



The SAS System

The FREQ Procedure

Participant	Frequency	Cumulative Frequency
P001	2	2
P002	2	4
P003	2	6
P004	2	8
P005	2	10
P006	2	12
P007	2	14
P008	2	16
P009	2	18
P010	2	20
P011	2	22
P012	2	24
P013	2	26
P015	2	28
P016	2	30
P017	2	32
P019	2	34
P020	2	36
P022	2	38
P023	2	40
P024	2	42
P025	2	44
P026	2	46
P027	2	48
P028	2	50
P029	2	52
P030	2	54
P031	2	56
P032	2	58
P033	2	60
P034	2	62
P035	2	64
P036	2	66
P039	2	68
P041	2	70
P042	2	72
P043	2	74
P044	2	76
P045	2	78
P046	2	80
P047	2	82
P048	2	84
P049	2	86

Participant	Frequency	Cumulative Frequency
P050	2	88
P051	2	90
P052	2	92
P053	2	94
P054	2	96
P055	2	98
P056	2	100
P057	2	102
P058	2	104
P059	2	106
P060	2	108
P061	2	110
P062	2	112
P063	2	114
P064	2	116

The SAS System

The Mixed Procedure

Model Information	
Data Set	WORK.DAT_LONG
Dependent Variable	ALI
Covariance Structure	Unstructured
Subject Effect	Participant
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Containment

Class Level Information		
Class	Levels	Values
Participant	58	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P015 P016 P017 P019 P020 P022 P023 P024 P025 P026 P027 P028 P029 P030 P031 P032 P033 P034 P035 P036 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P050 P051 P052 P053 P054 P055 P056 P057 P058 P059 P060 P061 P062 P063 P064

Dimensions	
Covariance Parameters	2
Columns in X	1
Columns in Z per Subject	1
Subjects	58
Max Obs per Subject	2

Number of Observations	
Number of Observations Read	116
Number of Observations Used	103
Number of Observations Not Used	13

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	372.20345166	
1	3	353.43563802	0.00405036
2	1	353.05872882	0.00018448
3	1	353.04297036	0.00000045
4	1	353.04293307	0.00000000

Convergence criteria met.

Covariance Parameter Estimates		
Cov Parm	Subject	Estimate
UN(1,1)	Participant	1.1789
Residual		0.9311

Fit Statistics	
-2 Res Log Likelihood	353.0
AIC (Smaller is Better)	357.0
AICC (Smaller is Better)	357.2
BIC (Smaller is Better)	361.2

Null Model Likelihood Ratio Test		
DF	Chi-Square	Pr > ChiSq
1	19.16	<.0001

The SAS System

The Mixed Procedure

Model Information	
Data Set	WORK.DAT_LONG
Dependent Variable	ALI
Covariance Structure	Unstructured
Subject Effect	Participant
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Containment

Class Level Information		
Class	Levels	Values
time	2	1 0
Participant	58	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P015 P016 P017 P019 P020 P022 P023 P024 P025 P026 P027 P028 P029 P030 P031 P032 P033 P034 P035 P036 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P050 P051 P052 P053 P054 P055 P056 P057 P058 P059 P060 P061 P062 P063 P064

Dimensions	
Covariance Parameters	7
Columns in X	3
Columns in Z per Subject	3
Subjects	58
Max Obs per Subject	2

Number of Observations	
Number of Observations Read	116
Number of Observations Used	103
Number of Observations Not Used	13

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	372.79561165	
1	4	351.07479463	.
2	1	350.92528891	0.00050734
3	1	350.92466730	.
4	1	350.92466728	0.00000000

Convergence criteria met but final Hessian is not positive definite.

Covariance Parameter Estimates		
Cov Parm	Subject	Estimate
UN(1,1)	Participant	1.1210
UN(2,1)	Participant	-0.2091
UN(2,2)	Participant	0.9862
UN(3,1)	Participant	-0.1833
UN(3,2)	Participant	0.4702
UN(3,3)	Participant	8.002E-6
Residual		0.9539

Fit Statistics	
-2 Res Log Likelihood	350.9
AIC (Smaller is Better)	364.9
AICC (Smaller is Better)	366.1
BIC (Smaller is Better)	379.3

Null Model Likelihood Ratio Test		
DF	Chi-Square	Pr > ChiSq
6	21.87	0.0013

Solution for Fixed Effects						
Effect	time	Estimate	Standard Error	DF	t Value	Pr > |t|
Intercept		1.8966	0.1716	44	11.05	<.0001
time	1	0.000053	0.2065	44	0.00	0.9998
time	0	0	.	.	.	.

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
time	1	44	0.00	0.9998

RANDOM intercept ALI with time and LOS

The Mixed Procedure

Model Information	
Data Set	WORK.DAT_LONG
Dependent Variable	ALI
Covariance Structure	Unstructured
Subject Effect	Participant
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Containment

Class Level Information		
Class	Levels	Values
time	2	1 0
Participant	58	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P015 P016 P017 P019 P020 P022 P023 P024 P025 P026 P027 P028 P029 P030 P031 P032 P033 P034 P035 P036 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P050 P051 P052 P053 P054 P055 P056 P057 P058 P059 P060 P061 P062 P063 P064

Dimensions	
Covariance Parameters	2
Columns in X	4
Columns in Z per Subject	1
Subjects	58
Max Obs per Subject	2

Number of Observations	
Number of Observations Read	116
Number of Observations Used	103
Number of Observations Not Used	13

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	376.46559014	
1	3	358.93261388	0.00433748
2	1	358.50416666	0.00022386
3	1	358.48390970	0.00000071
4	1	358.48384779	0.00000000

Convergence criteria met.

Covariance Parameter Estimates		
Cov Parm	Subject	Estimate
UN(1,1)	Participant	1.1490
Residual		0.9495

Fit Statistics	
-2 Res Log Likelihood	358.5
AIC (Smaller is Better)	362.5
AICC (Smaller is Better)	362.6
BIC (Smaller is Better)	366.6

Null Model Likelihood Ratio Test		
DF	Chi-Square	Pr > ChiSq
1	17.98	<.0001

Solution for Fixed Effects						
Effect	time	Estimate	Standard Error	DF	t Value	Pr > |t|
Intercept		1.5239	0.3395	56	4.49	<.0001
time	1	0.000783	0.2004	44	0.00	0.9969
time	0	0	.	.	.	.
LOS		0.02898	0.02187	44	1.33	0.1919

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
time	1	44	0.00	0.9969
LOS	1	44	1.76	0.1919

RANDOM intercept ALI with time and SOOS

The Mixed Procedure

Model Information	
Data Set	WORK.DAT_LONG
Dependent Variable	ALI
Covariance Structure	Unstructured
Subject Effect	Participant
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Containment

Class Level Information		
Class	Levels	Values
time	2	1 0
Participant	58	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P015 P016 P017 P019 P020 P022 P023 P024 P025 P026 P027 P028 P029 P030 P031 P032 P033 P034 P035 P036 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P050 P051 P052 P053 P054 P055 P056 P057 P058 P059 P060 P061 P062 P063 P064

Dimensions	
Covariance Parameters	2
Columns in X	4
Columns in Z per Subject	1
Subjects	58
Max Obs per Subject	2

Number of Observations	
Number of Observations Read	116
Number of Observations Used	103
Number of Observations Not Used	13

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	374.61900551	
1	3	357.02435917	0.00497487
2	1	356.53584366	0.00028495
3	1	356.51025273	0.00000112
4	1	356.51015583	0.00000000

Convergence criteria met.

Covariance Parameter Estimates		
Cov Parm	Subject	Estimate
UN(1,1)	Participant	1.1357
Residual		0.9448

Fit Statistics	
-2 Res Log Likelihood	356.5
AIC (Smaller is Better)	360.5
AICC (Smaller is Better)	360.6
BIC (Smaller is Better)	364.6

Null Model Likelihood Ratio Test		
DF	Chi-Square	Pr > ChiSq
1	18.11	<.0001

Solution for Fixed Effects						
Effect	time	Estimate	Standard Error	DF	t Value	Pr > |t|
Intercept		1.4991	0.3138	56	4.78	<.0001
time	1	-0.00761	0.1997	44	-0.04	0.9698
time	0	0	.	.	.	.
SOOS		0.06386	0.04021	44	1.59	0.1194

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
time	1	44	0.00	0.9698
SOOS	1	44	2.52	0.1194

RANDOM intercept ALI with time and PSS

The Mixed Procedure

Model Information	
Data Set	WORK.DAT_LONG
Dependent Variable	ALI
Covariance Structure	Unstructured
Subject Effect	Participant
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Containment

Class Level Information		
Class	Levels	Values
time	2	1 0
Participant	58	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P015 P016 P017 P019 P020 P022 P023 P024 P025 P026 P027 P028 P029 P030 P031 P032 P033 P034 P035 P036 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P050 P051 P052 P053 P054 P055 P056 P057 P058 P059 P060 P061 P062 P063 P064

Dimensions	
Covariance Parameters	2
Columns in X	4
Columns in Z per Subject	1
Subjects	58
Max Obs per Subject	2

Number of Observations	
Number of Observations Read	116
Number of Observations Used	103
Number of Observations Not Used	13

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	369.67381261	
1	3	354.29761974	0.00058121
2	1	354.24533234	0.00000458
3	1	354.24493998	0.00000000

Convergence criteria met.

Covariance Parameter Estimates		
Cov Parm	Subject	Estimate
UN(1,1)	Participant	1.0387
Residual		0.9567

Fit Statistics	
-2 Res Log Likelihood	354.2
AIC (Smaller is Better)	358.2
AICC (Smaller is Better)	358.4
BIC (Smaller is Better)	362.4

Null Model Likelihood Ratio Test		
DF	Chi-Square	Pr > ChiSq
1	15.43	<.0001

Solution for Fixed Effects						
Effect	time	Estimate	Standard Error	DF	t Value	Pr > |t|
Intercept		0.6725	0.5654	56	1.19	0.2392
time	1	-0.02268	0.2006	44	-0.11	0.9105
time	0	0	.	.	.	.
PSS		0.07959	0.03473	44	2.29	0.0268

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
time	1	44	0.01	0.9105
PSS	1	44	5.25	0.0268

RANDOM intercept ALI with time LOS SOOS and PSS

The Mixed Procedure

Model Information	
Data Set	WORK.DAT_LONG
Dependent Variable	ALI
Covariance Structure	Unstructured
Subject Effect	Participant
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Containment

Class Level Information		
Class	Levels	Values
time	2	1 0
Participant	58	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P015 P016 P017 P019 P020 P022 P023 P024 P025 P026 P027 P028 P029 P030 P031 P032 P033 P034 P035 P036 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P050 P051 P052 P053 P054 P055 P056 P057 P058 P059 P060 P061 P062 P063 P064

Dimensions	
Covariance Parameters	2
Columns in X	6
Columns in Z per Subject	1
Subjects	58
Max Obs per Subject	2

Number of Observations	
Number of Observations Read	116
Number of Observations Used	103
Number of Observations Not Used	13

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	378.79141596	
1	3	363.13203629	0.00068488
2	1	363.06548470	0.00000689
3	1	363.06484971	0.00000000

Convergence criteria met.

Covariance Parameter Estimates		
Cov Parm	Subject	Estimate
UN(1,1)	Participant	1.0656
Residual		0.9560

Fit Statistics	
-2 Res Log Likelihood	363.1
AIC (Smaller is Better)	367.1
AICC (Smaller is Better)	367.2
BIC (Smaller is Better)	371.2

Null Model Likelihood Ratio Test		
DF	Chi-Square	Pr > ChiSq
1	15.73	<.0001

Solution for Fixed Effects						
Effect	time	Estimate	Standard Error	DF	t Value	Pr > |t|
Intercept		0.4604	0.6252	54	0.74	0.4647
time	1	-0.01139	0.2009	44	-0.06	0.9550
time	0	0	.	.	.	.
LOS		0.02271	0.02317	44	0.98	0.3323
SOOS		0.000858	0.05136	44	0.02	0.9867
PSS		0.07405	0.04265	44	1.74	0.0895

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
time	1	44	0.00	0.9550
LOS	1	44	0.96	0.3323
SOOS	1	44	0.00	0.9867
PSS	1	44	3.01	0.0895

RANDOM intercept ALI with time LOS and PSS

The Mixed Procedure

Model Information	
Data Set	WORK.DAT_LONG
Dependent Variable	ALI
Covariance Structure	Unstructured
Subject Effect	Participant
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Containment

Class Level Information		
Class	Levels	Values
time	2	1 0
Participant	58	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P015 P016 P017 P019 P020 P022 P023 P024 P025 P026 P027 P028 P029 P030 P031 P032 P033 P034 P035 P036 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P050 P051 P052 P053 P054 P055 P056 P057 P058 P059 P060 P061 P062 P063 P064

Dimensions	
Covariance Parameters	2
Columns in X	5
Columns in Z per Subject	1
Subjects	58
Max Obs per Subject	2

Number of Observations	
Number of Observations Read	116
Number of Observations Used	103
Number of Observations Not Used	13

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	374.45878772	
1	3	359.04611193	0.00093527
2	1	358.95753299	0.00001215
3	1	358.95644822	0.00000000

Convergence criteria met.

Covariance Parameter Estimates		
Cov Parm	Subject	Estimate
UN(1,1)	Participant	1.0381
Residual		0.9549

Fit Statistics	
-2 Res Log Likelihood	359.0
AIC (Smaller is Better)	363.0
AICC (Smaller is Better)	363.1
BIC (Smaller is Better)	367.1

Null Model Likelihood Ratio Test		
DF	Chi-Square	Pr > ChiSq
1	15.50	<.0001

Solution for Fixed Effects						
Effect	time	Estimate	Standard Error	DF	t Value	Pr > |t|
Intercept		0.4569	0.6000	55	0.76	0.4496
time	1	-0.01189	0.2007	44	-0.06	0.9530
time	0	0	.	.	.	.
LOS		0.02284	0.02137	44	1.07	0.2910
PSS		0.07451	0.03503	44	2.13	0.0391

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
time	1	44	0.00	0.9530
LOS	1	44	1.14	0.2910
PSS	1	44	4.52	0.0391