

# A Quantitative Analysis of Employee Stress and Job Satisfaction at Two Upstate New York Colleges

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# The team...

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**“Stress is  
multi-  
dimensional”**

# Stress...

**“Stress is a result of the interaction and the relationships of the individual with their environment. It can be defined as the pressure that the environment exerts on the individual. Stress occurs every time individuals try to adjust to an environment composed of unpleasant events like pressures at work, marital problems, [and] financial problems.”**

(Michailidis and Asimenos, 2002, p. 137)

## The Alarm Bell...

In a 2003 survey of 160,000 of the United Kingdom's Association of University Teachers, "93% of its members suffered from work-related stress and 62% from 'excessive' strain"

(Tytherleigh et al., 2005, p. 41).

# Conceptual Framework...

- Educational Leadership
  - Educational institutions are uniquely poised to study and make change (Elliott,2003; Tytherleigh, 2005)
- Human Resources
  - “Presenteeism” (coming to work with physical/emotional problems in greater numbers (Kaupins, 2005; Milano, 2005)
  - EAP needs growing
- Psychology

# Problem & Purpose

- Role of a leader
  - Ensure healthy work environment
  - Identify and mitigate bad stressors

(Tytherleigh, 2005)
- Need – Problem
  - Lack of U.S. research in the area
  - Lack of U.S. research with faculty/staff, full-time/part-time as strata
  - Refined research needed to guide HR policy (Elliott, 2003; Fisher, 1994)

# Research Design

- **Quantitative** approach – Why?

- ✓ well-known
- ✓ standardized statistical analysis methods (ANOVA, etc.) used
- ✓ confirm or disconfirm hypotheses (Dube and Pare, 2003, ¶ 67)
- ✓ Selected over qualitative to enhance scientific rigor of results (Horn, 2004)

- **Cross sectional** survey design

- ✓ Research at one point in time
- ✓ Financial & time constraints

- Individuals will be studied

# The variables...

- **Independent variables (2)**
  - Employee *Position* (faculty vs. staff)
  - Employee *Status* (full-time vs. part-time)
- **Dependent variables (2)**
  - Self-reported levels of stress
  - Self-reported levels of job satisfaction

# Research Question & Hypothesis #1...

1. Does a statistically significant difference exist between employee position (faculty versus staff as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?
  - *H01*: No statistically significant difference exists between employee position (faculty versus staff as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?
  - *Ha1*: A statistically significant difference exists between employee position (faculty versus staff as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?

## Research Question & Hypothesis #2...

2. Does a statistically significant difference exist between employee position (faculty versus staff as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?
  - **H02:** No statistically significant difference exists between employee position (faculty versus staff as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?
  - **Ha2:** A statistically difference exists between employee position (faculty versus staff as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?

Position &  
Job  
Satisfaction

## Research Question & Hypothesis #3...

3. Does a statistically significant difference exist between employee status (full-time versus part-time as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?
  - **H03:** No statistically significant difference exists between employee status (full-time versus part-time as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?
  - **Ha3:** A statistically significant difference exists between employee status (full-time versus part-time as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?

## Research Question & Hypothesis #4...

4. Does a statistically significant difference exist between employee status (full-time versus part-time as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?
  - *H04*: No statistically significant difference exists between employee status (full-time versus part-time as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?
  - *Ha4*: A statistically significant difference exists between employee status (full-time versus part-time as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?

## Research Question & Hypothesis #5...

5. Does a statistically significant interaction exist between employee position (faculty versus staff) and employee status (full-time versus part-time), as categories of employees in higher education institutions in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?
  - **H05:** No statistically significant interaction exists between employee position (faculty versus staff) and employee status (full-time versus part-time), as categories of employees in higher education institutions in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?
  - **Ha5:** A statistically significant interaction exists between employee position (faculty versus staff) and employee status (full-time versus part-time), as categories of employees in higher education institutions in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?

Position  
vs.  
Status &  
Stress

## Research Question & Hypothesis #6...

6. Does a statistically significant interaction exist between employee position (faculty versus staff) and employee status (full-time versus part-time) as categories of employees in higher education institutions in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?
  - *H06*: No statistically significant interaction exists between employee position (faculty versus staff) and employee status (full-time versus part-time) as categories of employees in higher education institutions in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?
  - *Ha6*: A statistically significant interaction exists between employee position (faculty versus staff) and employee status (full-time versus part-time) as categories of employees in higher education institutions in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?

Position vs.  
Status &  
Job  
Satisfaction

# Measurement

# Population & Sample

- U.S. full & part-time higher education faculty and staff (general population)
- Full & part-time higher education faculty and staff at two upstate N.Y. colleges (target population)
- Stratified random sample of full & part-time faculty & staff



# Population & Sample (cont.)

Table 1  
*Stratified sampling of faculty and staff (n=1,084)*

Strata	Faculty full-time	Faculty part-time	Staff full-time	Staff part-time	Total
<b>Institution</b>					
Institution A: Two-year college	82	72	185	44	383
Institution B: Four-year college	133	176	330	62	701
<b>Total</b>	<b>215</b>	<b>248</b>	<b>515</b>	<b>106</b>	<b>1,084</b>
<b>Total</b> (% of total faculty & staff)		43		57	100

# The actual sample...

Table 2  
Stratified sample of faculty and staff (N=227)

Category	Population (n=1,084)	Mailed (60%)	Response (raw)	Response %	Response % vs. Population
<b>Strata</b>					
Academic – faculty full-time	215	129	46	35.66	21.40
Academic – faculty part-time	248	149	51	34.27	20.56
Staff – full-time	515	309	114	36.89	22.14
Staff – part-time	106	64	16	25.16	15.09
<b>Total</b>	<b>1084</b>	<b>644*</b>	<b>227</b>	<b>35.25</b>	<b>20.94</b>
*651 were mailed, 644 were successfully mailed (were not returned)					

# The ASSET Instrument...

- A
- Stress
- Screening
- Evaluation
- Tool

- Short, but sound
- 12 sub-scales
- Good convergent and face validity
- Strong reliability (high Cronbach's Alpha coefficients)
- Large pool of normative data (25,000+)
- First US Researcher



## Higher Education Occupational Stress ASSET

### An Organizational Stress Screening Tool

#### Background

This ASSET questionnaire has been designed to help organizations assess the risk of stress in their workforce. It measures potential exposure to stress in respect of a range of common workplace stressors and consequently can represent an organization's first step towards effectively managing stress in the workplace. ASSET provides a quick and reliable method of assessing and monitoring areas of potential risk and so helps to focus organizational attention and resource on these areas.

As a diagnostic tool, ASSET enables organizations to: **survey** the level of stress that exists in the organization; **examine** the extent to which groups are differentially affected; and **identify** what the sources of pressure are for different groups across the organization. The ASSET questionnaire collects important stress-related data by asking straightforward questions about the sources and effects of workplace stress. These questions are posed to the people who are the most qualified to answer them: the employees.

The questionnaire is divided into four sections. It starts by asking you for general biographical information. The next three sections ask you about your perceptions of pressure at work. The first of these concerns your job and also includes some questions relating to home and social life-related pressures. The next section is concerned with your attitude towards your organization and the final section is about your health. Each of these sections has been designed to measure your exposure to stress in respect of a wide range of common workplace stressors.

#### How to complete the questionnaire:

- Please answer ALL the questions.
- Please print text clearly in capital letters
- Please give your first and natural answer - try not to dwell too long on each question
- Work quickly and efficiently through the questionnaire - it will only take you about 10-15 minutes to complete
- Please base your answers on how you have felt during the last three months unless a question tells you to do otherwise.
- When you have completed all questions, please place the survey in the self-addressed stamped envelope and return to the researcher, James C. Brown, by **Monday, February 26, 2007**.
- By **checking this box** you acknowledge that you understand the nature of the study, the potential risks and rewards to you as a participant, and the means by which your identity will be kept confidential. By checking this box you also acknowledge that you are 18 years old or older and that you give your permission to voluntarily serve as a participant in the study described in the cover letter enclosed in this packet.

#### Confidentiality and Anonymity

Please be assured that the information you provide will remain strictly confidential and your anonymity is assured

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# The ASSET Scales...

- **ASSET broken into four main areas:**
  1. Perceptions of job
  2. Attitudes towards organization
  3. Your health
  4. Biographical information
- Information of this type is best collected via quantitative survey instrument

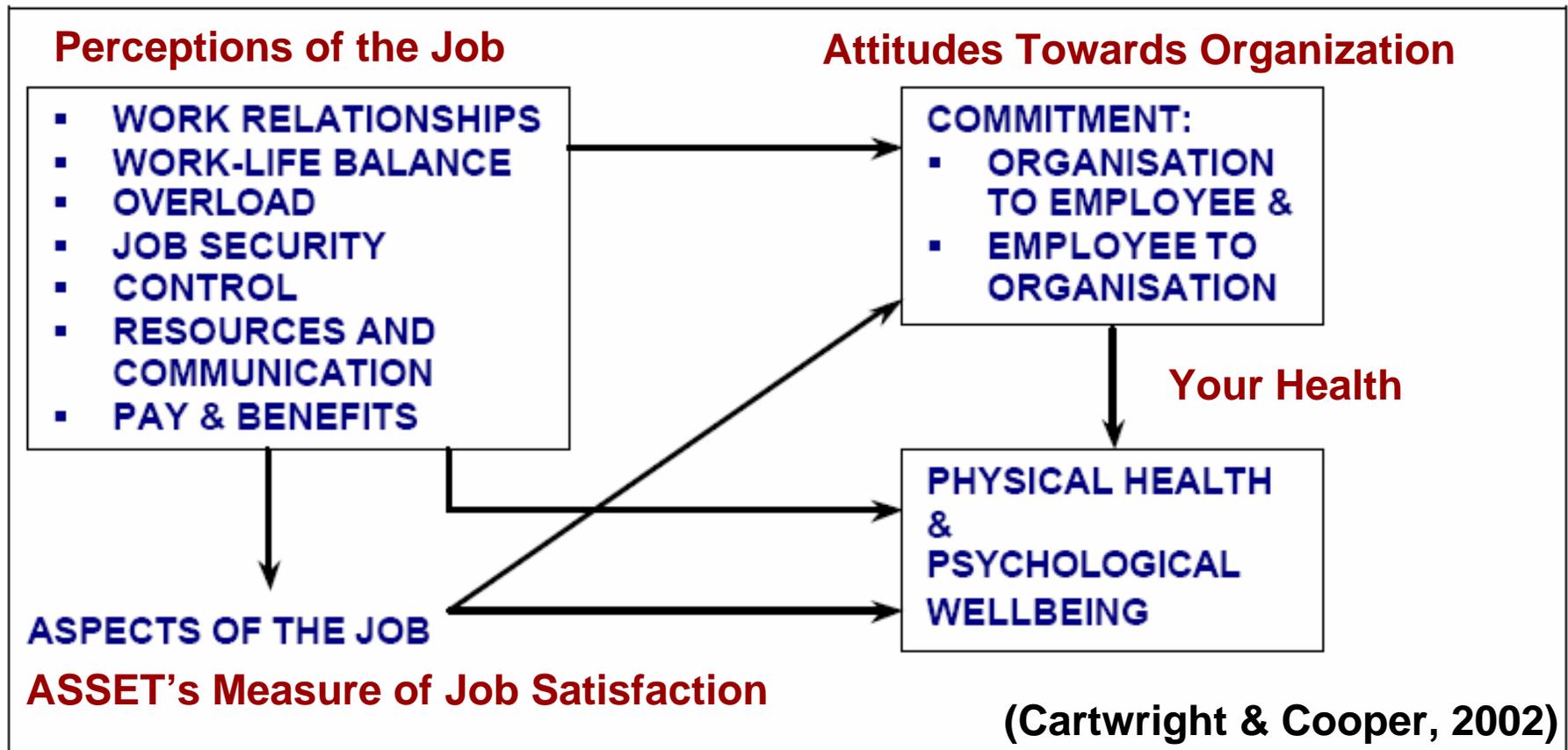
# Data Collection

- Self-administered paper and pencil survey (ASSET)
- Utilized Dillman's (1978) *total design method* to enhance response rate
  - Pre-survey letter
  - Letter & Survey
  - Reminder postcard
- ✓ **1,084** – letters mailed to entire population
- ✓ **661** – letters & surveys mailed to stratified random sample
- ✓ **227** – number of useable surveys returned

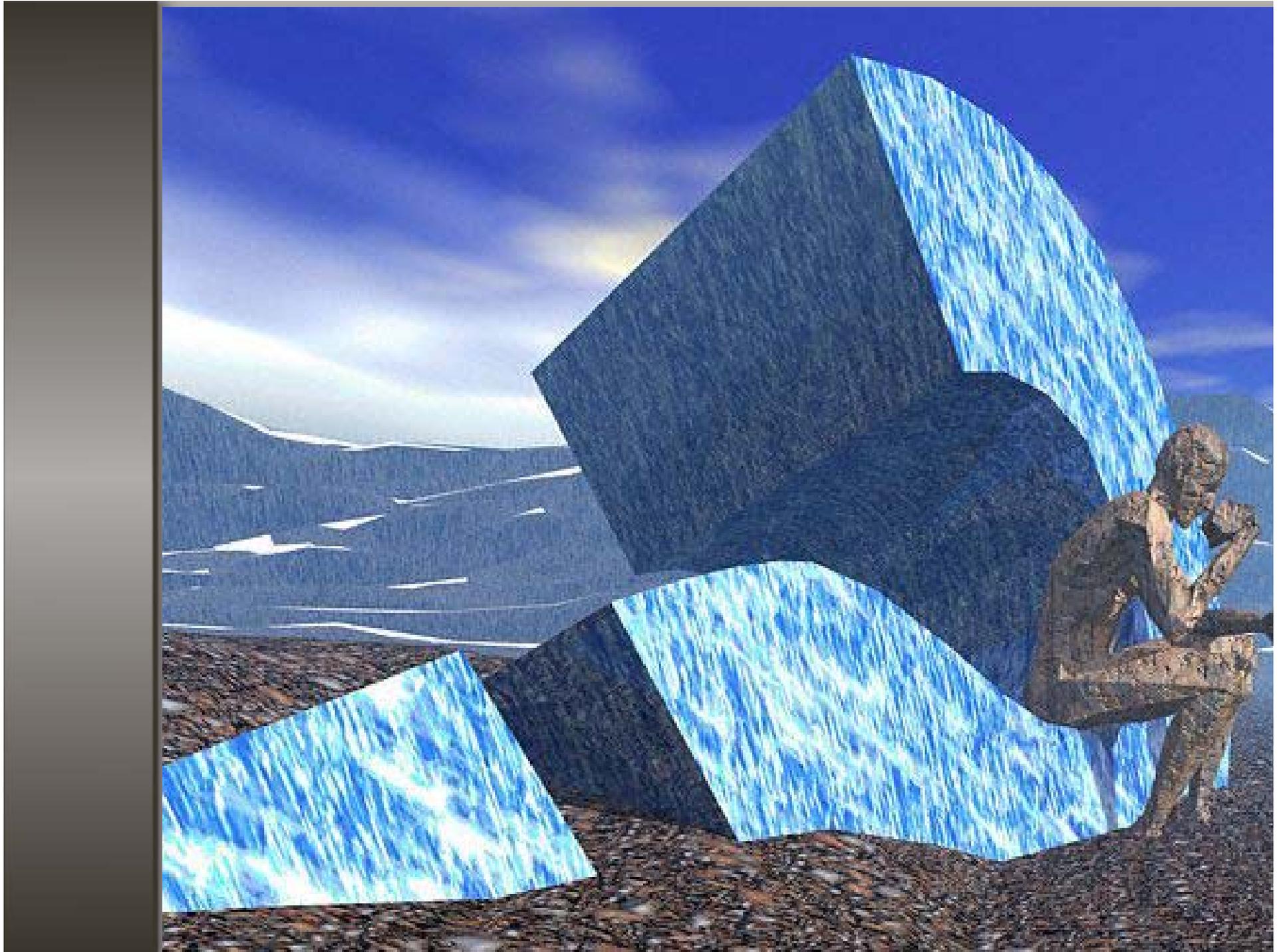
# Data Collection: ASSET



Figure 1: The ASSET Model



**“Stress is  
multi-  
dimensional”**



# Analysis & Results

# Data Analysis

- 231 surveys returned
- 227 useable surveys (informed consent checked)
- Data hand entered into SPSS
- Two-person entry; data cross-checked
- Statistical analysis team
  - Professor William Pelz (US)
  - Dr. Michelle Tytherleigh (UK)



# Dashboard indicators...

- 227 of 644 surveys returned
- 35.25% overall response rate
- 5.2% error at 95% confidence level
- Statistically significant differences in 5 of 12 ASSET subscales ( $<.05$ )
- The Tests (for each subscale):
  - ANOVA (analysis of variance)
  - Means & standard deviations
  - Cronbach's Alphas
  - Benchmarked against normative data for higher education for trends only

# Findings by the numbers...

Table 3  
Stratified sample of faculty and staff (N=227)

Category	Population (n=1,084)	Mailed (60%)	Response (raw)	Response %	Response % vs. Population
<b>Strata</b>					
Academic – faculty full-time	215	129	46	35.66	21.40
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*651 were mailed, 644 were successfully mailed (were not returned)					

# Core descriptive statistics...

<b>ASSET Subscale</b>	<b>Mean (N=227)</b>	<b>Norm Mean (N=4776; UK Only)</b>	<b>SD (N=227)</b>
<b>Work Relationships</b>	<b>17.65</b>	<b>20.57</b>	<b>7.231</b>
<b>Work Life Balance</b>	<b>10.38</b>	<b>11.56</b>	<b>4.399</b>
<b>Overload</b>	<b>10.37</b>	<b>12.02</b>	<b>4.405</b>
<b>Job Security</b>	<b>10.70</b>	<b>11.97</b>	<b>4.052</b>
<b>Control</b>	<b>11.29</b>	<b>13.00</b>	<b>4.936</b>
<b>Resources &amp; Communication</b>	<b>10.22</b>	<b>12.80</b>	<b>4.081</b>
<b>Aspects of the job</b>	<b>20.17</b>	<b>22.93</b>	<b>5.756</b>
<b>Pay &amp; Benefits</b>	<b>3.77</b>	<b>3.48</b>	<b>1.685</b>
<b>Commitment to employee</b>	<b>22.50</b>	<b>16.82</b>	<b>5.010</b>
<b>Commitment to Organization</b>	<b>18.48</b>	<b>18.76</b>	<b>4.204</b>
<b>Physical Health</b>	<b>12.83</b>	<b>13.58</b>	<b>3.944</b>
<b>Psychological Wellbeing</b>	<b>19.95</b>	<b>23.69</b>	<b>6.923</b>

Means & Standard deviations consistent with previous research  
(Tytherleigh et al., 2005; Tytherleigh et al., 2007)

# Cronbach's Alphas...

ASSET Subscale	Cronbach's Alphas (current sample)	Cronbach's Alphas (Tytherleigh et al., 2005)	Cronbach's Alphas (Tytherleigh et al., 2007)
Work Relationships	0.852	0.84	0.838
Work Life Balance	0.726	0.64	0.720
Overload	0.795	0.82	0.824
Job Security	0.633	0.84	0.634
Control	0.856	0.61	0.837
Resources & Communication	0.732	0.73	0.728
Aspects of the job	0.643	0.74	0.625
Pay & Benefits	-	-	-
Commitment to employee	0.838	0.82	0.828
Commitment to Organization	0.838	0.75	0.781
Physical Health	0.761	0.82	0.781
Psychological Wellbeing	0.922	0.75	0.902

Data suggests good reliability of ASSET for this research study  
(coefficients > 0.70)

## Summary Table of Main Effect and Interaction Significance (\*= $\leq$ .05)

Independent Variables			
ASSET Subscales	Employee Status (full-time vs. part-time)	Employee Position (faculty vs. staff)	Interaction of Status and Position
<b>Dependent Variables: Perceived Stress (11)</b>			
Work Relationships	.082	.577	.360
Work Life Balance	.061	.979	.520
<b>Overload</b>	<b>.000*</b>	.509	.943
<b>Job Security</b>	<b>.007*</b>	.319	<b>.007*</b>
Control	.168	.757	.191
<b>Resources &amp; Communication</b>	<b>.024*</b>	.883	.976
<b>Pay &amp; Benefits</b>	<b>.016*</b>	.509	.474
Commitment to employee	.938	.116	.740
Commitment to Organization	.795	.084	.814
Physical Health	.155	.070	.609
Psychological Wellbeing	.054	.912	.518
<b>Dependent Variable: Job Satisfaction (1)</b>			
<b>Aspects of the Job</b>	<b>.029*</b>	.398	.518

# ANOVA...Overload

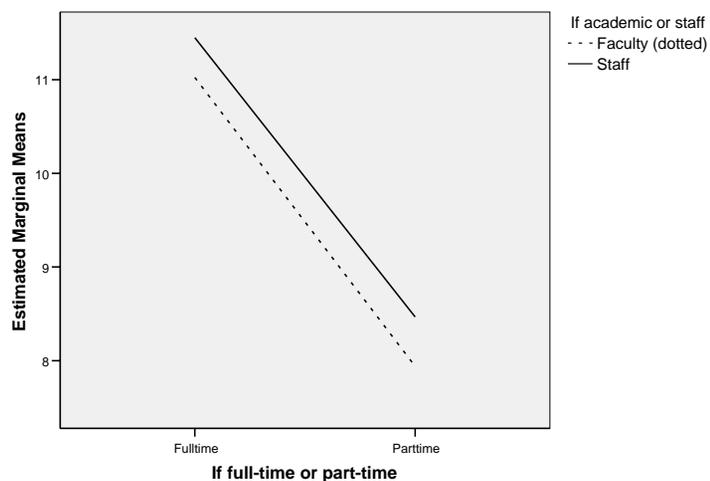
Table of Means - Overload

Position	Faculty	Staff	Total
<b>Status</b>			
Full-time	11.02	11.45	11.33
Part-time	7.94	8.47	8.06
<b>Total</b>	9.37	11.10	10.37

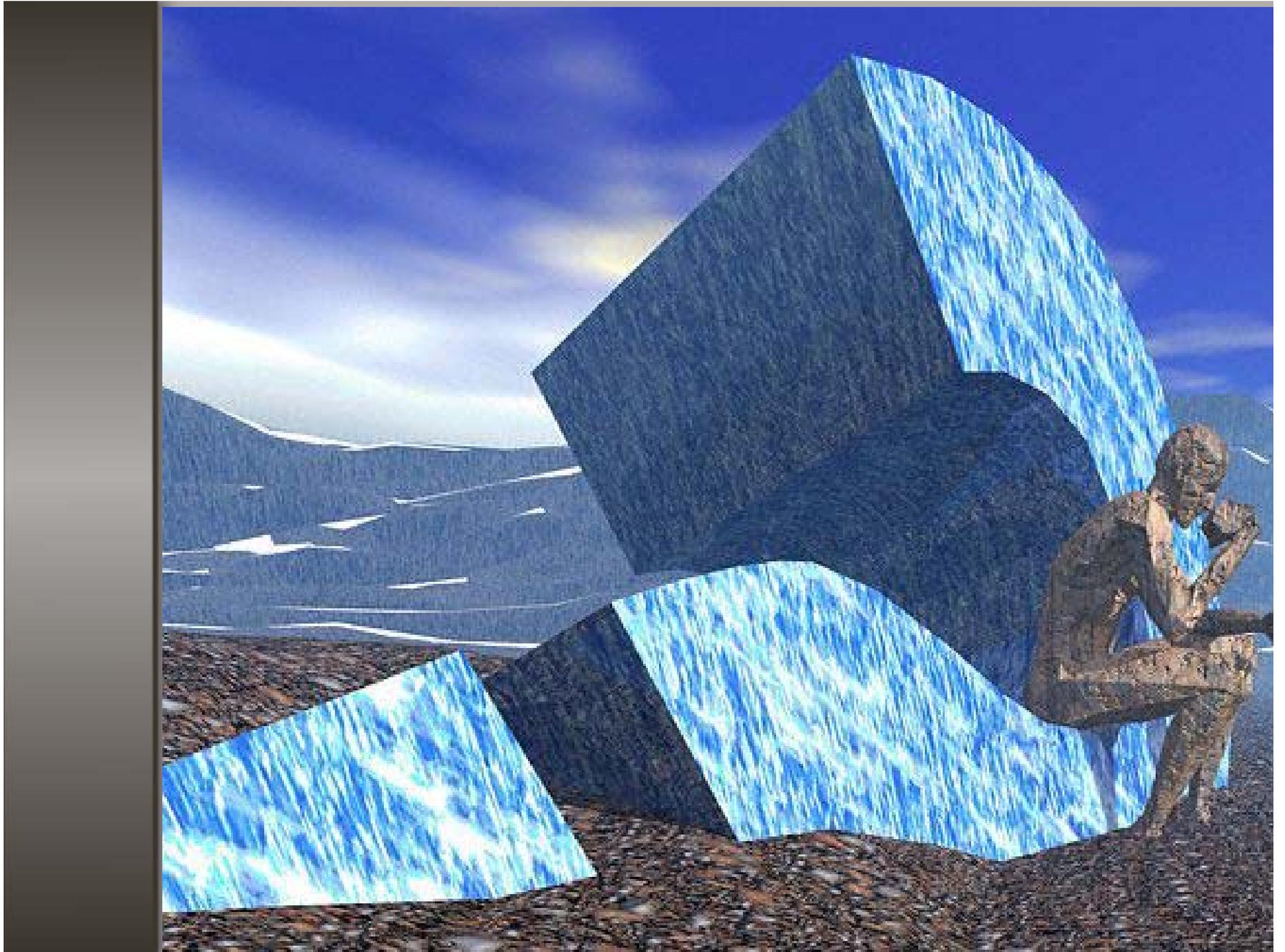
ANOVA Results - Overload

Source	SS	df	MS	F	Sig.
Status	309.800	1	309.800	17.830	.000
Position	7.616	1	7.616	.438	.509
Status*Position	8.861E-02	1	8.861E-02	.005	.943
Error	3787.714	218	17.375		
Total	4287.968	221			

Estimated Marginal Means - Overload



Estimated Marginal Means - Overload



# Research Question & Hypothesis #1...

1. Does a statistically significant difference exist between employee position (faculty versus staff as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?

No difference exists

- $H_01$ : No statistically significant difference exists between employee position (faculty versus staff as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?
- $H_{a1}$ : A statistically significant difference exists between employee position (faculty versus staff as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?

Position & Levels of Stress

## Research Question & Hypothesis #2...

2. Does a statistically significant difference exist between employee position (faculty versus staff as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?

No difference exists

- ***H02***: No statistically significant difference exists between employee position (faculty versus staff as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?
- ***Ha2***: A statistically difference exists between employee position (faculty versus staff as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?

Position &  
Job  
Satisfaction

## Research Question & Hypothesis #3...

Yes, a significant difference exists

3. Does a statistically significant difference exist between employee status (full-time versus part-time as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?
  - **H03:** No statistically significant difference exists between employee status (full-time versus part-time as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?
  - **Ha3:** A statistically significant difference exists between employee status (full-time versus part-time as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?

Status &  
Stress

## Research Question & Hypothesis #4...

4. Does a statistically significant difference exist between employee status (full-time versus part-time as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?

Yes, a significant difference exists

- *H04*: No statistically significant difference exists between employee status (full-time versus part-time as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?
- *Ha4*: A statistically significant difference exists between employee status (full-time versus part-time as categories of employees in higher education institutions) in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?

Status &  
Job  
Satisfaction

# Research Question & Hypothesis #5...

Yes, a significant interaction exists

5. Does a statistically significant interaction exist between employee position (faculty versus staff) and employee status (full-time versus part-time), as categories of employees in higher education institutions in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?

- **H05:** No statistically significant interaction exists between employee position (faculty versus staff) and employee status (full-time versus part-time), as categories of employees in higher education institutions in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?
- **Ha5:** A statistically significant interaction exists between employee position (faculty versus staff) and employee status (full-time versus part-time), as categories of employees in higher education institutions in the United States with respect to their self-reported levels of workplace stress at two upstate New York colleges?

Position  
vs.  
Status &  
Stress

# Research Question & Hypothesis #6...

No significant interaction exists

6. Does a statistically significant interaction exist between employee position (faculty versus staff) and employee status (full-time versus part-time) as categories of employees in higher education institutions in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?

- *H06*: No statistically significant interaction exists between employee position (faculty versus staff) and employee status (full-time versus part-time) as categories of employees in higher education institutions in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?
- *Ha6*: A statistically significant interaction exists between employee position (faculty versus staff) and employee status (full-time versus part-time) as categories of employees in higher education institutions in the United States with respect to their self-reported levels of job satisfaction at two upstate New York colleges?

Position vs.  
Status &  
Job  
Satisfaction

## Implications for Educational Leadership...

- ✓ Proactively use results to enact change
- ✓ Identify and predict occupational stressors in the higher education workplace
- ✓ Commit resources
- ✓ Demonstrate long-term support
- ✓ Leaders can now isolate key dimensions of stress towards mitigating the stressors
- ✓ **Immediate action can be taken to make change in higher education institutions**

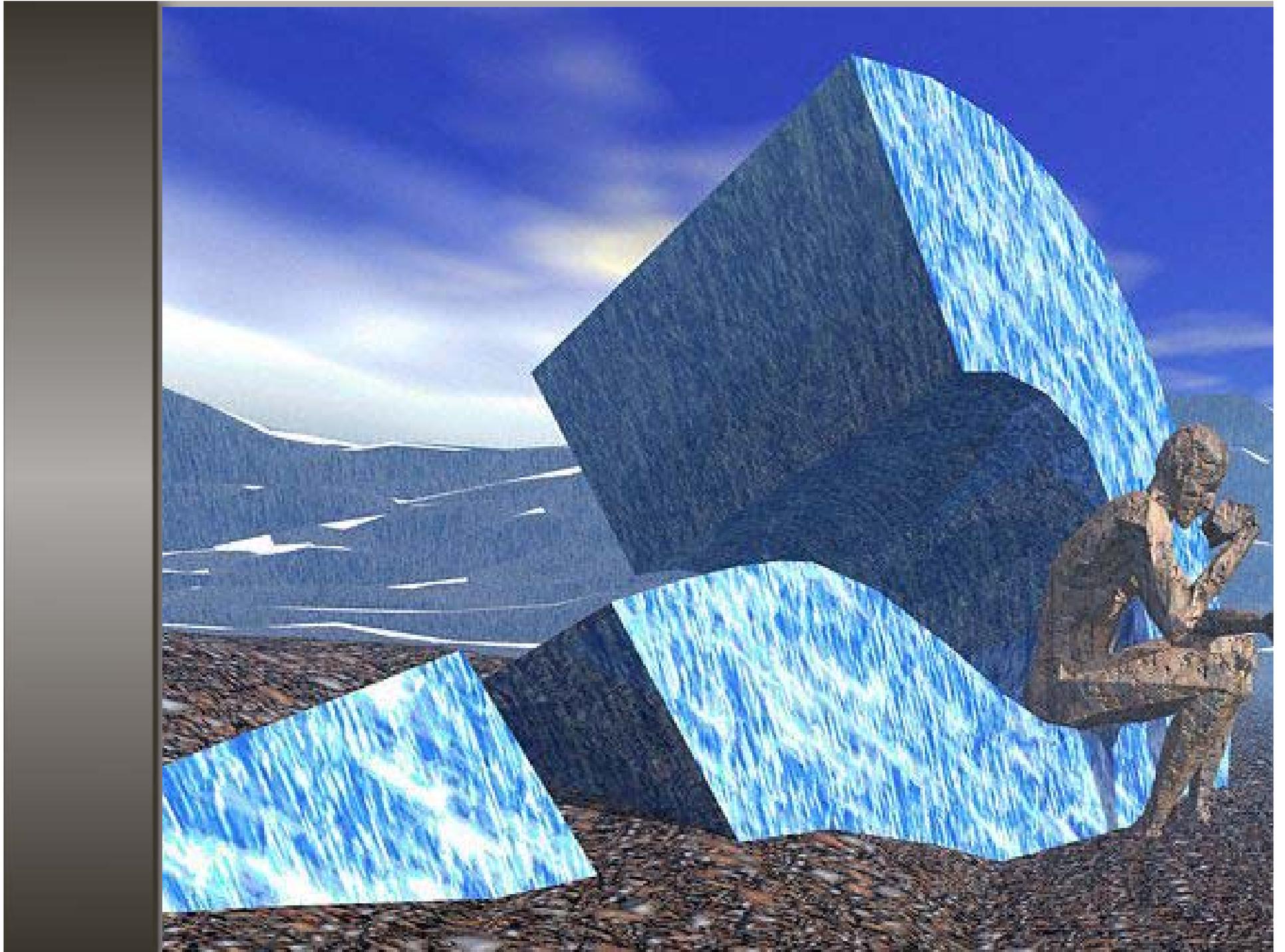
# Future Research...

- ✓ More US based research needed
- ✓ ASSET is just the first step
- ✓ Longitudinal studies of higher education stress necessary (optimal)
- ✓ Comparative studies needed to establish world-wide standard
- ✓ Institutional differences can be explored
- ✓ **Expansion of ASSET to include new technologies and teaching delivery systems (online, etc.)**

# Final thought...

“Academic and administrative cultures are two separate and, in many aspects, competing domains. Put differently, faculty and administrators are known to hold different implicit models of their work environment. Faculty value scholarship while administrators value organizational efficiency and accountability”

(Del Favero, 2005, p. 71).



# References

Complete references are available in the dissertation “references” section as a companion to this presentation.