

Task 3-8 (Method A)

GET

FILE=' C:\¥Users¥共用アカウント¥Desktop¥snap_shot用.sav'.

DATASET NAME DataSet1 WINDOW=FRONT.

ONEWAY sbp BY bmi3g

/MISSING ANALYSIS

/POSTHOC=TUKEY ALPHA(0.05).

Oneway

[DataSet1] C:\¥Users¥共用アカウント¥Desktop¥snap_shot用.sav

ANOVA

sbp

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6333.047	2	3166.523	12.310	.000
Within Groups	140193.148	545	257.235		
Total	146526.195	547			

P value for the difference among three groups (by ANOVA)

Post Hoc Tests

Multiple Comparisons

Dependent Variable: sbp

Tukey HSD

P value for the difference between group 1 (lean) and group 2 (normal)

		Mean Difference (I-J)	Std. Error	Sig.	95% ... Lower Bound
(I) BMI 3 groups	(J) BMI 3 groups				
1.00	2.00	-10.595*	3.866	.017	-19.68
	3.00	-16.693*	4.023	.000	-26.15
2.00	1.00	10.595*	3.866	.017	1.51
	3.00	-6.097*	1.595	.000	-9.85
3.00	1.00	16.693*	4.023	.000	7.24
	2.00	6.097*	1.595	.000	2.35

Multiple Comparisons

Dependent Variable: sbp

Tukey HSD

		95% Confidence
(I) BMI 3 groups	(J) BMI 3 groups	Upper Bound
1.00	2.00	-1.51
	3.00	-7.24
2.00	1.00	19.68
	3.00	-2.35
3.00	1.00	26.15
	2.00	9.85

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

Homogeneous Subsets

sbp

Tukey HSD^{a,b}

BMI 3 groups	N	Subset for alpha = 0.05	
		1	2
1.00	18	114.78	
2.00	394		125.37
3.00	136		131.47
Sig.		1.000	.164

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 45.839.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Task 3-8 (Method B)

UNIANOVA sbp BY bmi3g

/METHOD=SSTYPE(3)

/INTERCEPT=INCLUDE

/CRITERIA=ALPHA(0.05)

/DESIGN=bmi3g.

Univariate Analysis of Variance

Between-Subjects Factors

	N
BMI 3 groups 1.00	18
2.00	394
3.00	136

Tests of Between-Subjects Effects

Dependent Variable: sbp

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	6333.047 ^a	2	3166.523	12.310	.000
Intercept	2110156.667	1	2110156.667	8203.221	.000
bmi3g	6333.047	2	3166.523	12.310	.000
Error	140193.148	545	257.235		
Total	8921073.000	548			
Corrected Total	146526.195	547			

P value for the difference among three groups (by ANOVA)

a. R Squared = .043 (Adjusted R Squared = .040)

Task 3-9

REGRESSION

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/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT sbp
/METHOD=ENTER sex age bmi.

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Regression

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	bmi, age, sex ^b	.	Enter

a. Dependent Variable: sbp

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.372 ^a	.139	.134	15.232

a. Predictors: (Constant), bmi, age, sex

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20314.824	3	6771.608	29.187	.000 ^b
	Residual	126211.372	544	232.006		
	Total	146526.195	547			

a. Dependent Variable: sbp

b. Predictors: (Constant), bmi, age, sex

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	78.582	7.773		10.109	.000
	sex	-5.700	1.660	-.140	-3.434	.001
	age	.530	.093	.228	5.685	.000
	bmi	1.259	.249	.205	5.053	.000

a. Dependent Variable: sbp

Systolic blood pressure

= 78.582 – 5.700 x (sex [1 for men and 2 for women])
+ 0.530 x (age in years) + 1.259 x (body mass index)

Appendix

LOGISTIC REGRESSION VARIABLES hyt

/METHOD=ENTER sex bmi age4g

/CONTRAST (age4g)=Indicator(1)

/PRINT=CI (95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

Logistic Regression

The dependent variable should be coded as
1 for outcome (+) and 0 for outcome (-).

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	548	100.0
	Missing Cases	0	.0
	Total	548	100.0
Unselected Cases		0	.0
Total		548	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
.00	0
1.00	1

Categorical Variables Codings

		Frequency	Parameter coding		
			(1)	(2)	(3)
age4g	1.00	73	.000	.000	.000
	2.00	208	1.000	.000	.000
	3.00	235	.000	1.000	.000
	4.00	32	.000	.000	1.000

Block 0: Beginning Block

Classification Table^{a,b}

Observed			Predicted		
			hyt		Percentage Correct
			.00	1.00	
Step 0	hyt	.00	423	0	100.0
		1.00	125	0	.0
Overall Percentage					77.2

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-1.219	.102	143.390	1	.000	.296

Variables not in the Equation

		Score	df	Sig.
Step 0	Variables			
	sex	7.947	1	.005
	bmi	12.998	1	.000
	age4g	35.999	3	.000
	age4g(1)	11.902	1	.001
	age4g(2)	34.119	1	.000
	age4g(3)	.318	1	.573
Overall Statistics		48.104	5	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	51.228	5	.000
	Block	51.228	5	.000
	Model	51.228	5	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	537.294 ^a	.089	.136

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table^a

			Predicted	
			hyt	
			.00	1.00
Step 1	Observed			
	hyt	.00	421	2
		1.00	122	3
Overall Percentage				
				77.4

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for
								Lower
Step 1 ^a	sex	-.696	.319	4.752	1	.029	.499	.267
	bmi	.109	.041	7.029	1	.008	1.115	1.029
	age4g			29.602	3	.000		
	age4g(1)	.568	.473	1.444	1	.230	1.765	.699
	age4g(2)	1.664	.452	13.560	1	.000	5.279	2.177
	age4g(3)	.901	.628	2.059	1	.151	2.462	.719
	Constant	-4.047	1.142	12.557	1	.000	.017	

Odds ratios (OR)

Variables in the Equation

		95% C.I. for
		Upper
Step 1 ^a	sex	.932
	bmi	1.208
	age4g	
	age4g(1)	4.461
	age4g(2)	12.796
	age4g(3)	8.429
	Constant	

sex: 1 for men and 2 for women
bmi: body mass index (as a continuous variable)
age4g(1), age4g(2) and age4g(3): dummy variables
for ages of 40–49, 50–59 and 60–69 years,
respectively (compared with 30–39 years)

a. Variable(s) entered on step 1: sex, bmi, age4g.