Will it work here? Validating a fit survey for a new student population

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Today's presentation

- Background

  - Institutional Context

  - Literature on Student-Institution Fit

- IUPUI Administration

- Analysis of items

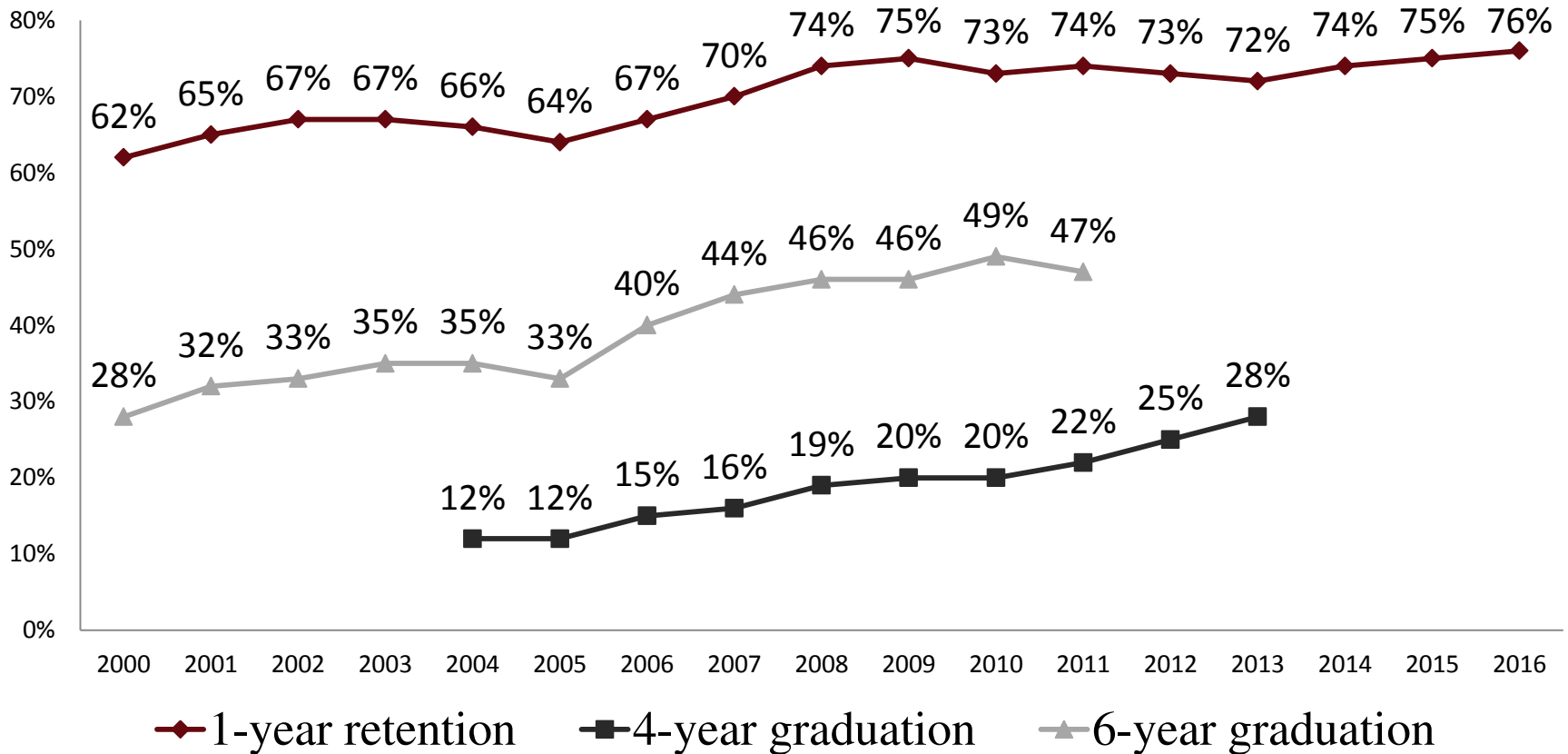 - Mplus

  - Qualitative

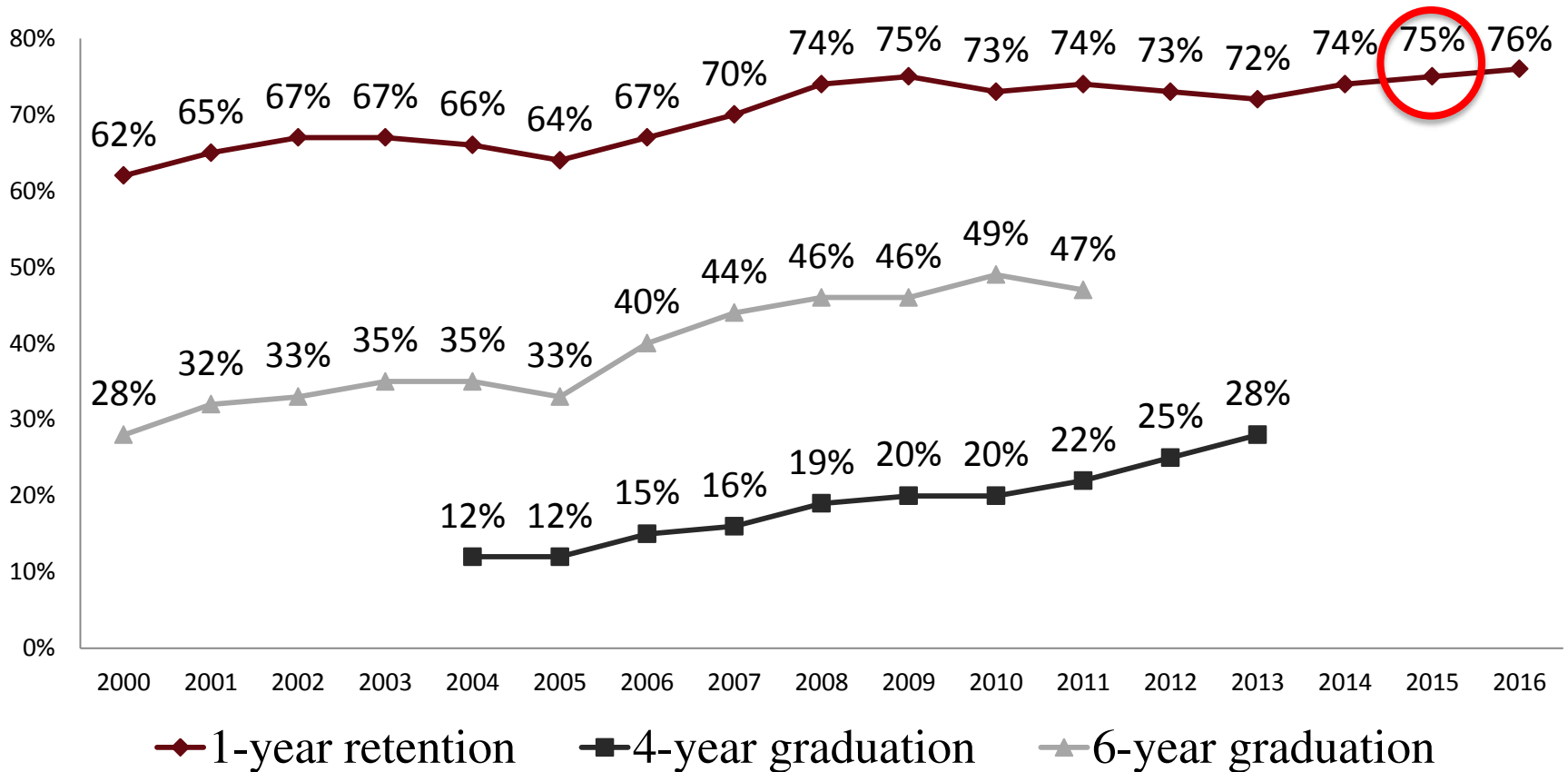- Where we go from here

Background

IUPUI

- Fall 2017

  - 20,870 degree-seeking undergraduate students

  - 3,820 new beginners

  - 1,326 external (non-IU) transfers

- Fall 2015

  - 21,777 degree-seeking undergraduate students

  - 3,622 new beginners

  - 1,296 external transfers

Indianapolis Only FTFT Cohort Retention and Graduation Rate (Bachelor's, Associate, and Certificate) Courtesy of Michele Hansen

Chart showing retention and graduation rates from 2000 to 2016.

1-year retention: 2000: 62%, 2001: 65%, 2002: 67%, 2003: 67%, 2004: 66%, 2005: 64%, 2006: 67%, 2007: 70%, 2008: 74%, 2009: 75%, 2010: 73%, 2011: 74%, 2012: 73%, 2013: 72%, 2014: 74%, 2015: 75%, 2016: 76%

6-year graduation: 2000: 28%, 2001: 32%, 2002: 33%, 2003: 35%, 2004: 35%, 2005: 33%, 2006: 40%, 2007: 44%, 2008: 46%, 2009: 46%, 2010: 49%, 2011: 47%

4-year graduation: 2004: 12%, 2005: 12%, 2006: 15%, 2007: 16%, 2008: 19%, 2009: 20%, 2010: 20%, 2011: 22%, 2012: 25%, 2013: 28%

Legend: 1-year retention | 4-year graduation | 6-year graduation

Indianapolis Only FTFT Cohort Retention and Graduation Rate (Bachelor's, Associate, and Certificate) Courtesy of Michele Hansen

Student-Institution Fit

Person-Environment Fit

- Holland's theory of work environments

Person-Person vs. Person-Situation

Needs-Supplies Fit

Temporal nature of fit

Student-Institution Fit in Higher Education Research

- Murray
- CCI / CUES
- Coyne
- Move toward engagement

Gilbreath, Kim, & Nichols (2011)

Derived Student-Institution Fit instrument

32 item instrument

"How important are the following to you?"

"To what degree does your institution provide these things?"

3 scales

Academic Environment

Social Environment

Physical Environment

Analysis

Polynomial regression

Satisfaction increases as needs approach supplies

Improved Satisfaction => Retention

Gilbreath, Kim, & Nichols (2011)

Item		Need Reliability[1]	Supply Reliability[1]
Academic Environment fit		0.59	0.72
A1	A scholarly/intellectual campus climate		
A2	State-of-the-art classrooms, labs, library		
A3	A highly regarded academic reputation		
A4	Great school size		
Social Environment fit		0.80	0.79
S1	Enjoyable social life		
S2	Sports and recreational opportunities		
S3	Great student body		
S4	A highly regarded athletic reputation		
S5	Great support services (e.g. academic counseling, health care, and placement center)		
S6	Great non-academic facilities (e.g. gyms, dining, and game room)		
S7	A diverse student body		
Physical Environment fit		0.54	0.62
P1	Great geographic location		
P2	A safe environment		
P3	A pleasing physical environment (aesthetics)		
P4	Convenient campus lay-out		
P5	Great affordability		

Notes: Adapted from Gilbreath, Kim, & Nichols (2011). [1] Cronbach alpha estimates obtained from Gilbreath, Kim, & Nichols (2011)

Bowman & Denson (2014)

"institutions could use the SIFI [Student-Institution Fit Instrument] as an early monitoring system to identify students who may be considering dropping out."

p.139

Question (for now)

Is the Gilbreath et. al instrument valid to be used with the population here at IUPUI?

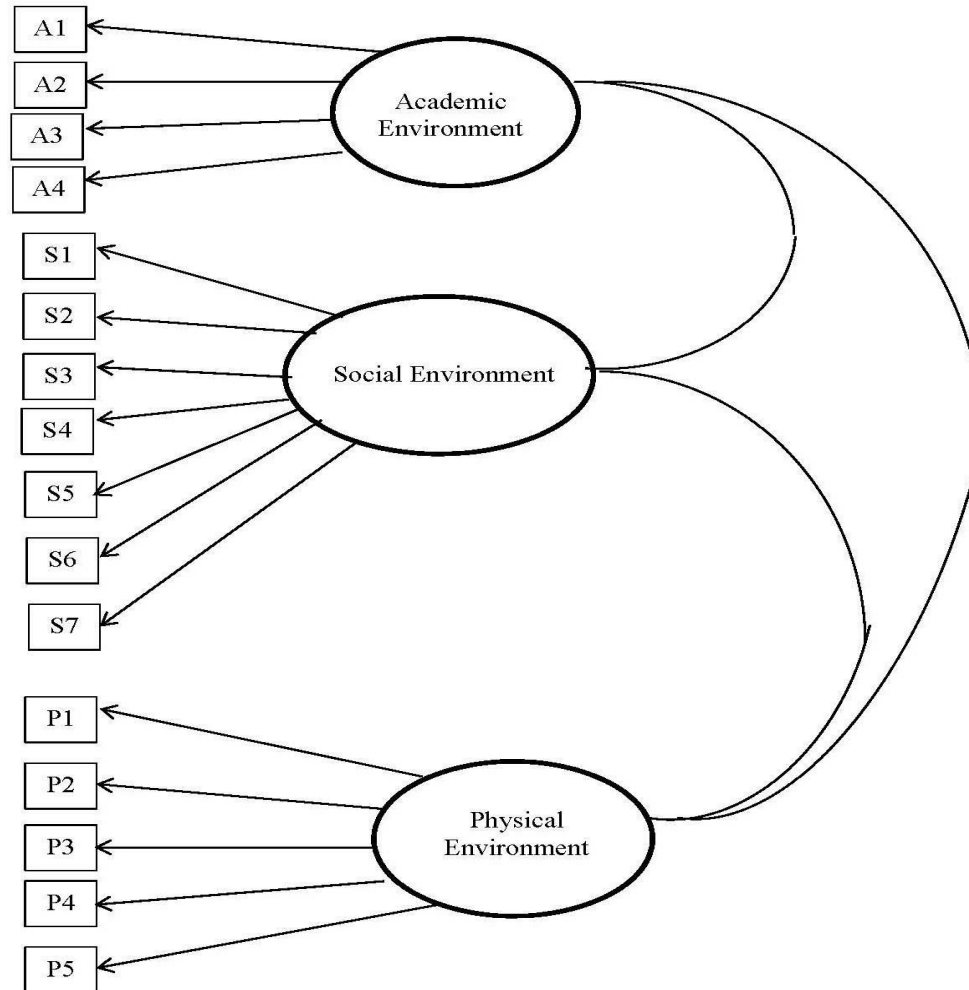# IUPUI Student-Institution Fit Survey

IUPUI Student-Institution Fit Survey

1. Gilbreath et. Al instrument

    – Needs

    – Supplies

2. Calculated overall level of fit

    – Abs(Supplies-needs)

3. Demographics

4. Open-ended items

    – "In order to improve this survey for future administrations, we would like to know a little bit more about what you thought of the items. Please describe how you would define each of the following."
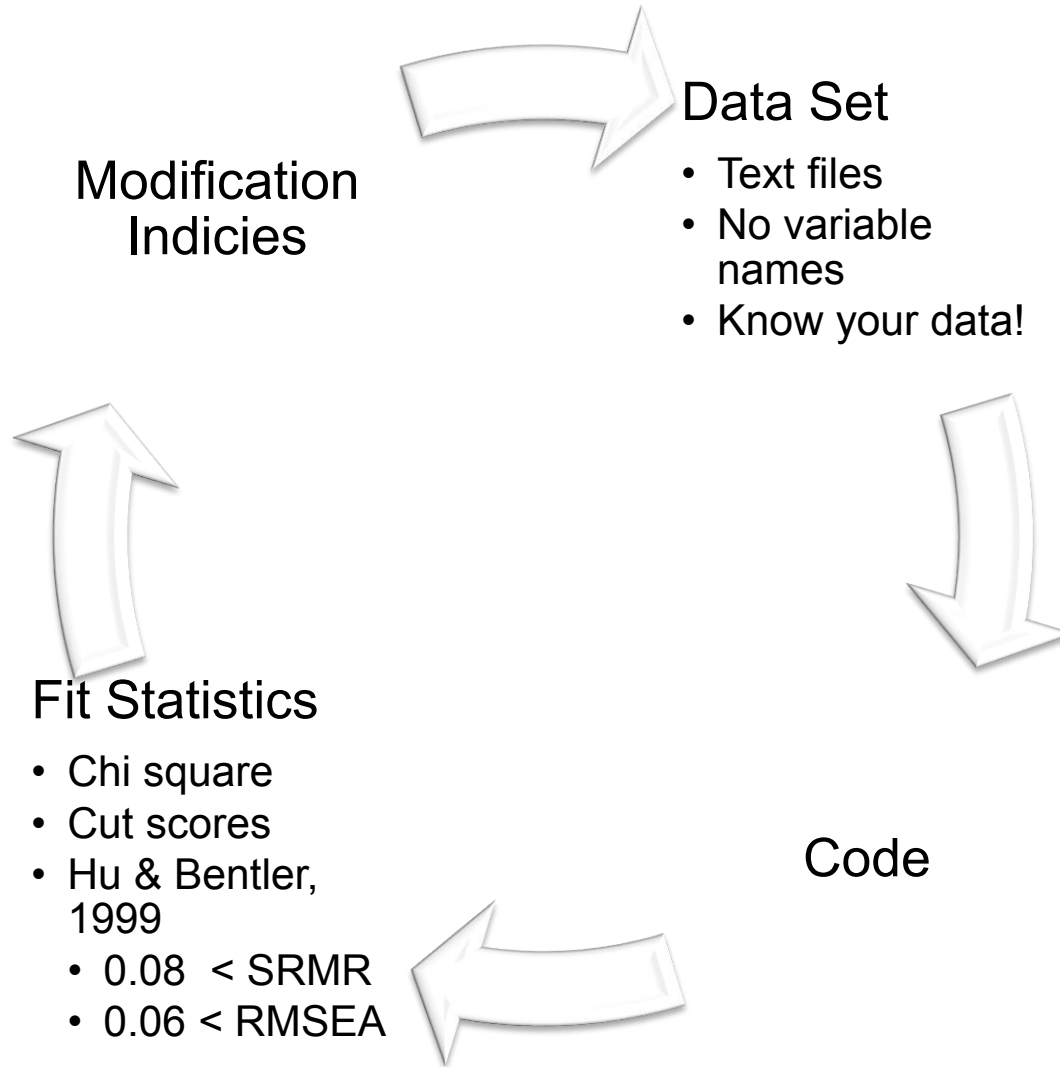
Testing the instrument

Confirmatory Factor Analysis

Proposed Model of Institutional Fit for Session

Adapted from Gilbreath, Kim, &Nichols, 2011

Conducting in Mplus

Data Set
- Text files
- No variable names
- Know your data!

Modification Indicies

Fit Statistics
- Chi square
- Cut scores
- Hu & Bentler, 1999
  - 0.08 < SRMR
  - 0.06 < RMSEA

Code

Mplus demonstration

Fit Statistics

Chi-Square Test of Model Fit

    Value   212.700
    Degrees of Freedom   101
    P-Value   0.0000

RMSEA (Root Mean Square Error Of Approximation)

    Estimate   0.079
    90 Percent C.I.   0.065 0.094
    Probability RMSEA <= .05   0.001

SRMR (Standardized Root Mean Square Residual)

    Value   0.070

Model Modification Indicies

1. NS2 [**Sports and Recreation Opportunities]** ON AEFIT   /

AEFIT   BY NS2   *12.327*   -1.728   -1.185   -0.928

2. NS5 [**Great support services (e.g. academic counseling, health care, and placement center)]** ON AEFIT   /

AEFIT   BY NS5   *25.213*   2.095   1.436   1.327

Comments – Great support services

- "Counseling, financial aid, test-taking programs"

- "Accessible tutoring, counselling, etc."

- "academic counseling"

- "RAC, BRC"

- "helpful counseling, tutoring, health care, social services"

- "There are plenty of opportunities to get help with your studies or classes"

- "MAC, consolers, etc."

- "caps, mac"

Comments - Great support services

- "Knowledgeable staff, and a good Tutor-Student ratio."

- "Easy access to help over any topic a student is struggling with that can help the student efficiently"

- "MAC, programs"

- "any type of mentors available"

- "Talking with my advisor"

- "available and well knowledge tutors"

- "advising sessions"

- "there is a good writing center to help international students or even local students with english writing"

Modification Indicies

NS2	WITH AEFIT	10.828	-0.191	-0.278	-0.253
NS5	WITH AEFIT	20.701	0.224	0.327	0.341
NS5	WITH SEFIT	23.666	-0.274	-0.375	-0.391
NS7	*WITH NS2*	11.370	0.381	0.381	0.282
NS9	WITH NS6	11.513	-0.273	-0.273	-0.298
NS11	WITH AEFIT	10.175	-0.180	-0.262	-0.270
NS12	*WITH NS9*	19.338	0.304	0.304	0.372

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[Great geographic location]   *WITH* *[State-of-the-art classrooms, labs, libraries]*   19.338   0.304   0.304   0.372

Comments about Geographic Location/State-of-the Art…

Classroom comment	Location comment
"Clean, well-organized areas where learning is enjoyable and not hindered by lack of resources or other facility issues."	"The campus is convenient for a multitude of living situations on campus and off, as well as being close to excellent community resources, businesses, and retailers."
"nice classrooms"	"Indy is a nice location"
"High-tech & comfortable rooms"	"Decent weather, good location in city"
"The newest technology and updated information that works and is easily usable by students and instructors."	"Campus location is easily accessible. "
Current layout is great.	Current location works.
Good facilities, good equipment and cleanliness. A good layout as well.	A place that can interactive within the campus and provides job opportunities, internships, volunteer service, etc.

Mplus demonstration

(Try 2)

Attempt 2 Fit Statistics

Chi-Square Test of Model Fit

     Value   156.563
     Degrees of Freedom   98
     P-Value   0.0002

RMSEA (Root Mean Square Error Of Approximation)

     Estimate   0.058
     90 Percent C.I.   0.041 0.075
     Probability RMSEA <= .05   0.202

Looks like this will work!

SRMR (Standardized Root Mean Square Residual)
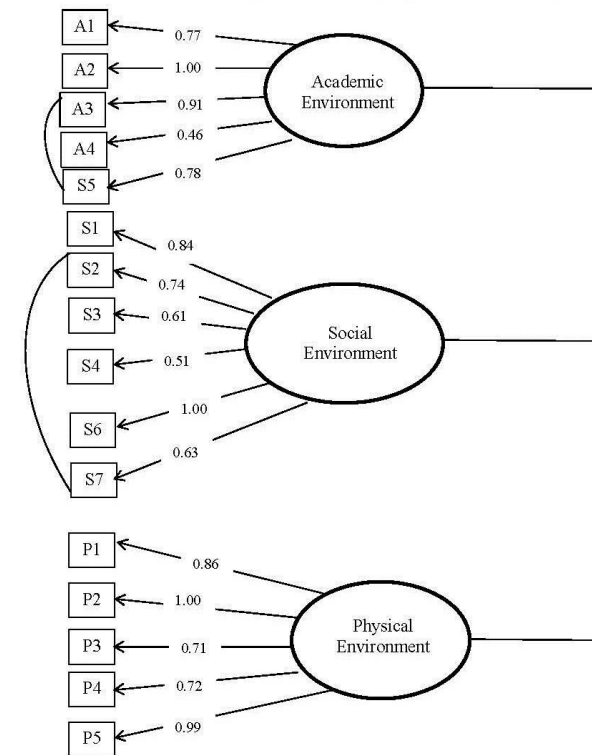
     Value   0.064

So what did we do?

Final model

- Revised Academic Environment and Social Environment Fit

- Physical Environment Fit remains same

- Alpha levels were another story

- High interfactor correlations

Figure 5
Final Model of Institutional Fit for Question 1 with Coefficients
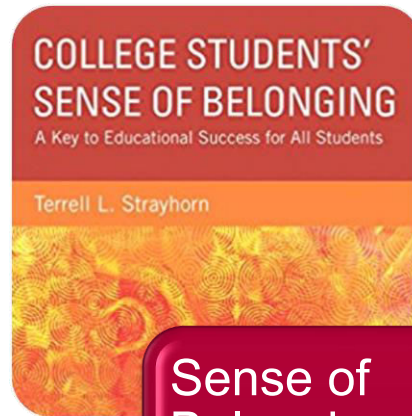
Original model adapted from Gilbreath, Kim, & Nichols, 2011

Since Administration

Fit and Retention
- Social Environment Fit affects retention
- Effect lower with SES

COLLEGE STUDENTS' SENSE OF BELONGING
A Key to Educational Success for All Students

Terrell L. Strayhorn

Sense of Belonging
- Gathering more evidence
- Relationship with retention

Better scales
- Physical Environment
- Academic Environment