

State of Wyoming Succession Planning Report Factor Analysis: Combined Agency Results

The FACTOR Procedure
Initial Factor Method: Maximum Likelihood

Prior Communality Estimates: SMC

EVAL	MISSION	OBJECTIVE	SUPERVISOR	OTHER_ PERSON	PAY_IN	PAY_EX	INFORMED
0.50289539	0.54803970	0.48366704	0.53096422	0.43540557	0.43092513	0.40716696	0.51135915
REPRISAL	ADVANCE	OVERALL	SPEAK	PROUD	BEST_JOB	GREAT	DIFFERENT
0.49945590	0.41855238	0.71373526	0.80488623	0.81252072	0.73558263	0.79505598	0.32838797
POLICY	BUCK_RULE	EXPECT	INCOMPAT	UNNECESSARY	VAGUE	NO_TIME	WORKLOAD
0.48050114	0.45062465	0.32471089	0.39822381	0.42589400	0.47973764	0.61206016	0.59997045
OTHER_ DUTIES	TRAIN	ADV_ PROGRAM	COWORKER	INTERN	TOMORROW		
0.39126389	0.65224558	0.63052778	0.56982084	0.57446705	0.10201570		

Preliminary Eigenvalues: Total = 42.0174173 Average = 1.40058058

	Eigenvalue	Difference	Proportion	Cumulative
1	25.6643181	19.4031066	0.6108	0.6108
2	6.2612115	1.3597066	0.1490	0.7598
3	4.9015049	2.6304675	0.1167	0.8765
4	2.2710374	0.0812698	0.0540	0.9305
5	2.1897676	0.5720655	0.0521	0.9826
6	1.6177020	0.4195548	0.0385	1.0211
7	1.1981472	0.3855027	0.0285	1.0497
8	0.8126445	0.3607060	0.0193	1.0690
9	0.4519385	0.1282566	0.0108	1.0797
10	0.3236819	0.0582602	0.0077	1.0875
11	0.2654216	0.1084156	0.0063	1.0938
12	0.1570060	0.0892099	0.0037	1.0975
13	0.0677961	0.0507877	0.0016	1.0991
14	0.0170084	0.0168271	0.0004	1.0995
15	0.0001814	0.0468429	0.0000	1.0995
16	-0.0466615	0.0324466	-0.0011	1.0984
17	-0.0791081	0.0167725	-0.0019	1.0965
18	-0.0958806	0.0432190	-0.0023	1.0943
19	-0.1390997	0.0565801	-0.0033	1.0909
20	-0.1956798	0.0139600	-0.0047	1.0863
21	-0.2096398	0.0351573	-0.0050	1.0813
22	-0.2447971	0.0835672	-0.0058	1.0755
23	-0.3283644	0.0137316	-0.0078	1.0677
24	-0.3420960	0.0109251	-0.0081	1.0595
25	-0.3530211	0.0062284	-0.0084	1.0511
26	-0.3592495	0.0230577	-0.0086	1.0426
27	-0.3823072	0.0498196	-0.0091	1.0335
28	-0.4321268	0.0485845	-0.0103	1.0232

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Preliminary Eigenvalues: Total = 42.0174173 Average = 1.40058058

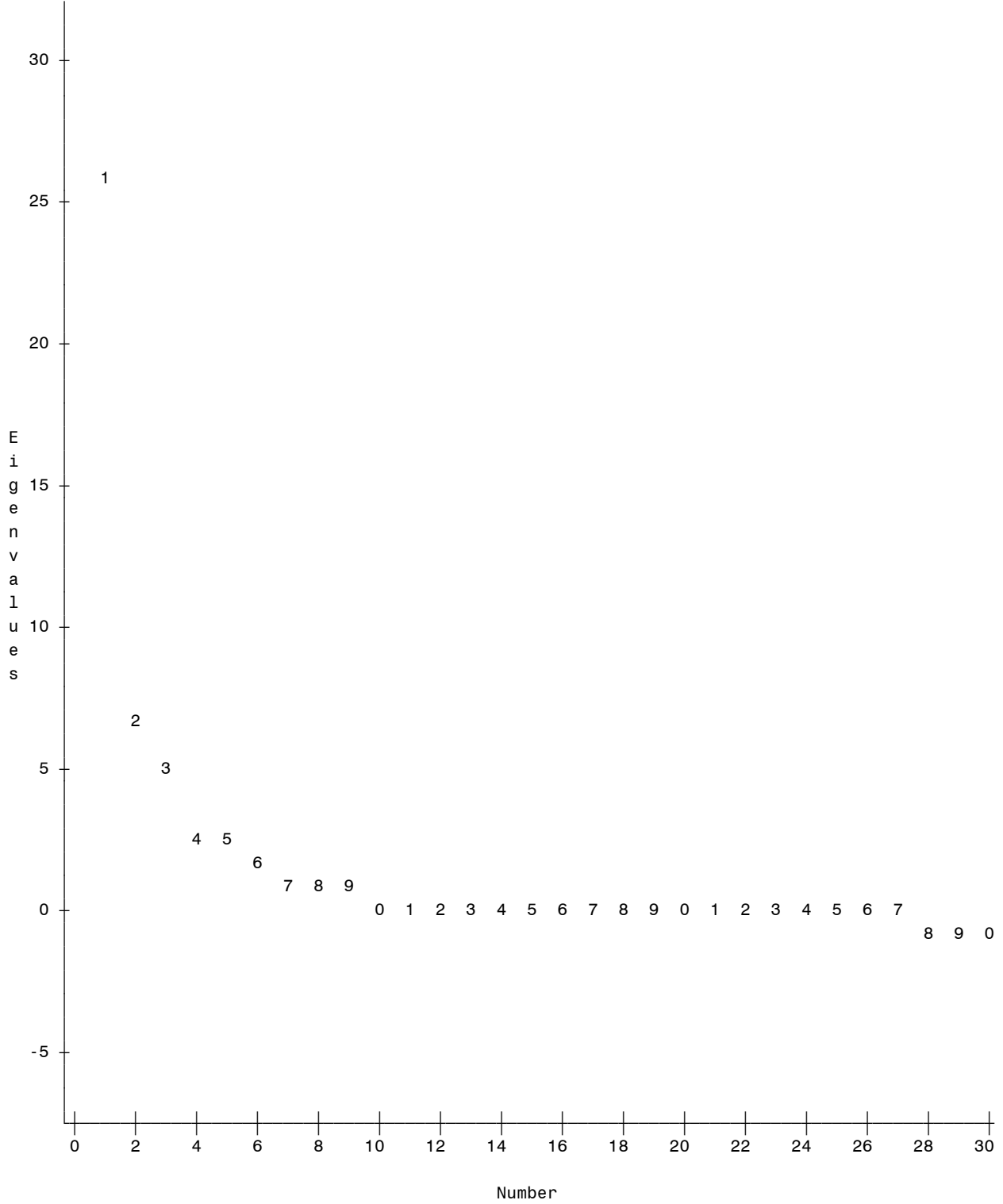
	Eigenvalue	Difference	Proportion	Cumulative
29	-0.4807113	0.0124956	-0.0114	1.0117
30	-0.4932069		-0.0117	1.0000

3 factors will be retained by the NFACTOR criterion.

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Initial Factor Method: Maximum Likelihood

Scree Plot of Eigenvalues



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The FACTOR Procedure
Initial Factor Method: Maximum Likelihood

Iteration	Criterion	Ridge	Change	Communalities					
1	3.8126174	0.0000	0.3396	0.41948	0.48613	0.38048	0.42684	0.30834	0.11969
				0.06759	0.43254	0.42836	0.26390	0.71622	0.77324
				0.75742	0.73359	0.78326	0.29512	0.42501	0.32486
				0.23393	0.36394	0.38431	0.39558	0.39268	0.36735
2	3.7312866	0.0000	0.1176	0.43509	0.64435	0.62141	0.42760	0.44477	0.06425
				0.41947	0.48395	0.38171	0.42726	0.30759	0.11361
				0.05613	0.43407	0.43156	0.26329	0.71648	0.76806
				0.76266	0.73421	0.78829	0.33622	0.47777	0.38257
3	3.7147448	0.0000	0.0445	0.24907	0.40532	0.43354	0.44786	0.27512	0.25499
				0.42764	0.69651	0.66254	0.38150	0.39439	0.05592
				0.41949	0.48316	0.38154	0.42713	0.30823	0.11194
				0.05030	0.43304	0.43181	0.26008	0.71667	0.76846
4	3.7116306	0.0000	0.0180	0.76180	0.73413	0.78876	0.35005	0.49672	0.40580
				0.25650	0.41927	0.45180	0.46207	0.23128	0.21050
				0.41778	0.72394	0.69270	0.34740	0.36351	0.04998
				0.41970	0.48303	0.38161	0.42728	0.30854	0.11163
5	3.7110492	0.0000	0.0086	0.04850	0.43250	0.43171	0.25875	0.71673	0.76768
				0.76171	0.73407	0.78880	0.35314	0.50165	0.41254
				0.25841	0.42182	0.45628	0.46449	0.22029	0.19978
				0.41122	0.73954	0.70598	0.32936	0.34624	0.04821
6	3.7109490	0.0000	0.0036	0.41983	0.48309	0.38172	0.42741	0.30870	0.11159
				0.04802	0.43239	0.43169	0.25836	0.71679	0.76749
				0.76138	0.73402	0.78881	0.35378	0.50297	0.41426
				0.25882	0.42223	0.45727	0.46480	0.21791	0.19741
7	3.7109326	0.0000	0.0015	0.40809	0.74567	0.71258	0.32075	0.33826	0.04781
				0.41991	0.48314	0.38178	0.42747	0.30877	0.11160
				0.04790	0.43237	0.43170	0.25828	0.71684	0.76735
				0.76128	0.73401	0.78880	0.35393	0.50333	0.41473
8	3.7109300	0.0000	0.0006	0.25890	0.42229	0.45750	0.46482	0.21739	0.19690
				0.40666	0.74853	0.71497	0.31711	0.33482	0.04773
				0.41994	0.48316	0.38180	0.42750	0.30880	0.11161
				0.04786	0.43237	0.43171	0.25825	0.71685	0.76730
9	3.7109300	0.0000	0.0006	0.76122	0.73400	0.78880	0.35396	0.50344	0.41485
				0.25892	0.42230	0.45755	0.46481	0.21727	0.19679
				0.40610	0.74954	0.71608	0.31560	0.33343	0.04771
				0.41996	0.48318	0.38182	0.42752	0.30882	0.11161
10	3.7109300	0.0000	0.0006	0.04785	0.43237	0.43171	0.25824	0.71686	0.76728
				0.76120	0.73400	0.78880	0.35397	0.50347	0.41489
				0.25892	0.42229	0.45757	0.46481	0.21725	0.19676
				0.40586	0.75001	0.71646	0.31500	0.33286	0.04771

Convergence criterion satisfied.

State of Wyoming Succession Planning Report Factor Analysis: Combined Agency Results

The FACTOR Procedure
Initial Factor Method: Maximum Likelihood

Significance Tests Based on 916 Observations

Test	DF	Chi-Square	Pr > ChiSq
HO: No common factors	435	14754.5222	<.0001
HA: At least one common factor			
HO: 3 Factors are sufficient	348	3347.8773	<.0001
HA: More factors are needed			

Chi-Square without Bartlett's Correction	3395.5010
Akaike's Information Criterion	2699.5010
Schwarz's Bayesian Criterion	1022.1353
Tucker and Lewis's Reliability Coefficient	0.7381

Squared Canonical Correlations

Factor1	Factor2	Factor3
0.95813332	0.87411609	0.80006677

Eigenvalues of the Weighted Reduced Correlation Matrix: Total = 33.8308405 Average = 1.12769468

	Eigenvalue	Difference	Proportion	Cumulative
1	22.8853448	15.9415180	0.6765	0.6765
2	6.9438268	2.9421569	0.2053	0.8817
3	4.0016699	2.4711162	0.1183	1.0000
4	1.5305536	0.3730827	0.0452	1.0452
5	1.1574710	0.3199283	0.0342	1.0795
6	0.8375426	0.1059410	0.0248	1.1042
7	0.7316016	0.2262424	0.0216	1.1258
8	0.5053592	0.1331949	0.0149	1.1408
9	0.3721643	0.1555653	0.0110	1.1518
10	0.2165990	0.0395673	0.0064	1.1582
11	0.1770317	0.1263580	0.0052	1.1634
12	0.0506737	0.0396650	0.0015	1.1649
13	0.0110087	0.0319604	0.0003	1.1652
14	-0.0209517	0.0323714	-0.0006	1.1646
15	-0.0533231	0.0043895	-0.0016	1.1630
16	-0.0577126	0.0772059	-0.0017	1.1613
17	-0.1349185	0.0352140	-0.0040	1.1573
18	-0.1701325	0.0402274	-0.0050	1.1523
19	-0.2103599	0.0086499	-0.0062	1.1461
20	-0.2190098	0.0610696	-0.0065	1.1396
21	-0.2800793	0.0508068	-0.0083	1.1313
22	-0.3308861	0.0347929	-0.0098	1.1216
23	-0.3656790	0.0388431	-0.0108	1.1108
24	-0.4045222	0.0160916	-0.0120	1.0988
25	-0.4206138	0.0353241	-0.0124	1.0864

State of Wyoming Succession Planning Report Factor Analysis: Combined Agency Results

The FACTOR Procedure
Initial Factor Method: Maximum Likelihood

Eigenvalues of the Weighted Reduced Correlation Matrix: Total = 33.8308405 Average = 1.12769468

	Eigenvalue	Difference	Proportion	Cumulative
26	-0.4559379	0.0676065	-0.0135	1.0729
27	-0.5235443	0.0767930	-0.0155	1.0574
28	-0.6003373	0.0243198	-0.0177	1.0397
29	-0.6246570	0.0926842	-0.0185	1.0212
30	-0.7173413		-0.0212	1.0000

Factor Pattern

		Factor1	Factor2	Factor3
EVAL	EVAL	64 *	-9	1
MISSION	MISSION	66 *	0	22
OBJECTIVE	OBJECTIVE	61 *	-6	10
SUPERVISOR	SUPERVISOR	64 *	-3	10
OTHER_PERSON	OTHER_PERSON	54 *	-3	14
PAY_IN	PAY_IN	32	-8	-1
PAY_EX	PAY_EX	14	-13	-11
INFORMED	INFORMED	65 *	-10	-7
REPRISAL	REPRISAL	65 *	-7	-6
ADVANCE	ADVANCE	46 *	-14	-16
OVERALL	OVERALL	84 *	-9	7
SPEAK	SPEAK	85 *	-1	21
PROUD	PROUD	85 *	-3	20
BEST_JOB	BEST_JOB	85 *	-5	11
GREAT	GREAT	88 *	-3	9
DIFFERENT	DIFFERENT	-29	18	49 *
POLICY	POLICY	-44 *	7	55 *
BUCK_RULE	BUCK_RULE	-39	2	52 *
EXPECT	EXPECT	46 *	-6	-20
INCOMPAT	INCOMPAT	-39	9	51 *
UNNECESSARY	UNNECESSARY	-45 *	6	50 *
VAGUE	VAGUE	-45 *	13	50 *
NO_TIME	NO_TIME	-22	11	39
WORKLOAD	WORKLOAD	-22	7	38
OTHER_DUTIES	OTHER_DUTIES	18	60 *	-13
TRAIN	TRAIN	20	84 *	-7
ADV_PROGRAM	ADV_PROGRAM	20	82 *	-5
COWORKER	COWORKER	18	53 *	-5
INTERN	INTERN	19	54 *	-5
TOMORROW	TOMORROW	-7	6	20

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The FACTOR Procedure
Initial Factor Method: Maximum Likelihood

Variance Explained by Each Factor

Factor	Weighted	Unweighted
Factor1	22.8853448	8.23513104
Factor2	6.9438268	2.48424732
Factor3	4.0016699	2.20941692

Final Communality Estimates and Variable Weights
Total Communality: Weighted = 33.830841 Unweighted = 12.928795

Variable	Communality	Weight
EVAL	0.41996566	1.72401840
MISSION	0.48318144	1.93489841
OBJECTIVE	0.38182272	1.61764601
SUPERVISOR	0.42752107	1.74677396
OTHER_PERSON	0.30882299	1.44679594
PAY_IN	0.11161314	1.12563350
PAY_EX	0.04784975	1.05025835
INFORMED	0.43237169	1.76171150
REPRISAL	0.43171476	1.75967348
ADVANCE	0.25823970	1.34814861
OVERALL	0.71686336	3.53183549
SPEAK	0.76727104	4.29695441
PROUD	0.76118803	4.18751874
BEST_JOB	0.73399559	3.75935764
GREAT	0.78879794	4.73482433
DIFFERENT	0.35396782	1.54790668
POLICY	0.50347689	2.01397360
BUCK_RULE	0.41490365	1.70909100
EXPECT	0.25892134	1.34938282
INCOMPAT	0.42229436	1.73098571
UNNECESSARY	0.45757243	1.84355203
VAGUE	0.46480662	1.86848702
NO_TIME	0.21724066	1.27754181
WORKLOAD	0.19675158	1.24495527
OTHER_DUTIES	0.40581002	1.68310349
TRAIN	0.75007635	4.00010834
ADV_PROGRAM	0.71655378	3.52681379
COWORKER	0.31480372	1.45984849
INTERN	0.33268972	1.49894396
TOMORROW	0.04770745	1.05009767

State of Wyoming Succession Planning Report Factor Analysis: Combined Agency Results

The FACTOR Procedure
Rotation Method: Oblimin (tau = 0)

Oblique Transformation Matrix

	1	2	3
1	0.90765747	-0.1427634	0.11493158
2	-0.1794186	0.12716018	0.99172211
3	0.63860096	1.09564722	-0.1740276

Inter-Factor Correlations

	Factor1	Factor2	Factor3
Factor1	100 *	-43 *	15
Factor2	-43 *	100 *	0
Factor3	15	0	100 *

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State of Wyoming Succession Planning Report Factor Analysis: Combined Agency Results

The FACTOR Procedure
Rotation Method: Oblimin (tau = 0)

Rotated Factor Pattern (Standardized Regression Coefficients)

		Factor1	Factor2	Factor3
EVAL	EVAL	61 *	-9	-2
MISSION	MISSION	74 *	15	3
OBJECTIVE	OBJECTIVE	63 *	2	-1
SUPERVISOR	SUPERVISOR	66 *	2	3
OTHER_PERSON	OTHER_PERSON	58 *	7	1
PAY_IN	PAY_IN	31	-6	-4
PAY_EX	PAY_EX	7	-16	-9
INFORMED	INFORMED	56 *	-18	-1
REPRISAL	REPRISAL	57 *	-17	2
ADVANCE	ADVANCE	35	-26	-5
OVERALL	OVERALL	82 *	-6	0
SPEAK	SPEAK	91 *	11	5
PROUD	PROUD	90 *	9	4
BEST_JOB	BEST_JOB	85 *	-1	3
GREAT	GREAT	86 *	-4	6
DIFFERENT	DIFFERENT	1	60 *	6
POLICY	POLICY	-7	67 *	-7
BUCK_RULE	BUCK_RULE	-2	62 *	-11
EXPECT	EXPECT	30	-29	3
INCOMPAT	INCOMPAT	-5	63 *	-4
UNNECESSARY	UNNECESSARY	-9	62 *	-8
VAGUE	VAGUE	-12	62 *	-1
NO_TIME	NO_TIME	3	48 *	2
WORKLOAD	WORKLOAD	3	45 *	-3
OTHER_DUTIES	OTHER_DUTIES	-2	-9	63 *
TRAIN	TRAIN	-2	1	87 *
ADV_PROGRAM	ADV_PROGRAM	1	3	85 *
COWORKER	COWORKER	4	-1	55 *
INTERN	INTERN	5	-1	57 *
TOMORROW	TOMORROW	5	24	1

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Reference Axis Correlations

	Factor1	Factor2	Factor3
Factor1	100 *	44 *	-16
Factor2	44 *	100 *	-7
Factor3	-16	-7	100 *

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State of Wyoming Succession Planning Report Factor Analysis: Combined Agency Results

The FACTOR Procedure
 Rotation Method: Oblimin (tau = 0)

Reference Structure (Semipartial Correlations)

		Factor1	Factor2	Factor3
EVAL	EVAL	54 *	-8	-2
MISSION	MISSION	66 *	13	3
OBJECTIVE	OBJECTIVE	56 *	2	-1
SUPERVISOR	SUPERVISOR	58 *	2	3
OTHER_PERSON	OTHER_PERSON	52 *	7	1
PAY_IN	PAY_IN	27	-6	-4
PAY_EX	PAY_EX	7	-14	-9
INFORMED	INFORMED	50 *	-16	-1
REPRISAL	REPRISAL	50 *	-15	2
ADVANCE	ADVANCE	31	-23	-5
OVERALL	OVERALL	73 *	-5	0
SPEAK	SPEAK	81 *	10	5
PROUD	PROUD	80 *	8	3
BEST_JOB	BEST_JOB	76 *	-1	3
GREAT	GREAT	77 *	-3	6
DIFFERENT	DIFFERENT	1	54 *	6
POLICY	POLICY	-6	61 *	-7
BUCK_RULE	BUCK_RULE	-2	56 *	-11
EXPECT	EXPECT	27	-26	3
INCOMPAT	INCOMPAT	-4	56 *	-4
UNNECESSARY	UNNECESSARY	-8	56 *	-8
VAGUE	VAGUE	-10	56 *	-1
NO_TIME	NO_TIME	3	43 *	2
WORKLOAD	WORKLOAD	2	41 *	-3
OTHER_DUTIES	OTHER_DUTIES	-2	-8	63 *
TRAIN	TRAIN	-1	1	86 *
ADV_PROGRAM	ADV_PROGRAM	1	2	83 *
COWORKER	COWORKER	3	-1	55 *
INTERN	INTERN	4	-1	56 *
TOMORROW	TOMORROW	5	21	1

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Variance Explained by Each Factor Eliminating Other Factors

Factor	Weighted	Unweighted
Factor1	16.3860095	5.40845777
Factor2	4.3512667	2.56120112
Factor3	7.0621032	2.48860588

State of Wyoming Succession Planning Report Factor Analysis: Combined Agency Results

The FACTOR Procedure
 Rotation Method: Oblimin (tau = 0)

Factor Structure (Correlations)

		Factor1	Factor2	Factor3
EVAL	EVAL	64 *	-35	7
MISSION	MISSION	68 *	-17	14
OBJECTIVE	OBJECTIVE	62 *	-25	8
SUPERVISOR	SUPERVISOR	65 *	-27	12
OTHER_PERSON	OTHER_PERSON	55 *	-18	9
PAY_IN	PAY_IN	33	-19	0
PAY_EX	PAY_EX	13	-19	-8
INFORMED	INFORMED	64 *	-43 *	7
REPRISAL	REPRISAL	64 *	-41 *	10
ADVANCE	ADVANCE	45 *	-40 *	0
OVERALL	OVERALL	84 *	-41 *	12
SPEAK	SPEAK	87 *	-28	18
PROUD	PROUD	87 *	-30	17
BEST_JOB	BEST_JOB	86 *	-37	15
GREAT	GREAT	89 *	-41 *	18
DIFFERENT	DIFFERENT	-24	59 *	7
POLICY	POLICY	-37	70 *	-8
BUCK_RULE	BUCK_RULE	-31	63 *	-12
EXPECT	EXPECT	43 *	-43 *	7
INCOMPAT	INCOMPAT	-33	65 *	-5
UNNECESSARY	UNNECESSARY	-38	66 *	-9
VAGUE	VAGUE	-39	67 *	-3
NO_TIME	NO_TIME	-18	46 *	2
WORKLOAD	WORKLOAD	-17	44 *	-2
OTHER_DUTIES	OTHER_DUTIES	11	-8	63 *
TRAIN	TRAIN	11	1	87 *
ADV_PROGRAM	ADV_PROGRAM	12	2	85 *
COWORKER	COWORKER	12	-2	56 *
INTERN	INTERN	13	-3	57 *
TOMORROW	TOMORROW	-5	21	2

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Variance Explained by Each Factor Ignoring Other Factors

Factor	Weighted	Unweighted
Factor1	22.3919407	7.87483143
Factor2	9.5427448	4.76177929
Factor3	7.8983612	2.75712544

State of Wyoming Succession Planning Report Factor Analysis: Combined Agency Results

The FACTOR Procedure
Rotation Method: Oblimin (tau = 0)

Final Commuality Estimates and Variable Weights
Total Commuality: Weighted = 33.830841 Unweighted = 12.928795

Variable	Commuality	Weight
EVAL	0.41996566	1.72401840
MISSION	0.48318144	1.93489841
OBJECTIVE	0.38182272	1.61764601
SUPERVISOR	0.42752107	1.74677396
OTHER_PERSON	0.30882299	1.44679594
PAY_IN	0.11161314	1.12563350
PAY_EX	0.04784975	1.05025835
INFORMED	0.43237169	1.76171150
REPRISAL	0.43171476	1.75967348
ADVANCE	0.25823970	1.34814861
OVERALL	0.71686336	3.53183549
SPEAK	0.76727104	4.29695441
PROUD	0.76118803	4.18751874
BEST_JOB	0.73399559	3.75935764
GREAT	0.78879794	4.73482433
DIFFERENT	0.35396782	1.54790668
POLICY	0.50347689	2.01397360
BUCK_RULE	0.41490365	1.70909100
EXPECT	0.25892134	1.34938282
INCOMPAT	0.42229436	1.73098571
UNNECESSARY	0.45757243	1.84355203
VAGUE	0.46480662	1.86848702
NO_TIME	0.21724066	1.27754181
WORKLOAD	0.19675158	1.24495527
OTHER_DUTIES	0.40581002	1.68310349
TRAIN	0.75007635	4.00010834
ADV_PROGRAM	0.71655378	3.52681379
COWORKER	0.31480372	1.45984849
INTERN	0.33268972	1.49894396
TOMORROW	0.04770745	1.05009767

State of Wyoming Succession Planning Report Logistic Regression Analysis: Combined Agency Results

The LOGISTIC Procedure

Model Information

Data Set	SUCC.DATA_COMPLETE	
Response Variable	LEAVE	LEAVE
Number of Response Levels	2	
Weight Variable	wt	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	904
Number of Observations Used	904
Sum of Weights Read	1231.481
Sum of Weights Used	1231.481

Response Profile

Ordered Value	LEAVE	Total Frequency	Total Weight
1	Yes	93	126.5118
2	No	811	1104.9689

Probability modeled is LEAVE='Yes'.

Stepwise Selection Procedure

Class Level Information

Class	Value	Design Variables											
Sex	Females	1											
	Males	-1											
RESPECT	1	1											
	2	-1											
DEPENDENTS	1	1	0										
	2	0	1										
	88	-1	-1										
INCOME	1	1	0	0	0	0	0	0	0	0	0	0	0
	2	0	1	0	0	0	0	0	0	0	0	0	0
	3	0	0	1	0	0	0	0	0	0	0	0	0
	4	0	0	0	1	0	0	0	0	0	0	0	0
	5	0	0	0	0	1	0	0	0	0	0	0	0
	6	0	0	0	0	0	1	0	0	0	0	0	0
	7	0	0	0	0	0	0	1	0	0	0	0	0
	8	0	0	0	0	0	0	0	1	0	0	0	0
	9	0	0	0	0	0	0	0	0	1	0	0	0
	10	0	0	0	0	0	0	0	0	0	1	0	0

State of Wyoming Succession Planning Report Logistic Regression Analysis: Combined Agency Results

The LOGISTIC Procedure

Step 0. Intercept entered:

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

-2 Log L = 815.347

Residual Chi-Square Test

Chi-Square	DF	Pr > ChiSq
257.1725	45	<.0001

Step 1. Effect social entered:

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	817.347	743.821
SC	822.154	753.434
-2 Log L	815.347	739.821

R-Square 0.0802 Max-rescaled R-Square 0.1349

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	75.5266	1	<.0001
Score	80.4796	1	<.0001
Wald	71.5368	1	<.0001

Residual Chi-Square Test

Chi-Square	DF	Pr > ChiSq
165.7248	44	<.0001

State of Wyoming Succession Planning Report Logistic Regression Analysis: Combined Agency Results

The LOGISTIC Procedure

NOTE: No effects for the model in Step 1 are removed.

Step 2. Effect AGE entered:

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	817.347	705.057
SC	822.154	719.478
-2 Log L	815.347	699.057

R-Square	0.1207	Max-rescaled R-Square	0.2031
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Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	116.2900	2	<.0001
Score	118.6789	2	<.0001
Wald	98.6876	2	<.0001

Residual Chi-Square Test

Chi-Square	DF	Pr > ChiSq
124.1570	43	<.0001

NOTE: No effects for the model in Step 2 are removed.

Step 3. Effect constraint entered:

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

State of Wyoming Succession Planning Report Logistic Regression Analysis: Combined Agency Results

The LOGISTIC Procedure

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	817.347	662.902
SC	822.154	682.129
-2 Log L	815.347	654.902

R-Square 0.1626 Max-rescaled R-Square 0.2737

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	160.4453	3	<.0001
Score	150.0146	3	<.0001
Wald	119.5127	3	<.0001

Residual Chi-Square Test

Chi-Square	DF	Pr > ChiSq
86.7876	42	<.0001

NOTE: No effects for the model in Step 3 are removed.

Step 4. Effect PERSONAL entered:

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	817.347	652.087
SC	822.154	676.121
-2 Log L	815.347	642.087

State of Wyoming Succession Planning Report Logistic Regression Analysis: Combined Agency Results

The LOGISTIC Procedure

R-Square 0.1744 Max-rescaled R-Square 0.2935

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	173.2605	4	<.0001
Score	161.4302	4	<.0001
Wald	125.8677	4	<.0001

Residual Chi-Square Test

Chi-Square	DF	Pr > ChiSq
73.0142	41	0.0015

NOTE: No effects for the model in Step 4 are removed.

Step 5. Effect BENEFIT entered:

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	817.347	638.274
SC	822.154	667.115
-2 Log L	815.347	626.274

R-Square 0.1887 Max-rescaled R-Square 0.3176

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	189.0733	5	<.0001
Score	176.9760	5	<.0001
Wald	131.5965	5	<.0001

State of Wyoming Succession Planning Report Logistic Regression Analysis: Combined Agency Results

The LOGISTIC Procedure

Residual Chi-Square Test

Chi-Square	DF	Pr > ChiSq
58.9662	40	0.0270

NOTE: No effects for the model in Step 5 are removed.

Step 6. Effect PAY_EX entered:

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	817.347	629.764
SC	822.154	663.412
-2 Log L	815.347	615.764

R-Square	0.1981	Max-rescaled R-Square	0.3334
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Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	199.5828	6	<.0001
Score	182.9395	6	<.0001
Wald	135.1305	6	<.0001

Residual Chi-Square Test

Chi-Square	DF	Pr > ChiSq
49.6739	39	0.1176

NOTE: No effects for the model in Step 6 are removed.

Step 7. Effect RESPECT entered:

State of Wyoming Succession Planning Report Logistic Regression Analysis: Combined Agency Results

The LOGISTIC Procedure

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	817.347	627.882
SC	822.154	666.336
-2 Log L	815.347	611.882

R-Square	0.2015	Max-rescaled R-Square	0.3392
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Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	203.4655	7	<.0001
Score	187.3361	7	<.0001
Wald	137.1760	7	<.0001

Residual Chi-Square Test

Chi-Square	DF	Pr > ChiSq
45.6265	38	0.1847

NOTE: No effects for the model in Step 7 are removed.

Step 8. Effect STAFF entered:

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

State of Wyoming Succession Planning Report Logistic Regression Analysis: Combined Agency Results

The LOGISTIC Procedure

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	817.347	626.997
SC	822.154	670.258
-2 Log L	815.347	608.997

R-Square 0.2041 Max-rescaled R-Square 0.3435

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	206.3503	8	<.0001
Score	189.2908	8	<.0001
Wald	137.8884	8	<.0001

Residual Chi-Square Test

Chi-Square	DF	Pr > ChiSq
43.0454	37	0.2283

Step 9. Effect STAFF is removed:

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	817.347	627.882
SC	822.154	666.336
-2 Log L	815.347	611.882

R-Square 0.2015 Max-rescaled R-Square 0.3392

State of Wyoming Succession Planning Report Logistic Regression Analysis: Combined Agency Results

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	203.4655	7	<.0001
Score	187.3361	7	<.0001
Wald	137.1760	7	<.0001

Residual Chi-Square Test

Chi-Square	DF	Pr > ChiSq
45.6265	38	0.1847

NOTE: No effects for the model in Step 9 are removed.

NOTE: Model building terminates because the last effect entered is removed by the Wald statistic criterion.

Summary of Stepwise Selection

Step Entered	Effect Removed	DF	Number In	Score Chi-Square	Wald Chi-Square	Pr > ChiSq
1	social	1	1	80.4796		<.0001
2	AGE	1	2	41.6260		<.0001
3	constraint	1	3	43.3328		<.0001
4	PERSONAL	1	4	13.9205		0.0002
5	BENEFIT	1	5	15.2337		<.0001
6	PAY_EX	1	6	10.1856		0.0014
7	RESPECT	1	7	3.9172		0.0478
8	STAFF	1	8	2.8114		0.0936
9	STAFF	1	7		2.7977	0.0944

Summary of Stepwise Selection

Variable
Step Label

- 1
- 2 AGE
- 3
- 4 PERSONAL
- 5 BENEFIT
- 6 PAY_EX
- 7 RESPECT
- 8 STAFF
- 9 STAFF

State of Wyoming Succession Planning Report Logistic Regression Analysis: Combined Agency Results

The LOGISTIC Procedure

Type 3 Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
constraint	1	28.3101	<.0001
AGE	1	47.3024	<.0001
social	1	33.2821	<.0001
PAY_EX	1	8.9939	0.0027
BENEFIT	1	17.1527	<.0001
RESPECT	1	3.8911	0.0485
PERSONAL	1	14.0778	0.0002

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	1.9323	0.8539	5.1204	0.0236
constraint	1	0.1006	0.0189	28.3101	<.0001
AGE	1	-0.0699	0.0102	47.3024	<.0001
social	1	-0.0669	0.0116	33.2821	<.0001
PAY_EX	1	-0.2948	0.0983	8.9939	0.0027
BENEFIT	1	-0.4852	0.1171	17.1527	<.0001
RESPECT	1	0.2298	0.1165	3.8911	0.0485
PERSONAL	1	0.4481	0.1194	14.0778	0.0002

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
constraint	1.106	1.066	1.148
AGE	0.932	0.914	0.951
social	0.935	0.914	0.957
PAY_EX	0.745	0.614	0.903
BENEFIT	1 vs 2	0.379	0.239 0.600
RESPECT	1 vs 2	1.584	1.003 2.500
PERSONAL	1 vs 2	2.450	1.534 3.913

Association of Predicted Probabilities and Observed Responses

Percent Concordant	85.4	Somers' D	0.710
Percent Discordant	14.3	Gamma	0.713
Percent Tied	0.3	Tau-a	0.131
Pairs	75423	c	0.855

State of Wyoming Succession Planning Report Logistic Regression Analysis: Combined Agency Results

The LOGISTIC Procedure

Partition for the Hosmer and Lemeshow Test

Group	Total	LEAVE = Yes		LEAVE = No	
		Observed	Expected	Observed	Expected
1	90	0	0.34	90	89.66
2	90	0	0.81	90	89.19
3	90	1	1.34	89	88.66
4	90	1	2.14	89	87.86
5	90	2	3.20	88	86.80
6	90	4	4.83	86	85.17
7	90	11	7.50	79	82.50
8	90	16	11.84	74	78.16
9	90	17	18.79	73	71.21
10	94	41	41.53	53	52.47

Hosmer and Lemeshow Goodness-of-Fit Test

Chi-Square	DF	Pr > ChiSq
6.1836	8	0.6267