

Analyse de covariance

Une variable nominale dichotomique et une variable continue

Données

Mélange de variables explicatives: 1 numérique et 1 nominale
 Step 1: la variable nominale qu'on veut tester est-elle dichotomique (H/F) ou polytomique (VSO, VSG, VSB)?

	SEXE	AGE	SEI	VOIE	MATH
1	G	16.00	54	VSG	431
2	G	15.50	45	VSG	393
3	F	15.75	51	VSG	479
4	F	15.67	54	VSG	518
5	G	15.83	40	VSG	573
6	F	16.25	34	VSG	547
7	F	15.67	60	VSG	427
8	G	15.50	55	VSG	585
9	G	15.75	32	VSG	418
10	F	15.67	69	VSG	461
11	G	15.92	71	VSG	554
12	F	15.83	51	VSO	525
13	G	15.92	23	VSO	499
14	F	15.42	70	VSO	544
15	G	15.83	45	VSG	624
16	G	15.83	69	VSG	292
17	G	15.75	43	VSG	477
18	F	15.75	51	VSG	588
19	F	15.50	69	VSG	514
20	G	15.42	37	VSG	467

Codage traitement (dummy)

variable indicatrice / muette / dummy

D.G

COMPUTED VARIABLE

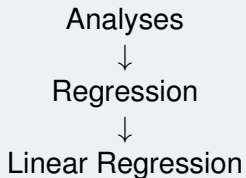
D.G	
Description	
Formula	$f_x = \text{IF}(\text{SEXE}=="G", 1, 0)$

"Si c'est un garçon, on code par 1, sinon, on met 0"
= 3 arguments: assertion, si l'assertion est vraie, si l'assertion est fausse

retour word

Modèle complet


Cheminement dans JAMOV





Modèle complet


Tableau des coeff

Linear Regression




 SEXE


 AGE


 VOIE

→

 MATH

→

 SEI

 D.G

→



Modèle complet

Model Coefficients		ES associé à			
Predictor		Estimate	SE	t	p
Intercept	α^A	440.238	7.421	59.320	< .001
SEI	β^A	1.444	0.133	10.873	< .001
D.G	γ^A	23.622	4.305	5.487	< .001

on divise l'estimation par l'erreur standard pour avoir le t de l'ancova. La proba critique ici est toute petite. on rejette H0.

Apa: $t(1582 = 2e \text{ paramètre global}) = 5.487 \dots$

retour word

Modèles emboîtés

The screenshot displays the 'Model Builder' window. On the left, the 'Predictors' list contains 'SEI' and 'D.G', with 'D.G' selected. In the center, there are two arrows: a right-pointing arrow and a right-pointing arrow with a dropdown arrow. On the right, the 'Blocks' section shows two nested models: 'Block 1' containing 'SEI' and 'Block 2' containing 'D.G'. Each block has a close button (X). At the bottom of the 'Blocks' section is a blue button labeled '+ Add New Block'.

Modèles emboîtés

APA : $F(1, 1582) = 30.105, p < .001$

(1582 = ddl)

Model Fit Measures

Model	R	R ²
1	0.268	0.072
2	0.299	0.089

Model Comparisons

Comparison						
Model	Model	ΔR^2	F	df1	df2	p
1	- 2	0.017	30.105	1	1582	< .001

Codage traitement (dummy)

COMPUTED VARIABLE	
D.VSG	
Description	
Formula	$f_x =$ = IF (VOIE=="VSG", 1, 0)
IF(assertion, codage si vrai, faux)	


Codage traitement (dummy)


COMPUTED VARIABLE


D.VSB	
Description	
Formula	$f_x =$ = IF(V0IE=="VSB", 1, 0)


Modèles emboîtés


Linear Regression



 SEXE


 D.G

 AGE

 VOIE


→


Dependent Variable


 MATH

→

Covariates

 SEI

 D.VSG

 D.VSB

→

Factors



Modèles emboîtés

The screenshot displays the 'Model Builder' window. On the left, under the 'Predictors' section, a list contains 'SEI', 'D.VSG', and 'D.VSB'. 'D.VSB' is highlighted with a blue background. In the center, there are two buttons: a right-pointing arrow and a right-pointing arrow with a dropdown arrow. On the right, under the 'Blocks' section, two blocks are listed: 'Block 1' and 'Block 2'. 'Block 1' contains the predictor 'SEI'. 'Block 2' contains the predictors 'D.VSG' and 'D.VSB'. Each block has a close button (X) in its top right corner. At the bottom of the 'Blocks' section, there is a blue button with a plus sign and the text '+ Add New Block'.

Modèles emboîtés

On teste l'importance de la variable nominale polytomique

Model Fit Measures

Model	R	R ²	Overall Model Test			
			F	df1	df2	p
1	0.268	0.072	122.473	1	1583	< .001
2	0.607	0.368	307.443	3	1581	< .001

Model Comparisons

Comparison			ΔR^2	F	df1	df2	p
Model	Model						
1	- 2		0.297	371.281	2	1581	< .001

F de 371 est grand et significatif. On rejette H0. Il y a des différences entre les 3 filières VSO VSG et VSB APA: $F(2, 1581) = 371.281, p < .001$

Tableau des coefficients Graphique

Model Coefficients

Predictor		Estimate	SE	t	p
Intercept	$\hat{\alpha}$	445.396	6.307	70.614	< .001
SEI	β^{\wedge}	0.243	0.120	2.033	0.042
D.VSG	γ_1^{\wedge}	48.730	4.756	10.247	< .001
D.VSB	γ_2^{\wedge}	130.506	4.993	26.137	< .001

Modèles emboîtés

Model Builder

Predictors

SEI
D.VSG
D.VSB

→

→ ▾

Blocks

Block 1	×
SEI	
Block 2	×
D.VSG	
D.VSB	
Block 3	×
SEI * D.VSG	
SEI * D.VSB	

XD

Modèles emboîtés

Model Fit Measures

Model	R	R ²	Overall Model Test			
			F	df1	df2	p
1	0.2680	0.0718	122.4731	1	1583	< .001
2	0.6070	0.3684	307.4433	3	1581	< .001
3	0.6073	0.3689	184.5667	5	1579	< .001

Modèles emboîtés

Model Comparisons

Comparison		ΔR^2	F	df1	df2	p
Model	Model					
1	- 2	0.2966	371.2807	2	1581	< .001
2	- 3	4.2165e-4	0.5275	2	1579	0.590