

## VAR Estimation Results:

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Endogenous variables: Members\_Per\_Event, TRAVEL, RIT, AWARDS, COMSERV, FUN, EDUCATION, MEMBERSHIP

Deterministic variables: const

Sample size: 54

Log Likelihood: -668.652

Roots of the characteristic polynomial:

0.9087 0.734 0.5552 0.5552 0.5203 0.5203 0.4501 0.3997 0.3997 0.3742 0.3742 0.2879 0.2879  
0.2341 0.2341 0.1647

Call:

VAR(y = y, p = 2, type = c("const", "trend", "both", "none"),  
exogen = analysis\_matrix, ic = c("AIC", "HQ", "SC", "FPE"))

## Estimation results for equation Members\_Per\_Event:

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Members\_Per\_Event = Members\_Per\_Event.l1 + TRAVEL.l1 + RIT.l1 + AWARDS.l1 + COMSERV.l1 +  
FUN.l1 + EDUCATION.l1 + MEMBERSHIP.l1 + Members\_Per\_Event.l2 + TRAVEL.l2 + RIT.l2 +  
AWARDS.l2 + COMSERV.l2 + FUN.l2 + EDUCATION.l2 + MEMBERSHIP.l2 + const + MEMBERSHIP +  
EDUCATION + FUN + COMSERV + AWARDS + RIT + TRAVEL

	Estimate	Std. Error	t value	Pr(> t )	
Members_Per_Event.l1	0.53601	0.22194	2.415	0.0220	*
TRAVEL.l1	0.08145	0.11796	0.691	0.4952	
RIT.l1	0.08002	0.06107	1.310	0.2000	
AWARDS.l1	-0.10207	0.07537	-1.354	0.1857	
COMSERV.l1	0.04027	0.11467	0.351	0.7279	
FUN.l1	-0.29006	0.14267	-2.033	0.0510	.
EDUCATION.l1	0.16467	0.13754	1.197	0.2406	
MEMBERSHIP.l1	0.18374	0.16122	1.140	0.2634	
Members_Per_Event.l2	0.34886	0.21332	1.635	0.1124	
TRAVEL.l2	0.01598	0.12644	0.126	0.9003	
RIT.l2	-0.01597	0.05753	-0.278	0.7832	
AWARDS.l2	-0.02299	0.07449	-0.309	0.7597	
COMSERV.l2	0.01654	0.11387	0.145	0.8855	
FUN.l2	0.15891	0.12835	1.238	0.2253	
EDUCATION.l2	-0.12688	0.13042	-0.973	0.3384	
MEMBERSHIP.l2	-0.03646	0.14208	-0.257	0.7992	
const	1.00556	1.11307	0.903	0.3735	
MEMBERSHIP	0.59273	0.30503	1.943	0.0614	.
EDUCATION	-0.38437	0.74205	-0.518	0.6083	
FUN	0.23143	0.58322	0.397	0.6943	
COMSERV	-0.17853	0.33513	-0.533	0.5982	
AWARDS	0.24738	0.27842	0.889	0.3813	
RIT	-0.15714	0.67211	-0.234	0.8167	
TRAVEL	0.11635	0.31122	0.374	0.7111	

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.832 on 30 degrees of freedom

Multiple R-Squared: 0.8813, Adjusted R-squared: 0.7903

F-statistic: 9.685 on 23 and 30 DF, p-value: 1.923e-08

## Estimation results for equation TRAVEL:

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TRAVEL = Members\_Per\_Event.l1 + TRAVEL.l1 + RIT.l1 + AWARDS.l1 + COMSERV.l1 + FUN.l1 +  
EDUCATION.l1 + MEMBERSHIP.l1 + Members\_Per\_Event.l2 + TRAVEL.l2 + RIT.l2 + AWARDS.l2 +  
COMSERV.l2 + FUN.l2 + EDUCATION.l2 + MEMBERSHIP.l2 + const + MEMBERSHIP + EDUCATION + FUN +  
COMSERV + AWARDS + RIT + TRAVEL

	Estimate	Std. Error	t value	Pr(> t )
Members_Per_Event.l1	-0.145994	0.178251	-0.819	0.4192
TRAVEL.l1	0.041050	0.094738	0.433	0.6679
RIT.l1	0.037563	0.049052	0.766	0.4498
AWARDS.l1	-0.039722	0.060532	-0.656	0.5167
COMSERV.l1	-0.044210	0.092101	-0.480	0.6347
FUN.l1	-0.147171	0.114590	-1.284	0.2089

EDUCATION.l1	0.007987	0.110462	0.072	0.9428
MEMBERSHIP.l1	0.041835	0.129484	0.323	0.7489
Members_Per_Event.l2	0.063863	0.171333	0.373	0.7120
TRAVEL.l2	-0.070965	0.101550	-0.699	0.4900
RIT.l2	0.040212	0.046209	0.870	0.3911
AWARDS.l2	-0.037675	0.059825	-0.630	0.5336
COMSERV.l2	0.042524	0.091452	0.465	0.6453
FUN.l2	-0.020490	0.103089	-0.199	0.8438
EDUCATION.l2	-0.035646	0.104750	-0.340	0.7360
MEMBERSHIP.l2	0.008676	0.114110	0.076	0.9399
const	1.435093	0.893971	1.605	0.1189
MEMBERSHIP	0.475674	0.244990	1.942	0.0616 .
EDUCATION	0.661185	0.595986	1.109	0.2761
FUN	0.319500	0.468418	0.682	0.5004
COMSERV	-0.416842	0.269158	-1.549	0.1319
AWARDS	-0.146998	0.223614	-0.657	0.5160
RIT	-0.485060	0.539812	-0.899	0.3760
TRAVEL	2.711519	0.249960	10.848	6.65e-12 ***

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.471 on 30 degrees of freedom

Multiple R-Squared: 0.8679, Adjusted R-squared: 0.7666

F-statistic: 8.57 on 23 and 30 DF, p-value: 8.244e-08

Estimation results for equation RIT:

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RIT = Members\_Per\_Event.l1 + TRAVEL.l1 + RIT.l1 + AWARDS.l1 + COMSERV.l1 + FUN.l1 +  
 EDUCATION.l1 + MEMBERSHIP.l1 + Members\_Per\_Event.l2 + TRAVEL.l2 + RIT.l2 + AWARDS.l2 +  
 COMSERV.l2 + FUN.l2 + EDUCATION.l2 + MEMBERSHIP.l2 + const + MEMBERSHIP + EDUCATION + FUN +  
 COMSERV + AWARDS + RIT + TRAVEL

	Estimate	Std. Error	t value	Pr(> t )
Members_Per_Event.l1	0.046884	0.420949	0.111	0.91206
TRAVEL.l1	-0.170333	0.223728	-0.761	0.45240
RIT.l1	0.032665	0.115840	0.282	0.77989
AWARDS.l1	-0.068076	0.142950	-0.476	0.63737
COMSERV.l1	0.096889	0.217501	0.445	0.65918
FUN.l1	-0.616425	0.270611	-2.278	0.03002 *
EDUCATION.l1	-0.093937	0.260862	-0.360	0.72130
MEMBERSHIP.l1	-0.575598	0.305782	-1.882	0.06952 .
Members_Per_Event.l2	-0.064548	0.404611	-0.160	0.87432
TRAVEL.l2	0.033060	0.239815	0.138	0.89127
RIT.l2	0.055084	0.109125	0.505	0.61741
AWARDS.l2	-0.120599	0.141279	-0.854	0.40008
COMSERV.l2	-0.208291	0.215969	-0.964	0.34253
FUN.l2	-0.738068	0.243450	-3.032	0.00498 **
EDUCATION.l2	-0.022599	0.247372	-0.091	0.92782
MEMBERSHIP.l2	-0.340523	0.269476	-1.264	0.21609
const	6.499773	2.111157	3.079	0.00442 **
MEMBERSHIP	-0.719733	0.578555	-1.244	0.22313
EDUCATION	-1.832682	1.407450	-1.302	0.20278
FUN	-1.706141	1.106192	-1.542	0.13347
COMSERV	1.657374	0.635630	2.607	0.01408 *
AWARDS	-0.002836	0.528075	-0.005	0.99575
RIT	9.122429	1.274792	7.156	5.82e-08 ***
TRAVEL	0.312607	0.590292	0.530	0.60030

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 3.474 on 30 degrees of freedom

Multiple R-Squared: 0.8873, Adjusted R-squared: 0.8008

F-statistic: 10.27 on 23 and 30 DF, p-value: 9.476e-09

Estimation results for equation AWARDS:

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AWARDS = Members\_Per\_Event.l1 + TRAVEL.l1 + RIT.l1 + AWARDS.l1 + COMSERV.l1 + FUN.l1 +

EDUCATION.l1 + MEMBERSHIP.l1 + Members\_Per\_Event.l2 + TRAVEL.l2 + RIT.l2 + AWARDS.l2 + COMSERV.l2 + FUN.l2 + EDUCATION.l2 + MEMBERSHIP.l2 + const + MEMBERSHIP + EDUCATION + FUN + COMSERV + AWARDS + RIT + TRAVEL

	Estimate	Std. Error	t value	Pr(> t )
Members_Per_Event.l1	-0.1252273	0.2282396	-0.549	0.587
TRAVEL.l1	0.0227552	0.1213059	0.188	0.852
RIT.l1	-0.0769556	0.0628085	-1.225	0.230
AWARDS.l1	0.0270190	0.0775079	0.349	0.730
COMSERV.l1	0.1191075	0.1179296	1.010	0.321
FUN.l1	0.1380490	0.1467259	0.941	0.354
EDUCATION.l1	0.0737470	0.1414403	0.521	0.606
MEMBERSHIP.l1	-0.0210653	0.1657960	-0.127	0.900
Members_Per_Event.l2	0.2863036	0.2193810	1.305	0.202
TRAVEL.l2	0.2044788	0.1300285	1.573	0.126
RIT.l2	-0.0704999	0.0591681	-1.192	0.243
AWARDS.l2	-0.0094366	0.0766016	-0.123	0.903
COMSERV.l2	0.0697252	0.1170989	0.595	0.556
FUN.l2	0.0480604	0.1319991	0.364	0.718
EDUCATION.l2	-0.2085760	0.1341258	-1.555	0.130
MEMBERSHIP.l2	0.0408007	0.1461108	0.279	0.782
const	1.6684884	1.1446747	1.458	0.155
MEMBERSHIP	0.4933966	0.3136940	1.573	0.126
EDUCATION	0.0761442	0.7631230	0.100	0.921
FUN	-0.0004478	0.5997804	-0.001	0.999
COMSERV	-0.3957154	0.3446405	-1.148	0.260
AWARDS	3.3346462	0.2863239	11.646	1.17e-12 ***
RIT	-0.3872019	0.6911957	-0.560	0.580
TRAVEL	-0.3069903	0.3200581	-0.959	0.345

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.884 on 30 degrees of freedom

Multiple R-Squared: 0.913, Adjusted R-squared: 0.8463

F-statistic: 13.69 on 23 and 30 DF, p-value: 2.562e-10

Estimation results for equation COMSERV:

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COMSERV = Members\_Per\_Event.l1 + TRAVEL.l1 + RIT.l1 + AWARDS.l1 + COMSERV.l1 + FUN.l1 + EDUCATION.l1 + MEMBERSHIP.l1 + Members\_Per\_Event.l2 + TRAVEL.l2 + RIT.l2 + AWARDS.l2 + COMSERV.l2 + FUN.l2 + EDUCATION.l2 + MEMBERSHIP.l2 + const + MEMBERSHIP + EDUCATION + FUN + COMSERV + AWARDS + RIT + TRAVEL

	Estimate	Std. Error	t value	Pr(> t )
Members_Per_Event.l1	-0.1007179	0.1566285	-0.643	0.52509
TRAVEL.l1	0.0887492	0.0832457	1.066	0.29488
RIT.l1	0.0051925	0.0431021	0.120	0.90491
AWARDS.l1	-0.0418070	0.0531895	-0.786	0.43803
COMSERV.l1	0.0743321	0.0809287	0.918	0.36569
FUN.l1	-0.1861637	0.1006901	-1.849	0.07435 .
EDUCATION.l1	0.0930538	0.0970628	0.959	0.34537
MEMBERSHIP.l1	-0.0922182	0.1137768	-0.811	0.42403
Members_Per_Event.l2	0.1243657	0.1505493	0.826	0.41528
TRAVEL.l2	-0.0810629	0.0892315	-0.908	0.37088
RIT.l2	0.0624142	0.0406038	1.537	0.13474
AWARDS.l2	-0.0671462	0.0525675	-1.277	0.21128
COMSERV.l2	-0.1595539	0.0803586	-1.986	0.05629 .
FUN.l2	-0.1014369	0.0905838	-1.120	0.27168
EDUCATION.l2	-0.0188758	0.0920433	-0.205	0.83890
MEMBERSHIP.l2	-0.0004591	0.1002679	-0.005	0.99638
const	2.4260006	0.7855283	3.088	0.00431 **
MEMBERSHIP	0.1998432	0.2152712	0.928	0.36064
EDUCATION	-0.6203235	0.5236901	-1.185	0.24551
FUN	0.1261189	0.4115969	0.306	0.76141
COMSERV	2.7655266	0.2365081	11.693	1.06e-12 ***
AWARDS	0.0821474	0.1964886	0.418	0.67887
RIT	0.2838011	0.4743302	0.598	0.55412
TRAVEL	-0.1593444	0.2196385	-0.725	0.47378

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.293 on 30 degrees of freedom

Multiple R-Squared: 0.9114, Adjusted R-squared: 0.8434

F-statistic: 13.41 on 23 and 30 DF, p-value: 3.334e-10

Estimation results for equation FUN:

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FUN = Members\_Per\_Event.l1 + TRAVEL.l1 + RIT.l1 + AWARDS.l1 + COMSERV.l1 + FUN.l1 +  
EDUCATION.l1 + MEMBERSHIP.l1 + Members\_Per\_Event.l2 + TRAVEL.l2 + RIT.l2 + AWARDS.l2 +  
COMSERV.l2 + FUN.l2 + EDUCATION.l2 + MEMBERSHIP.l2 + const + MEMBERSHIP + EDUCATION + FUN +  
COMSERV + AWARDS + RIT + TRAVEL

	Estimate	Std. Error	t value	Pr(> t )
Members_Per_Event.l1	-0.067624	0.159716	-0.423	0.6750
TRAVEL.l1	0.013955	0.084887	0.164	0.8705
RIT.l1	0.029593	0.043952	0.673	0.5059
AWARDS.l1	-0.108804	0.054238	-2.006	0.0539 .
COMSERV.l1	-0.050500	0.082524	-0.612	0.5452
FUN.l1	-0.019347	0.102675	-0.188	0.8518
EDUCATION.l1	-0.010589	0.098976	-0.107	0.9155
MEMBERSHIP.l1	0.003000	0.116020	0.026	0.9795
Members_Per_Event.l2	0.011502	0.153517	0.075	0.9408
TRAVEL.l2	-0.008502	0.090990	-0.093	0.9262
RIT.l2	-0.035126	0.041404	-0.848	0.4029
AWARDS.l2	0.036328	0.053604	0.678	0.5032
COMSERV.l2	0.050920	0.081943	0.621	0.5390
FUN.l2	-0.028453	0.092370	-0.308	0.7602
EDUCATION.l2	-0.133172	0.093858	-1.419	0.1662
MEMBERSHIP.l2	-0.075420	0.102245	-0.738	0.4665
const	0.903022	0.801013	1.127	0.2685
MEMBERSHIP	-0.306746	0.219515	-1.397	0.1725
EDUCATION	0.724532	0.534013	1.357	0.1850
FUN	3.294966	0.419711	7.851	9.24e-09 ***
COMSERV	0.163706	0.241170	0.679	0.5025
AWARDS	0.272725	0.200362	1.361	0.1836
RIT	0.007872	0.483681	0.016	0.9871
TRAVEL	-0.109934	0.223968	-0.491	0.6271

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.318 on 30 degrees of freedom

Multiple R-Squared: 0.8756, Adjusted R-squared: 0.7802

F-statistic: 9.178 on 23 and 30 DF, p-value: 3.663e-08

Estimation results for equation EDUCATION:

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EDUCATION = Members\_Per\_Event.l1 + TRAVEL.l1 + RIT.l1 + AWARDS.l1 + COMSERV.l1 + FUN.l1 +  
EDUCATION.l1 + MEMBERSHIP.l1 + Members\_Per\_Event.l2 + TRAVEL.l2 + RIT.l2 + AWARDS.l2 +  
COMSERV.l2 + FUN.l2 + EDUCATION.l2 + MEMBERSHIP.l2 + const + MEMBERSHIP + EDUCATION + FUN +  
COMSERV + AWARDS + RIT + TRAVEL

	Estimate	Std. Error	t value	Pr(> t )
Members_Per_Event.l1	0.154506	0.219676	0.703	0.48727
TRAVEL.l1	0.062557	0.116755	0.536	0.59605
RIT.l1	-0.120949	0.060452	-2.001	0.05454 .
AWARDS.l1	-0.105355	0.074600	-1.412	0.16816
COMSERV.l1	0.143391	0.113505	1.263	0.21621
FUN.l1	0.156179	0.141221	1.106	0.27755
EDUCATION.l1	0.073315	0.136134	0.539	0.59417
MEMBERSHIP.l1	-0.150141	0.159576	-0.941	0.35428
Members_Per_Event.l2	-0.104892	0.211150	-0.497	0.62297
TRAVEL.l2	-0.055793	0.125150	-0.446	0.65894
RIT.l2	-0.135320	0.056948	-2.376	0.02408 *
AWARDS.l2	-0.029617	0.073728	-0.402	0.69075
COMSERV.l2	0.002239	0.112706	0.020	0.98428
FUN.l2	-0.059547	0.127047	-0.469	0.64267

EDUCATION.12	0.233040	0.129094	1.805	0.08109	.
MEMBERSHIP.12	-0.004249	0.140629	-0.030	0.97610	
const	2.078471	1.101729	1.887	0.06893	.
MEMBERSHIP	-0.561729	0.301925	-1.860	0.07264	.
EDUCATION	4.421718	0.734492	6.020	1.32e-06	***
FUN	0.663964	0.577278	1.150	0.25916	
COMSERV	0.934409	0.331710	2.817	0.00849	**
AWARDS	0.162303	0.275582	0.589	0.56031	
RIT	-1.091658	0.665263	-1.641	0.11125	
TRAVEL	0.006870	0.308050	0.022	0.98235	

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.813 on 30 degrees of freedom

Multiple R-Squared: 0.9525, Adjusted R-squared: 0.9161

F-statistic: 26.17 on 23 and 30 DF, p-value: 4.412e-14

Estimation results for equation MEMBERSHIP:

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MEMBERSHIP = Members\_Per\_Event.11 + TRAVEL.11 + RIT.11 + AWARDS.11 + COMSERV.11 + FUN.11 + EDUCATION.11 + MEMBERSHIP.11 + Members\_Per\_Event.12 + TRAVEL.12 + RIT.12 + AWARDS.12 + COMSERV.12 + FUN.12 + EDUCATION.12 + MEMBERSHIP.12 + const + MEMBERSHIP + EDUCATION + FUN + COMSERV + AWARDS + RIT + TRAVEL

	Estimate	Std. Error	t value	Pr(> t )	
Members_Per_Event.11	0.0730003	0.1193921	0.611	0.54552	
TRAVEL.11	0.0515514	0.0634551	0.812	0.42296	
RIT.11	0.0163471	0.0328551	0.498	0.62243	
AWARDS.11	-0.0244797	0.0405444	-0.604	0.55053	
COMSERV.11	0.0110650	0.0616890	0.179	0.85886	
FUN.11	-0.0962164	0.0767523	-1.254	0.21967	
EDUCATION.11	-0.0577211	0.0739874	-0.780	0.44142	
MEMBERSHIP.11	-0.0190693	0.0867279	-0.220	0.82746	
Members_Per_Event.12	-0.0008202	0.1147582	-0.007	0.99434	
TRAVEL.12	0.0144104	0.0680179	0.212	0.83365	
RIT.12	-0.0102544	0.0309508	-0.331	0.74271	
AWARDS.12	-0.0144260	0.0400703	-0.360	0.72136	
COMSERV.12	-0.0368885	0.0612544	-0.602	0.55155	
FUN.12	0.0070169	0.0690487	0.102	0.91973	
EDUCATION.12	0.0283534	0.0701612	0.404	0.68899	
MEMBERSHIP.12	-0.0069227	0.0764306	-0.091	0.92843	
const	1.7108127	0.5987795	2.857	0.00769	**
MEMBERSHIP	2.0581892	0.1640933	12.543	1.83e-13	***
EDUCATION	-0.4154967	0.3991897	-1.041	0.30626	
FUN	-0.0399060	0.3137452	-0.127	0.89964	
COMSERV	0.2788985	0.1802815	1.547	0.13234	
AWARDS	0.1088880	0.1497760	0.727	0.47286	
RIT	0.3290865	0.3615645	0.910	0.36999	
TRAVEL	-0.3142296	0.1674224	-1.877	0.07029	.

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9853 on 30 degrees of freedom

Multiple R-Squared: 0.9168, Adjusted R-squared: 0.853

F-statistic: 14.37 on 23 and 30 DF, p-value: 1.374e-10