Research, Teaching, and Service

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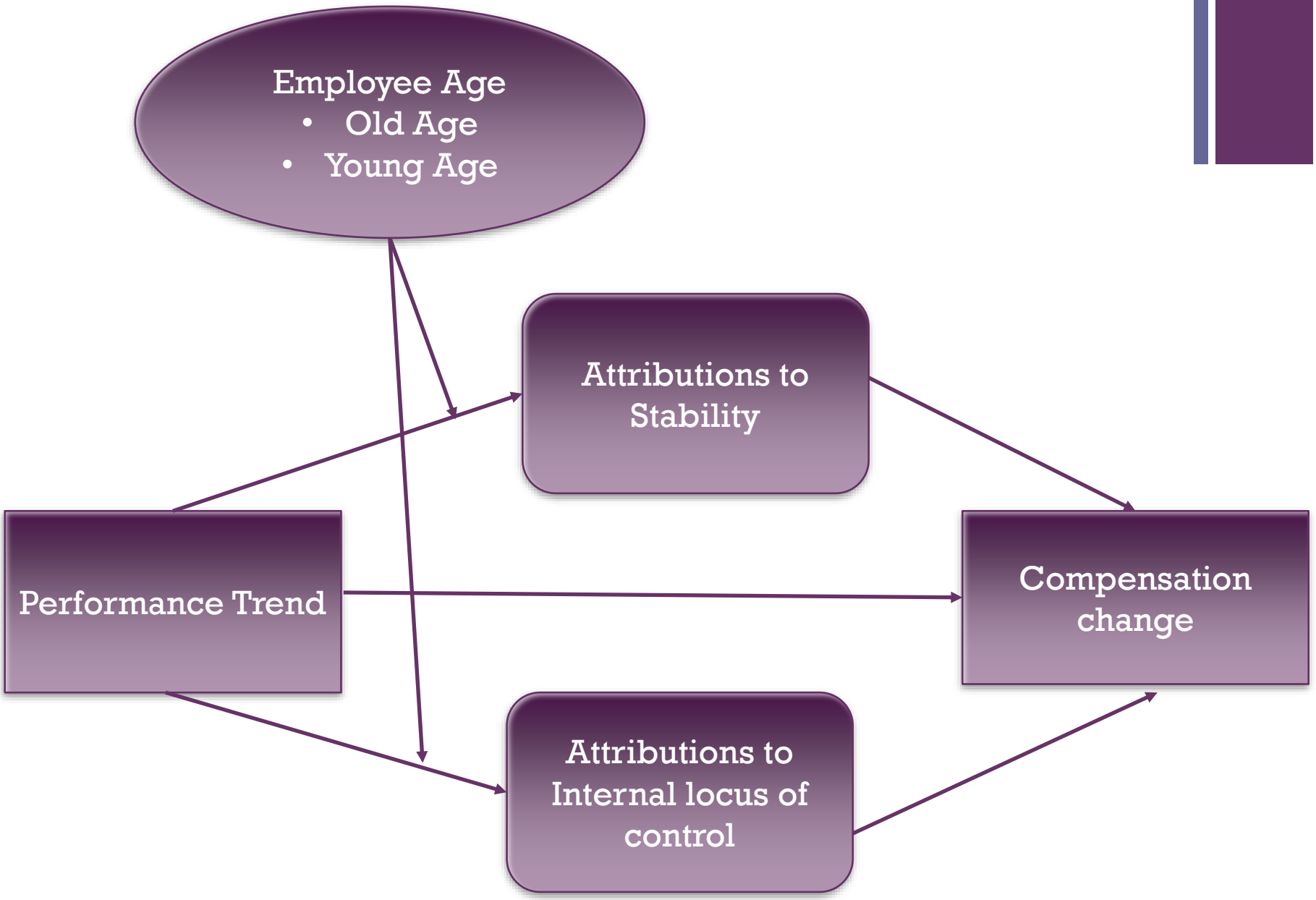
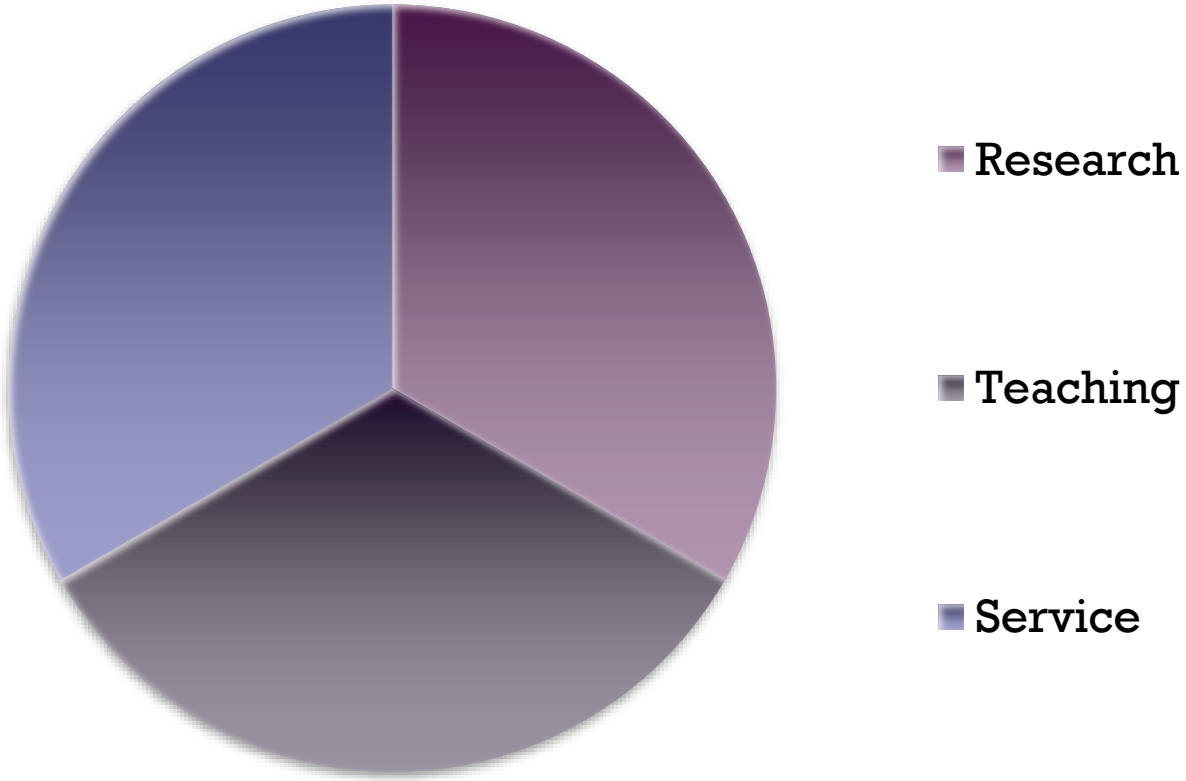

Employee Age
• Old Age
• Young Age
Attributions to Stability
Performance Trend
Compensation change
Attributions to Internal locus of control

The Academic Trilogy.



- How much *do you want* to do research? To teach? Give service?
- How many opportunities *are you given* to do them?
- Are the quantities the same?

Person-Environment Fit Theory

- Needs-Supplies
- Fit or Misfit between what an individual needs and what is supplied by their environment
- General positive outcomes for "fit
- Possible negative outcomes for misfit

- Kristof-Brown, A. L., Billsberry, J. (2013); Kristof-Brown, A. L., Guay, R. P. (2011)

How is turnover intention affected by fit and misfit in needs-supplies for research, teaching, and service in academia?

H1: Turnover intentions will be higher during misfits in needs-supplies for research, teaching, and service.

The Data Set

- Faculty from multiple departments and colleg
  southeastern university
- Sample size for questions varied between n=140 and n=370
- Survey data
- Example of Survey Question for Teaching (Desired and Actual)
  - *1-7 Scale where 1 = none, 4 = a moderate amount, 7 = a great amount)*
- The number of sections and courses you teach.
  - How much do you personally feel is adequate?
  - How much have you actually done?

The Data Set (cont.)

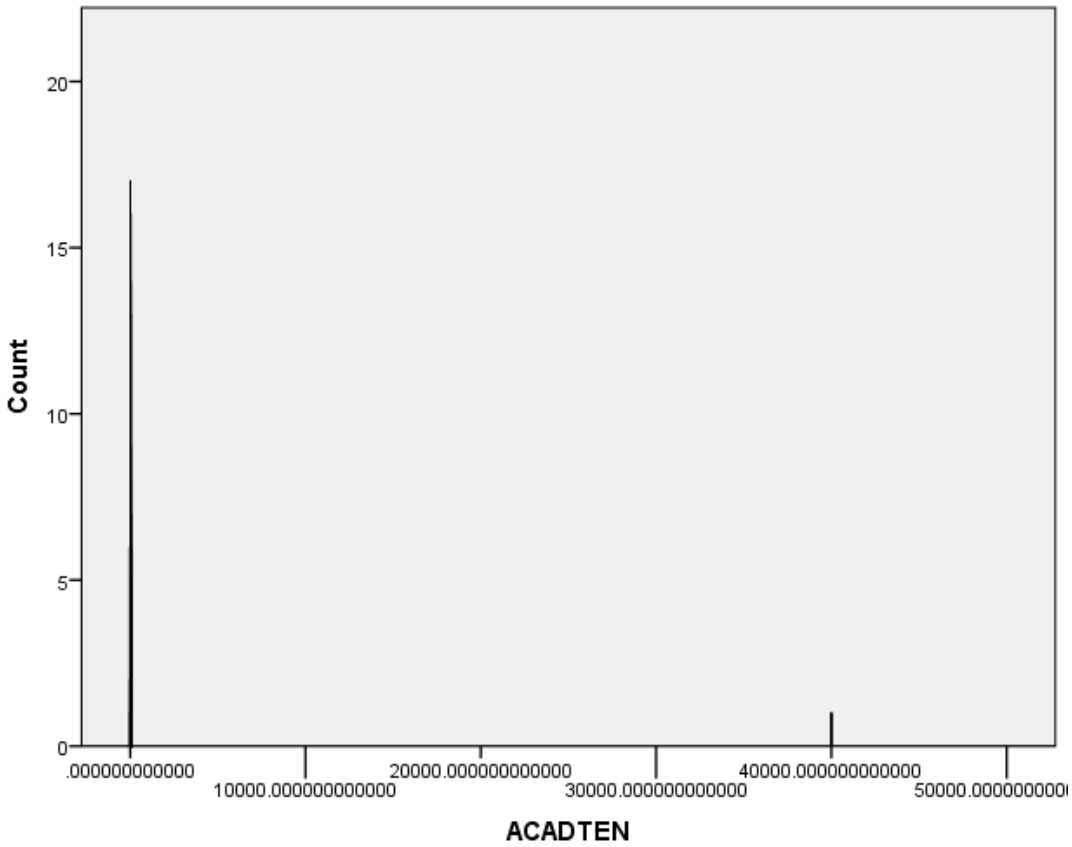
	N	Mean	SD	Median	Mode	Var	Min	Max
Age	283	47.15	10.64	47.00	50.00	113.30	0.00	78.00
Tenure at University	266	10.33	8.92	8.00	3.00	79.50	0.00	42.00
Total Tenure in Academia	273	15.01	10.15	14.00	5.00	103.06	0.00	45.00

Gender		
	Frequency	%
Male	156	30.9
Female	167	33.1
Total Responses	323	64
Missing	182	36
Total	505	100

Race			
		Frequency	Percent
Valid	African American	13	2.6
	Caucasian	280	55.4
	Native American	1	.2
	Hispanic	4	.8
	Asian	19	3.8
	Other	13	2.6
	Total	330	65.3
Missing	System	175	34.7
Total		505	100.0

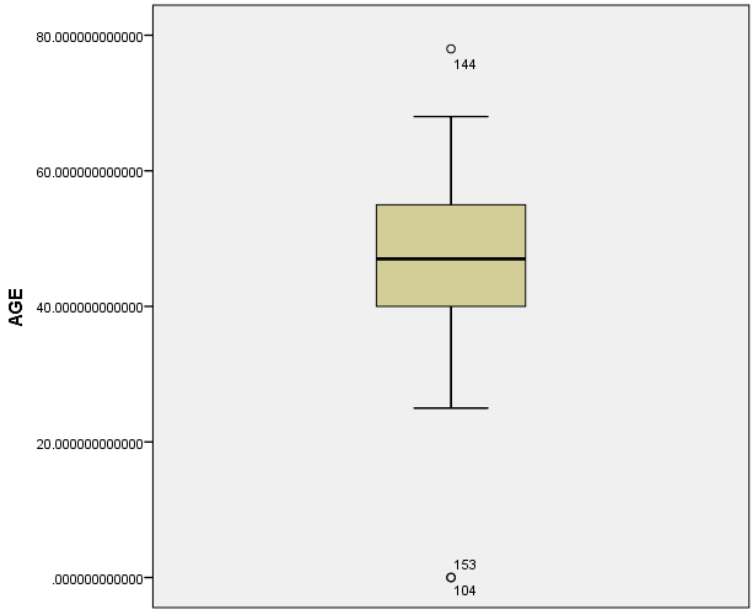
The Data Set (cont.):

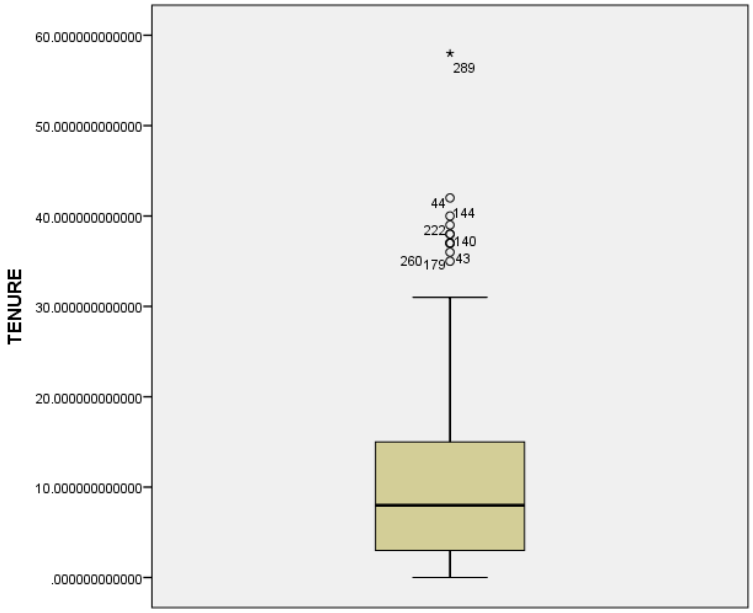
Outlier Detection and Removal



The Data Set (cont.):

Outlier Detection and Removal





The Data Set (cont.)

Correlation between variables

	N	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Turnover Intent	450	-1.05	1.75	1						
(2) Research Desired	330	4.72	1.42	0.049	1					
(3) Research Done	329	4.71	1.68	0.047	0.783**	1				
(4) Teaching Desired	333	4.50	0.88	-0.083	0.044	0.014	1			
(5) Teaching Done	332	5.25	1.17	0.138*	-0.025	0.014	0.593**	1		
(6) Service Desired	343	4.38	1.09	-0.130*	0.203**	.185**	0.373**	0.179**	1	
(7) Service Done	343	5.30	1.43	0.105	0.157**	0.262**	0.163**	.316**	0.613**	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

How to best capture the ‘fit’ relationship?

Difference means regression versus polynomial regression

Difference Score v. Polynomial Regression

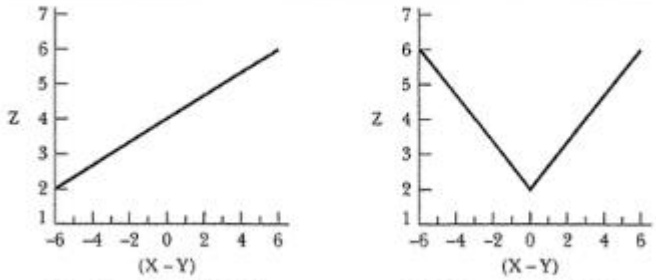
- Difference Score Equation:
- (1) $Z = b_0 + b_1 (X - Y) + e$
- (2) $Z = b_0 + b_1X - b_1Y + e$
- (3) $Z = b_0 + b_1X - b_2Y + e$

- Polynomial Equation:
- (4) $Z = b_0 + b_1(X - Y)^2 + e$
- (5) $Z = b_0 + b_1X^2 - 2b_1XY + b_1Y^2 + e$
- (6) $Z = b_0 + b_1X + b_2Y + b_3X^2 + b_4XY + b_5Y^2 + e$

Edwards (2002)

Difference Score vs Polynomial Regression (cont.)

Figure 11.1. Two-Dimensional Difference Score Functions.

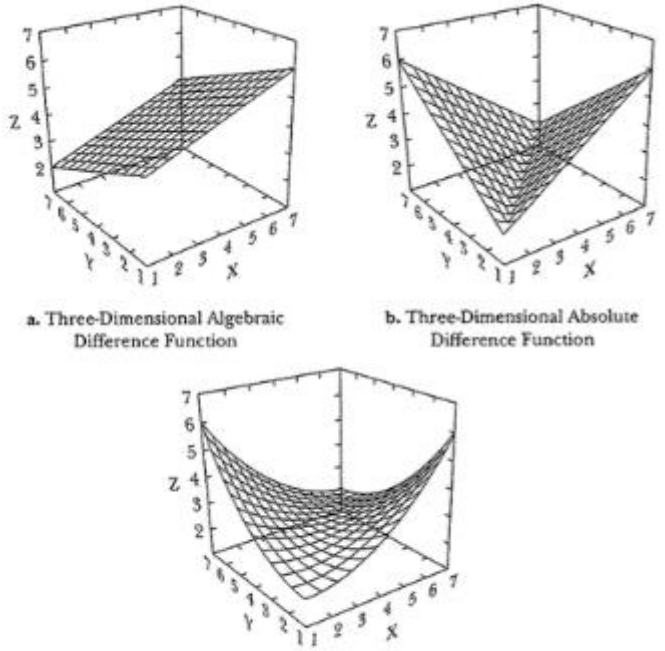


a. Two-Dimensional Algebraic Difference Function

b. Two-Dimensional Absolute Difference Function

c. Two-Dimensional Squared Difference Function

Figure 11.2. Three-Dimensional Difference Score Surfaces.



a. Three-Dimensional Algebraic Difference Function

b. Three-Dimensional Absolute Difference Function

c. Three-Dimensional Squared Difference Function

Polynomial Regression Assumptions

- Variables for congruence are commensurate; they are dimensions of the same construct
- Both variables for congruence use the same scale
- Measures are interval or ratio and have no measurement error*

- *This assumption is rarely, if ever, satisfied

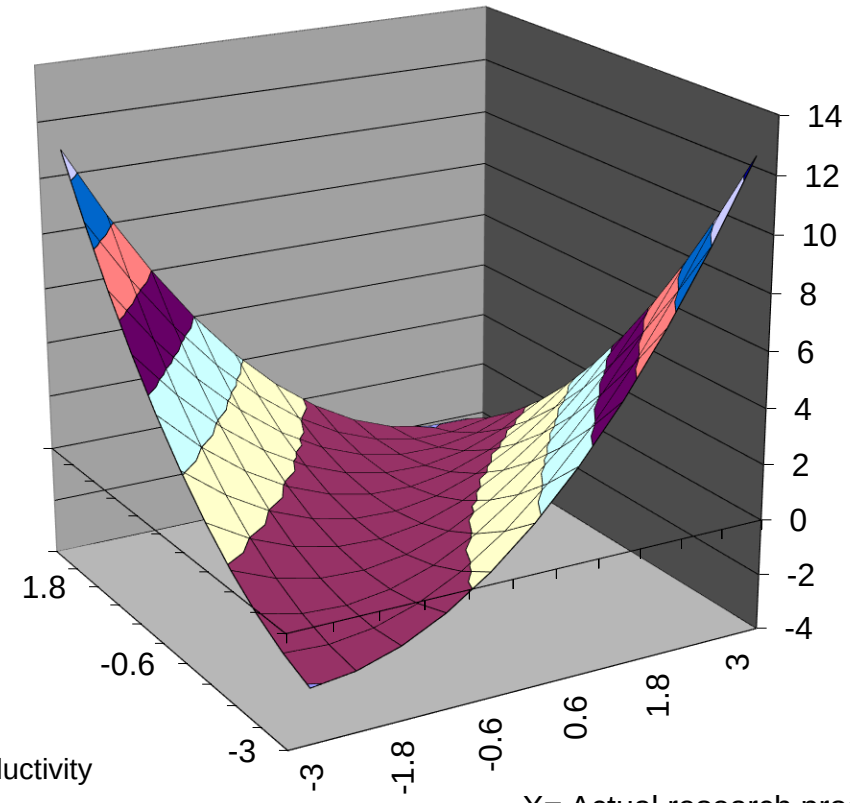
Research

$$Z = -1.048 + 0.147X - 0.161Y + 0.398X^2 - 0.774XY + 0.26Y^2 + e$$

Parameter Estimates						
Dependent Variable: Turnover Intentions						
					95% Confidence Interval	
Parameter	B	Std. Error	t	Sig.	Lower Bound	Upper Bound
Intercept	-1.048	.138	-7.576	.000	-1.320	-.776
Research Desired (Y)	.147	.165	.891	.374	-.178	.471
Research Done (X)	-.161	.172	-.931	.353	-.500	.179
XX	.398	.152	2.623	.009	.100	.697
XY	-.774	.254	-3.045	.003	-1.273	-.274
YY	.260	.176	1.482	.139	-.085	.606

Research

$$Z = -1.048 + 0.147X - 0.161Y + 0.398X^2 - 0.774XY + 0.26Y^2 + e$$

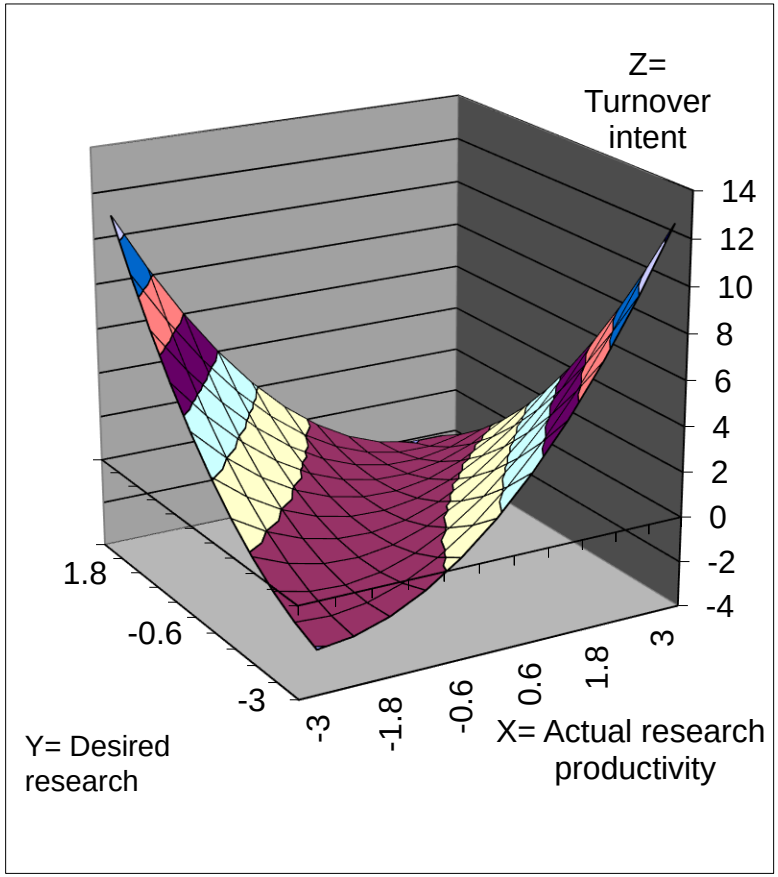


Z= Turnover intent

Y= Desired research productivity

X= Actual research productivity

Research



- Outcomes for Fit: High Desire, High Done
- Outcomes for Fit: Low Desire, Low Done
- Outcomes for Misfit: High Desire, Low Done
- Outcomes for Misfit: Low Desire, High Done

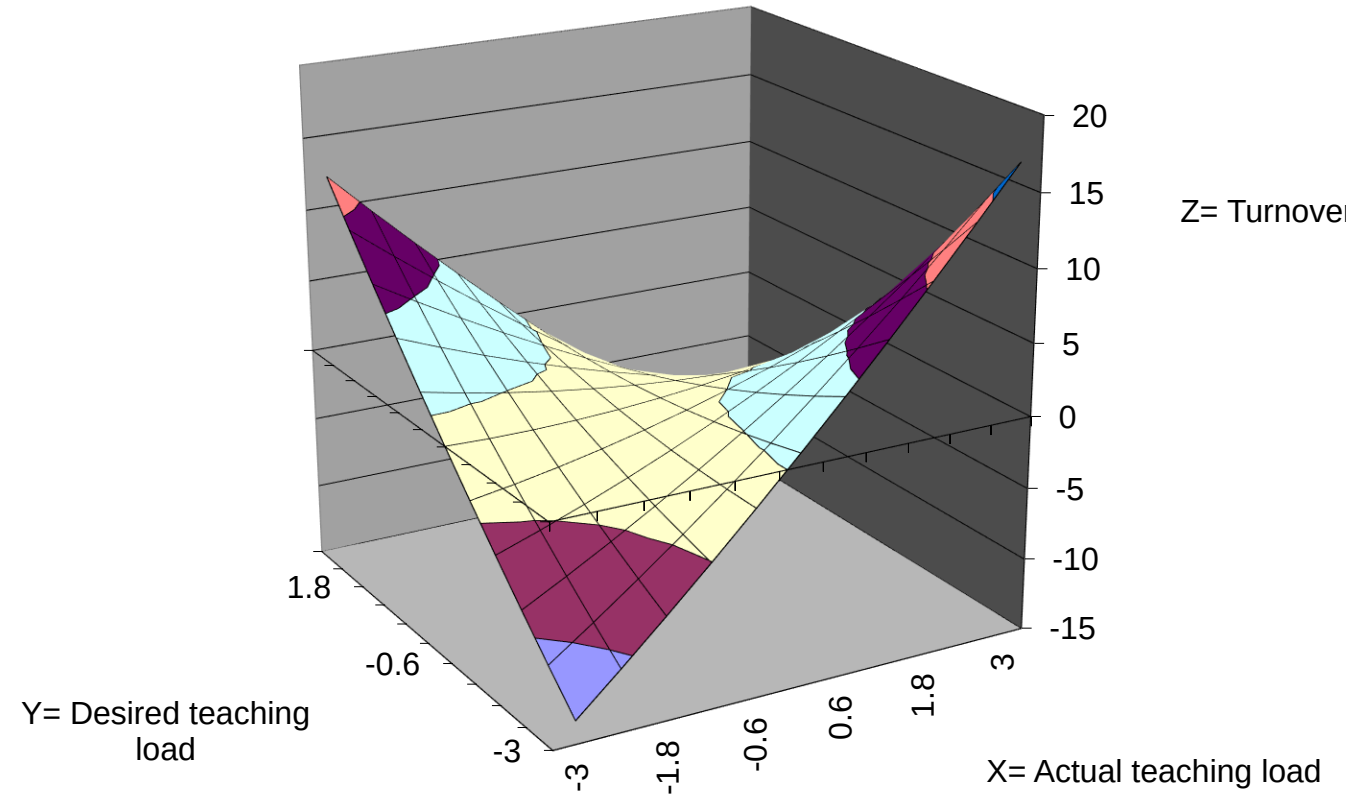
Teaching

$$Z = -1.097 + 0.451X - 0.399Y + 0.11X^2 - 1.55XY + 0.091Y^2 + e$$

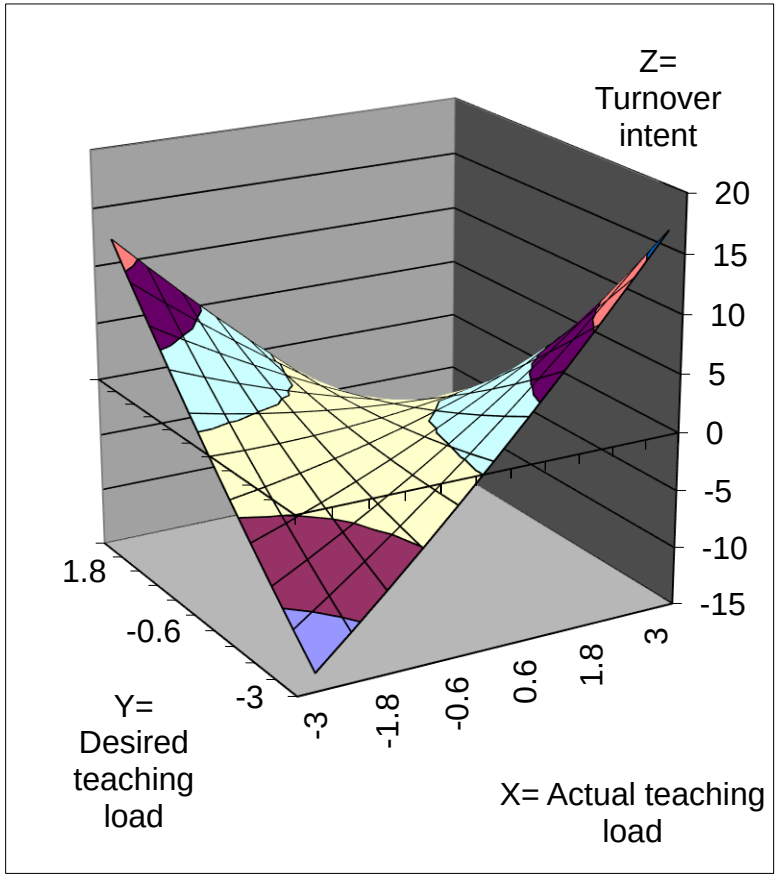
Parameter Estimates						
Dependent Variable: Turnover Intentions						
					95% Confidence Interval	
Parameter	B	Std. Error	t	Sig.	Lower Bound	Upper Bound
Intercept	-1.097	.132	-8.305	.000	-1.357	-.837
Teaching Desired(Y)	.451	.134	3.366	.001	.187	.714
Teaching Done (X)	-.399	.141	-2.822	.005	-.677	-.121
T_XX	.110	.125	.880	.379	-.136	.357
T_XY	-.155	.137	-1.130	.259	-.424	.115
T_YY	.091	.095	.967	.335	-.095	.277

Teaching

$$Z = -1.097 + 0.451X - 0.399Y + 0.11X^2 - 1.55XY + 0.091Y^2 + e$$



Teaching



- Outcomes for Fit: High Desire, High Done
- Outcomes for Fit: Low Desire, Low Done
- Outcomes for Misfit: High Desire, Low Done
- Outcomes for Misfit: Low Desire, High Done

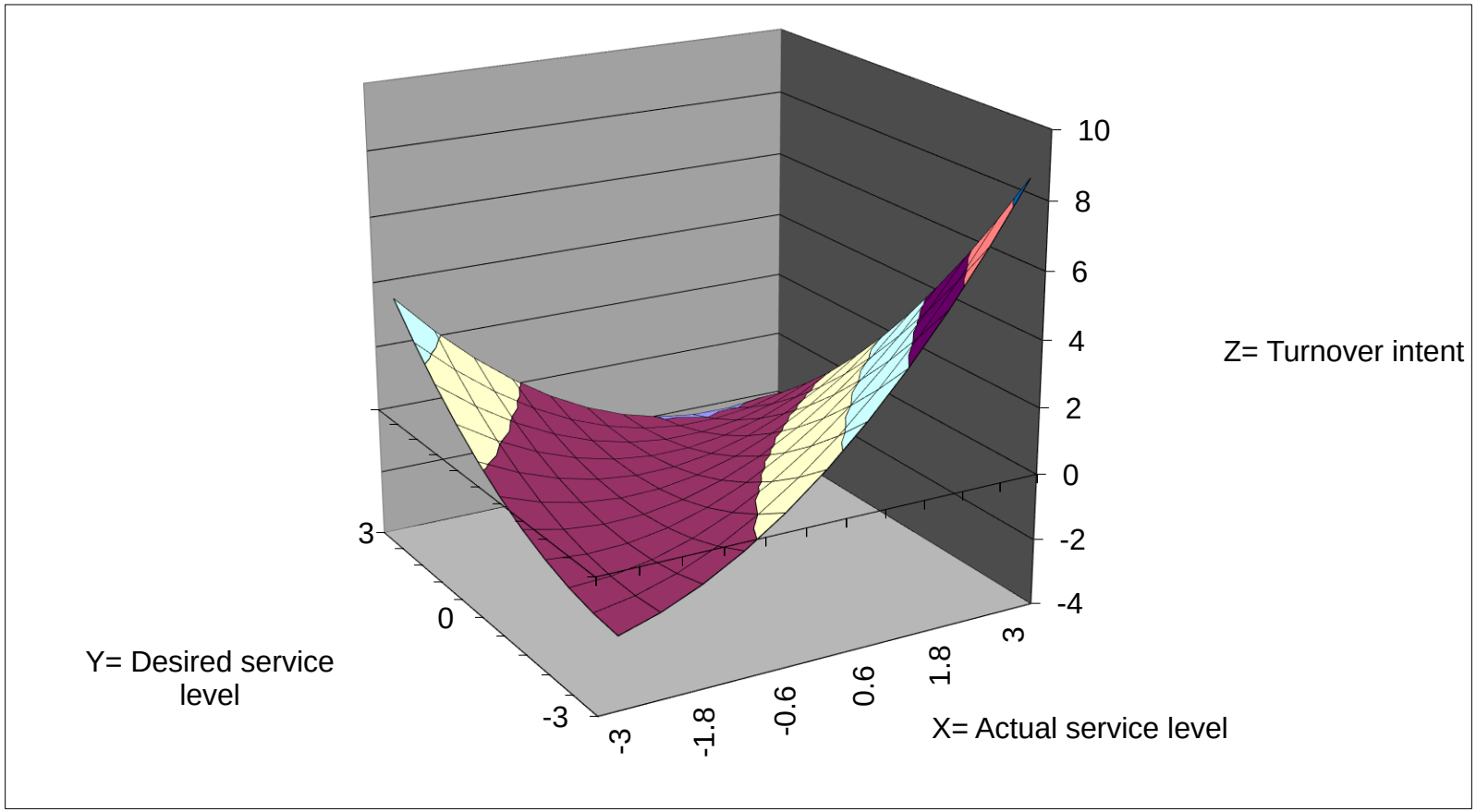
Service

$$Z = -1.064 + 0.421X - 0.468Y + 0.211X^2 - 0.446XY + 0.135Y^2 + e$$

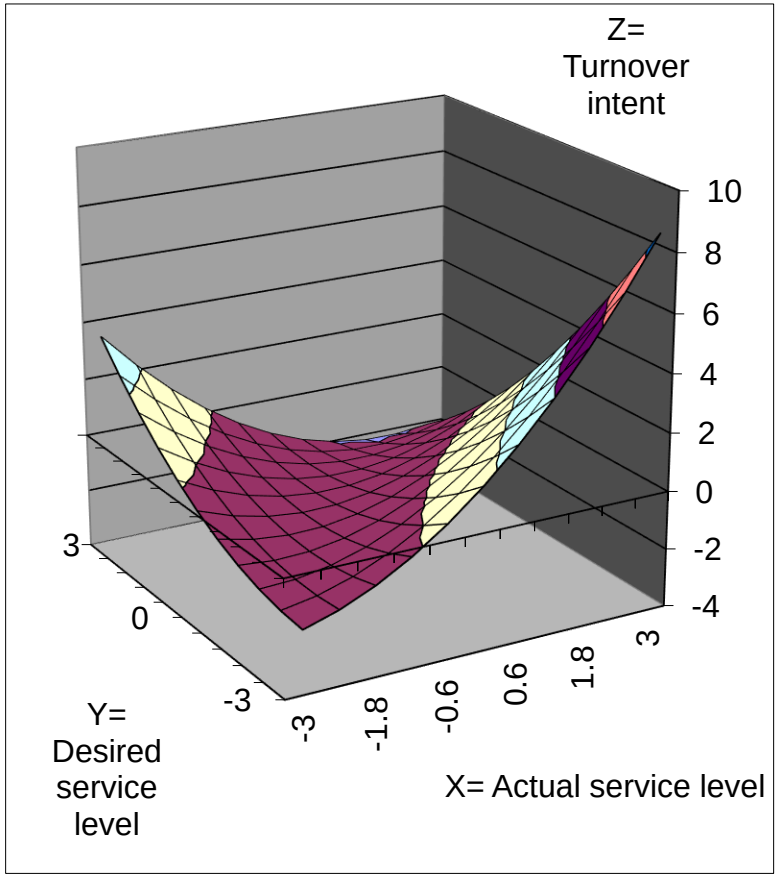
Parameter Estimates						
Dependent Variable: Turnover Intentions						
					95% Confidence Interval	
Parameter	B	Std. Error	t	Sig.	Lower Bound	Upper Bound
Intercept	-1.064	.135	-7.896	.000	-1.329	-.799
Service Desired (Y)	.421	.131	3.200	.002	.162	.679
Service Done (X)	-.468	.122	-3.844	.000	-.707	-.229
S_XX	.211	.113	1.858	.064	-.012	.434
S_XY	-.446	.164	-2.724	.007	-.768	-.124
S_YY	.135	.112	1.207	.228	-.085	.355

Service

$$Z = -1.064 + 0.421X - 0.468Y + 0.211X^2 - 0.446XY + 0.135Y^2 + e$$



Service



- Outcomes for Fit: High Desire, High Done
- Outcomes for Fit: Low Desire, Low Done
- Outcomes for Misfit: High Desire, Low Done
- Outcomes for Misfit: Low Desire, High Done

Main Results

- Hypothesis 1 was supported.
- Turnover intentions were higher during misfits in needs-supplies for research, teaching, and service.
- Both types of misfit in research and teaching (high desire-low amount done and low desire-high amount done) were about equally correlated with strong turnover intentions
- Interestingly, a misfit in low desire-high amount of service done was more strongly correlated with turnover intentions than a misfit in high desire-low amount of service done

Limitations

- Problems with survey data; response rate
- Study was cross-sectional

Future Directions

- How does organizational culture impact turnover intentions in academia in relation to research, teaching, and service?
- Other outcomes such as psychological well-being, job satisfaction, stress, etc.
- Other factors like workplace friendships, TMX could affect turnover intent over period of time
- These effects can be studies in future longitudinal studies

References

- Edwards, J. R. (2002). Alternatives to difference scores: Polynomial regression analysis and response surface methodology. In F. Drasgow & N. W. Schmitt (Eds.), Advances in measurement and data analysis (pp. 350-400). San Francisco: Jossey-Bass.
- Kristof-Brown, A. L., Billsberry, J. (2013). Fit for the future (Chapter 1) in Organizational Fit: Key Issues and New Directions. pp. 1-18. Wiley Blackwell.
- Kristof-Brown, A. L., Guay, R. P. (2011). Person-Environment Fit. Chapter in S. Zedeck (Ed.) American Psychological Association Handbook of Industrial and Organizational Psychology. pp. 1-50. American Psychological Association.

Questions?

Thank you!