA=CILEVEL(0.95)
  /POSTHOC=TUKEY ALPHA(0.05) .
```

Oneway

Notes

Output Created		04-NOV-2025 16:44:55
Comments		
Input	Data	/Users/macbook/Documents/Viết báo/2026/Khuơng 2/Data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	421
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY Pre_Score BY Group_stite /STATISTICS DESCRIPTIVES HOMOGENEITY /MISSING ANALYSIS /CRITERIA=CILEVEL(0.95) /POSTHOC=TUKEY ALPHA(0.05).
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.00

Descriptives

Pre_Score

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1.00	75	52.7067	6.37091	.73565	51.2409	54.1725	42.00	66.00
2.00	70	51.0714	7.00170	.83686	49.4019	52.7409	35.00	69.00
3.00	62	50.8387	5.83150	.74060	49.3578	52.3196	37.00	64.00
4.00	65	51.9385	7.07742	.87785	50.1848	53.6922	34.00	72.00
5.00	72	57.9306	7.15291	.84298	56.2497	59.6114	42.00	75.00
6.00	77	52.8052	6.78241	.77293	51.2658	54.3446	36.00	71.00
Total	421	52.9525	7.10081	.34607	52.2722	53.6327	34.00	75.00

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Pre_Score	Based on Mean	.709	5	415	.617
	Based on Median	.724	5	415	.606
	Based on Median and with adjusted df	.724	5	403.769	.606
	Based on trimmed mean	.701	5	415	.623

ANOVA

Pre_Score

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2381.989	5	476.398	10.519	.000
Within Groups	18795.061	415	45.289		
Total	21177.050	420			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Pre_Score

Tukey HSD

(I) Group_stite	(J) Group_stite	Mean	Std. Error	Sig.	95% Confidence Interval
-----------------	-----------------	------	------------	------	-------------------------

		Difference (I-J)			Lower Bound	Upper Bound
1.00	2.00	1.63524	1.11841	.689	-1.5669	4.8374
	3.00	1.86796	1.15513	.588	-1.4393	5.1752
	4.00	.76821	1.14045	.985	-2.4970	4.0334
	5.00	-5.22389*	1.11035	.000	-8.4029	-2.0449
	6.00	-.09853	1.09180	1.000	-3.2244	3.0274
2.00	1.00	-1.63524	1.11841	.689	-4.8374	1.5669
	3.00	.23272	1.17365	1.000	-3.1276	3.5930
	4.00	-.86703	1.15920	.976	-4.1859	2.4519
	5.00	-6.85913*	1.12961	.000	-10.0933	-3.6250
	6.00	-1.73377	1.11138	.625	-4.9157	1.4482
3.00	1.00	-1.86796	1.15513	.588	-5.1752	1.4393
	2.00	-.23272	1.17365	1.000	-3.5930	3.1276
	4.00	-1.09975	1.19467	.941	-4.5202	2.3207
	5.00	-7.09185*	1.16597	.000	-10.4301	-3.7536
	6.00	-1.96649	1.14832	.524	-5.2542	1.3213
4.00	1.00	-.76821	1.14045	.985	-4.0334	2.4970
	2.00	.86703	1.15920	.976	-2.4519	4.1859
	3.00	1.09975	1.19467	.941	-2.3207	4.5202
	5.00	-5.99209*	1.15142	.000	-9.2887	-2.6955
	6.00	-.86673	1.13355	.973	-4.1122	2.3787
5.00	1.00	5.22389*	1.11035	.000	2.0449	8.4029
	2.00	6.85913*	1.12961	.000	3.6250	10.0933
	3.00	7.09185*	1.16597	.000	3.7536	10.4301
	4.00	5.99209*	1.15142	.000	2.6955	9.2887
	6.00	5.12536*	1.10326	.000	1.9666	8.2841
6.00	1.00	.09853	1.09180	1.000	-3.0274	3.2244
	2.00	1.73377	1.11138	.625	-1.4482	4.9157
	3.00	1.96649	1.14832	.524	-1.3213	5.2542
	4.00	.86673	1.13355	.973	-2.3787	4.1122
	5.00	-5.12536*	1.10326	.000	-8.2841	-1.9666

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Pre_Score

Tukey HSD^{a,b}

Group_stite	N	Subset for alpha = 0.05	
		1	2

3.00	62	50.8387	
2.00	70	51.0714	
4.00	65	51.9385	
1.00	75	52.7067	
6.00	77	52.8052	
5.00	72		57.9306
Sig.		.515	1.000

Means for groups in homogeneous subsets are displayed.

- a. Uses Harmonic Mean Sample Size = 69.760.
- b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.