

Generalized Linear Mixed Models

Notes

Output Created		28-JUN-2022 23:33:33
Comments		
Input	Data	S:\Quant\data cleaning\V2\KN\V3\Analysis\Analysis 27.06.2022\NERS_NS.sav
	Active Dataset	DataSet1
	Filter	(Cohort_Group = 1 | Cohort_Group = 2 | Cohort_Group = 3) & (Date_of_first_exercise_recorded_USE_ME = 1) (FILTER)
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	13008

Syntax

```
GENLINMIXED
  /DATA_STRUCTURE
SUBJECTS=Local_Authority
  /FIELDS
TARGET=Date_of_16wk_consultat
ion_recorded_USE_ME
TRIALS=NONE OFFSET=NONE
  /TARGET_OPTIONS
DISTRIBUTION=BINOMIAL
LINK=LOGIT
  /FIXED EFFECTS=IMD_Quintile
Age_at_ref2 Gender2 Pathways_5
Cohort_Group
USE_INTERCEPT=TRUE
  /RANDOM
EFFECTS=IMD_Quintile
Age_at_ref2 Gender2 Pathways_5
Cohort_Group
USE_INTERCEPT=TRUE
  SUBJECTS=Local_Authority
COVARIANCE_TYPE=VARIANCE
_COMPONENTS
SOLUTION=FALSE
  /BUILD_OPTIONS
TARGET_CATEGORY_ORDER=D
  ESCENDING
INPUTS_CATEGORY_ORDER=D
  ESCENDING
  MAX_ITERATIONS=100
CONFIDENCE_LEVEL=95
DF_METHOD=RESIDUAL
COVB=MODEL
PCONVERGE=0.000001(ABSOLU
TE)
  SCORING=0
SINGULAR=0.000000000001
  /EMMEANS_OPTIONS
SCALE=ORIGINAL
PADJUST=LSD.
```

Resources

Processor Time

00:00:06.36

Elapsed Time	00:00:05.96
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Case Processing Summary

	N	Percent
Included	12524	96.3%
Excluded	484	3.7%
Total	13008	100.0%

Model Summary

Target	Date_of_16wk_consultation_rec ordred_USE_ME
Probability Distribution	Binomial
Link Function	Logit
Information Criterion	<div>Akaike Corrected</div> <div>Bayesian</div>
	58411.264
	58455.863

Information criteria are based on the -2 log likelihood (58399.257) and are used to compare models. Models with smaller information criterion values fit better.

Data Structure^a

[illegible]

	1.000	Yes
Total Number of Levels	22	

Only the first 10 records are displayed.^a

a. Target: Date_of_16wk_consultation_recorded_USE_ME

Classification

Overall Percent Correct = 71.4%^a

Observed		Predicted	
		Yes	No
Yes	Count	6663	1245
	% within Observed	84.3%	15.7%
No	Count	2332	2284
	% within Observed	50.5%	49.5%

a. Target: Date_of_16wk_consultation_recorded_USE_ME

Fixed Effects^a

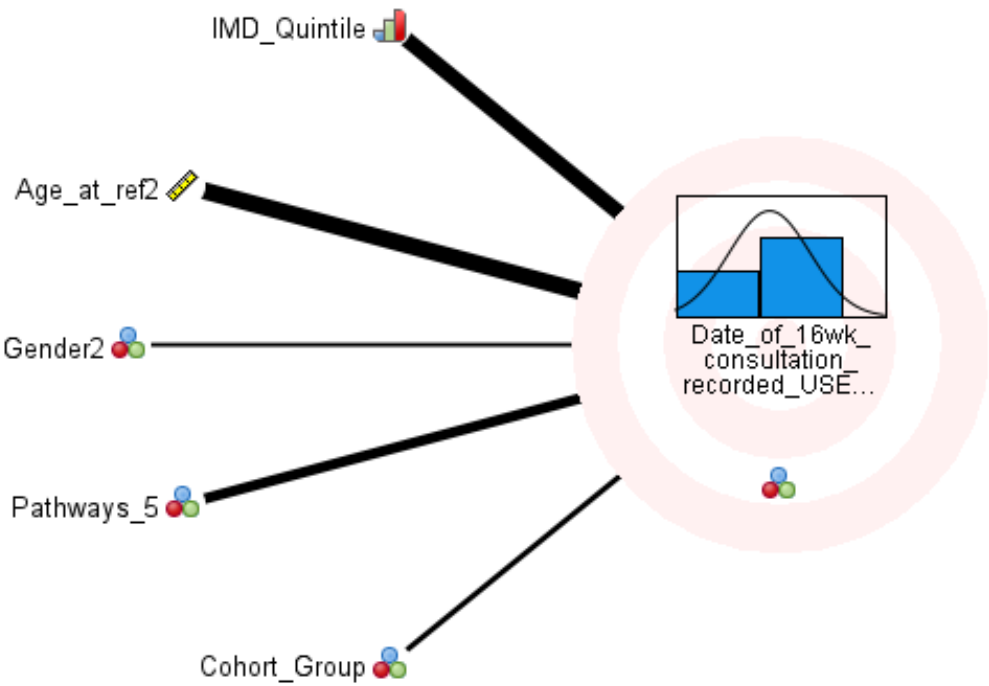
Source	F	df1	df2	Sig.
Corrected Model	11.810	12	12511	.000
IMD_Quintile	5.317	4	12511	<.001
Age_at_ref2	81.503	1	12511	.000
Gender2	1.129	1	12511	.288
Pathways_5	3.375	4	12511	.009
Cohort_Group	1.665	2	12511	.189

Probability distribution: Binomial

Link function: Logit^a

a. Target: Date_of_16wk_consultation_recorded_USE_ME

Fixed Effects



Fixed Coefficients^a

Model Term	Coefficient	Std. Error	t	Sig.	95% Confidence Interval		Exp(Coeff)
					Lower	Upper	
Intercept	-.626	.2828	-2.213	.027	-1.180	-.072	
IMD_Quintile=5	.331	.0884	3.746	<.001	.158	.505	
IMD_Quintile=4	.335	.0839	3.989	<.001	.170	.499	
IMD_Quintile=3	.274	.0828	3.310	<.001	.112	.436	
IMD_Quintile=2	.166	.0824	2.019	.043	.005	.328	
IMD_Quintile=1	0 ^b	.	.	.	.	.
Age_at_ref2	.018	.0020	9.028	.000	.014	.022	
Gender2=2	-.047	.0438	-1.062	.288	-.132	.039	

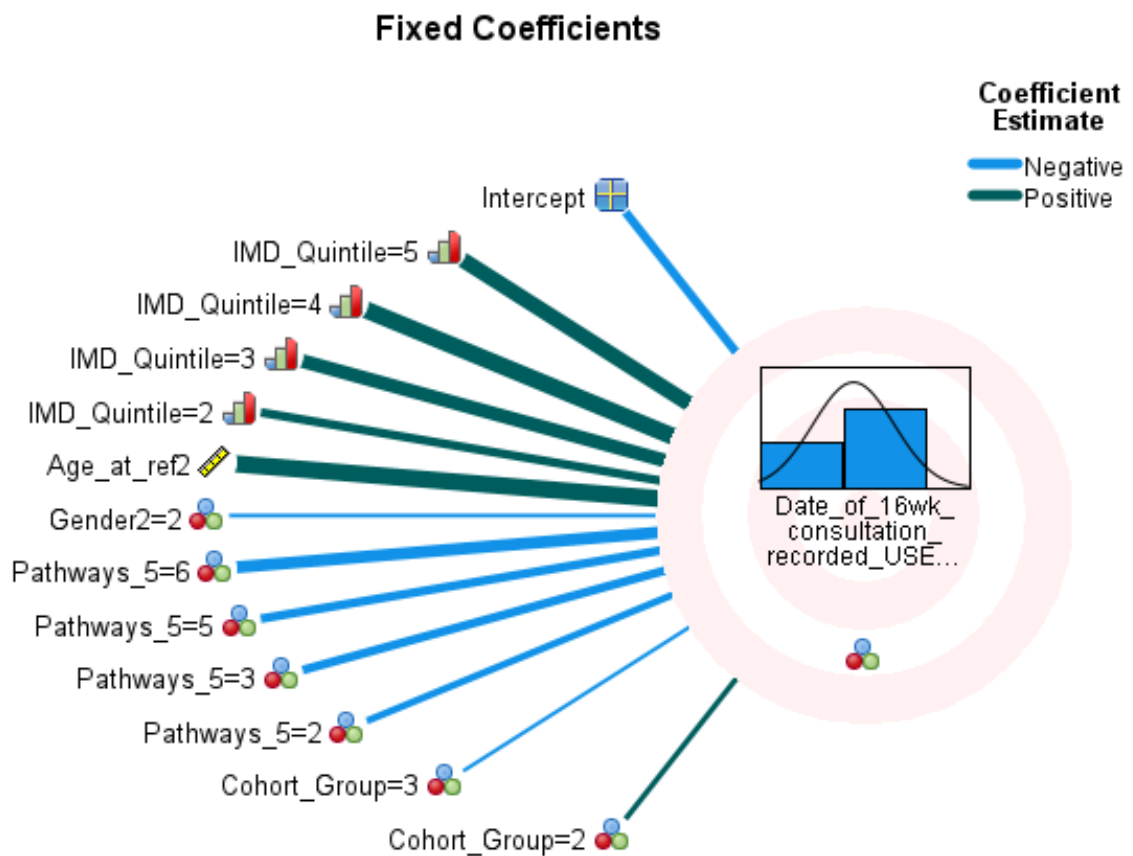
Gender2=1	0 ^b	.	.	.	.	.	.
Pathways_5=6	-.324	.1034	-3.132	.002	-.526	-.121	.
Pathways_5=5	-.321	.1251	-2.569	.010	-.566	-.076	.
Pathways_5=3	-.278	.1408	-1.973	.049	-.554	-.002	.
Pathways_5=2	-.173	.0950	-1.826	.068	-.360	.013	.
Pathways_5=1	0 ^b	.	.	.	.	.	.
Cohort_Group=3	-.115	.3121	-.368	.713	-.727	.497	.
Cohort_Group=2	.420	.2931	1.434	.152	-.154	.995	.
Cohort_Group=1	0 ^b	.	.	.	.	.	.

Probability distribution: Binomial

Link function: Logit^a

a. Target: Date_of_16wk_consultation_recorded_USE_ME

b. This coefficient is set to zero because it is redundant.



Random Effect Covariances

Random Effect Block	Intercept	IMD_ Quintile=5	IMD_ Quintile=4	IMD_ Quintile=3	IMD_ Quintile=2
Intercept	.552	.000	.000	.000	.000
IMD_ Quintile=5	.000	.018	.000	.000	.000
IMD_ Quintile=4	.000	.000	.018	.000	.000
IMD_ Quintile=3	.000	.000	.000	.018	.000
IMD_ Quintile=2	.000	.000	.000	.000	.018
IMD_ Quintile=1	.000	.000	.000	.000	.000
Age_at_ref2	.000	.000	.000	.000	.000
Gender2=2	.000	.000	.000	.000	.000
Gender2=1	.000	.000	.000	.000	.000
Pathways_5=6	.000	.000	.000	.000	.000
Pathways_5=5	.000	.000	.000	.000	.000
Pathways_5=3	.000	.000	.000	.000	.000
Pathways_5=2	.000	.000	.000	.000	.000
Pathways_5=1	.000	.000	.000	.000	.000
Cohort_Group=3	.000	.000	.000	.000	.000
Cohort_Group=2	.000	.000	.000	.000	.000
Cohort_Group=1	.000	.000	.000	.000	.000

Covariance Structure: Variance components

Subject Specification: Local_Authority

Covariance Parameters

Covariance Parameters Summary

Covariance Parameters	Residual Effect	0
	Random Effects	6
Design Matrix Columns	Fixed Effects	17

Random Effects	17 ^a
Common Subjects	22

Common subjects are based on the subject specifications for the residual and random effects and are used to chunk the data for better performance.

a. This is the number of columns per common subject.

Residual Effect						
Residual Effect	Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
					Lower	Upper
Variance	1.000	.	.	.	.	.

Covariance Structure: Scaled Identity

Subject Specification: (None)

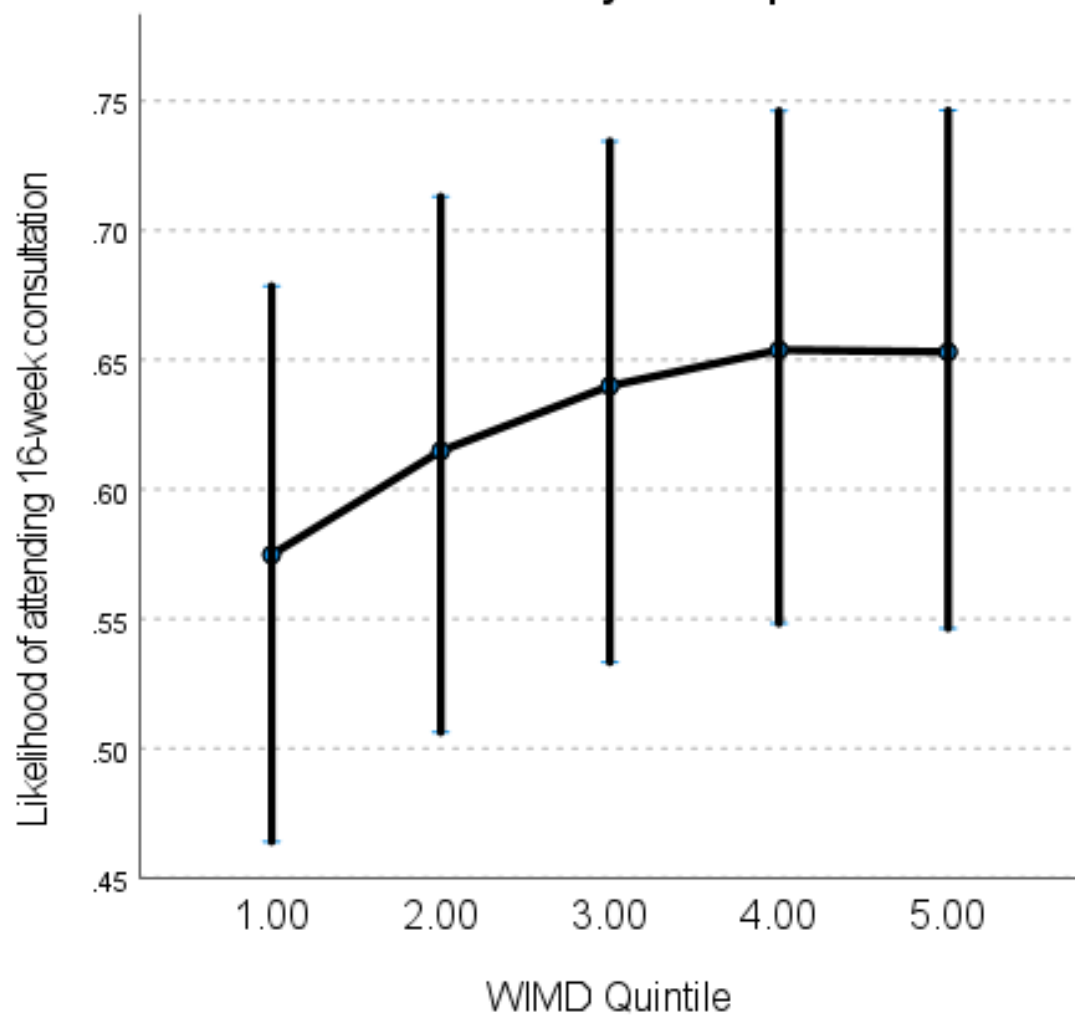
Random Effect						
Random Effect Covariance	Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
					Lower	Upper
Var(Intercept)	.552	.315	1.754	.079	.181	1.6
Var(IMD_Quintile)	.018	.011	1.590	.112	.005	.0
Var(Age_at_ref2)	3.800E-5	2.331E-5	1.630	.103	1.141E-5	.0
Var(Gender2)	.000	.006	.045	.964	2.792E-23	28487839679248
						.0
Var(Pathways_5)	.060	.022	2.765	.006	.030	.1
Var(Cohort_Group)	.884	.227	3.887	<.001	.534	1.4

Covariance Structure: Variance components

Subject Specification: Local_Authority

Estimated Marginal Means for Top Significant Fixed Effects

Adherence 2 by WIMD quintile



Adherence 2 by pathway

