The Relationships Among Students' Background, Academic Disengagement (ADEG), and Learning Outcomes

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Abstract

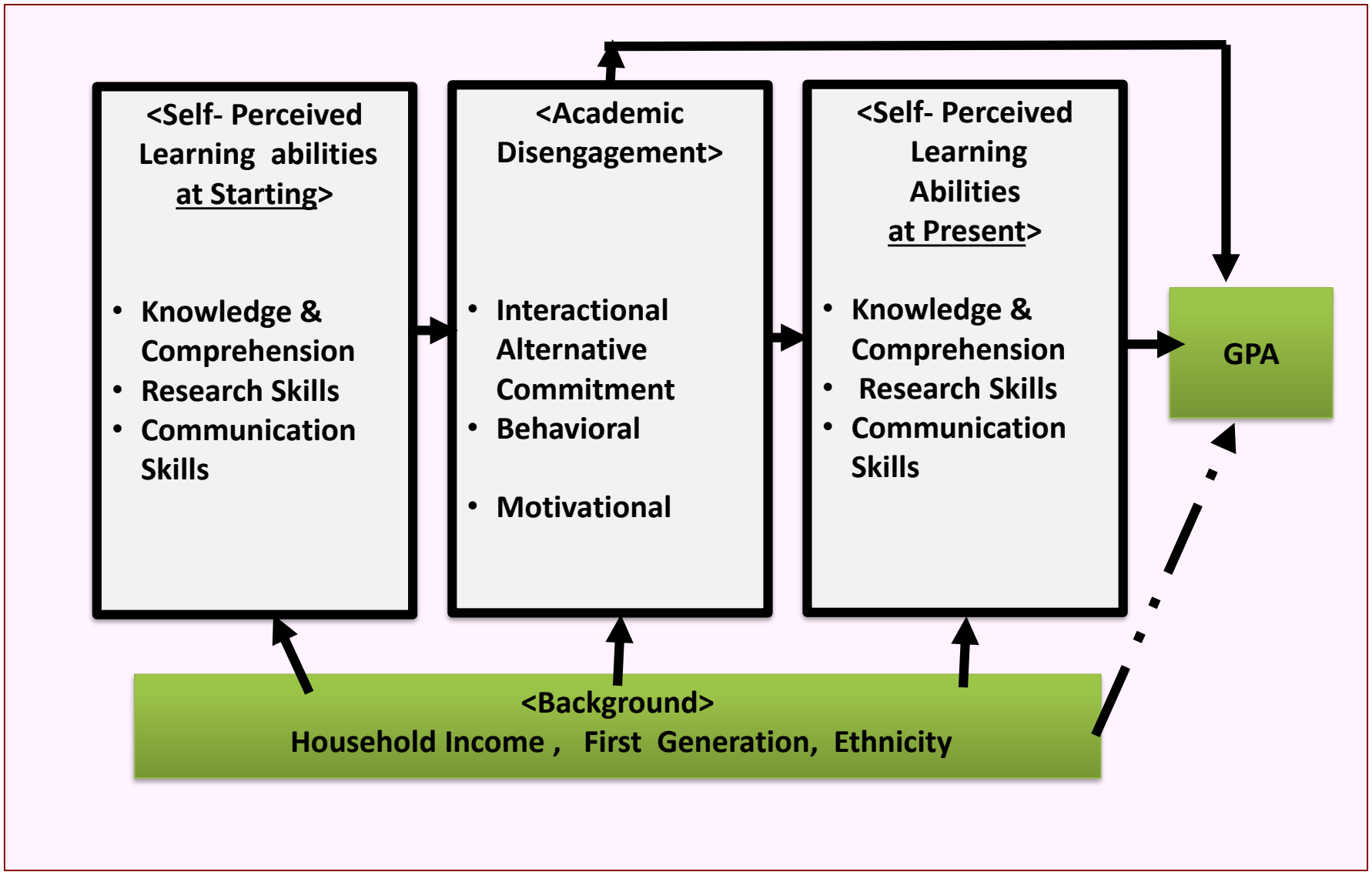
This study pursued two study purposes: (a) to specify the factor structure of academic disengagement (ADEG) and self-reported learning abilities (SRLA) in the Student Experience in the Research University survey (SERU) through the exploratory and confirmatory factor analysis (EFA and CFA), and (b) to examine the relationships between ADEG, SRLA, and GPA after controlling students' background variables(i.e., household income, the first generation, and ethnic minority) by using structural equation modeling (SEM).

EFA and CFA yielded four disengagement factors: Interactive Disengagement (ID), Alternative Commitment (AC), Motivational Disengagement (MD), and Behavioral Disengagement (BD). Also, we specified three factors of self-perceived learning abilities at starting (SPLA-S) and at present (SPLA-P) , respectively, during their enrollment of university: Knowledge and Comprehension Skills (KCS), Research Skills (RS), and Communication Skills (CS). Most impacts of the students' background on the measured constructs and GPA were statistically significant, but all effects were weak. Also, we found the most factors in the paths reaching GPA: on ADEG was CS of SRLA-S; on SRLA-P was ID of ADEG; and on GPA were KCS of SRLA-P and MD of ADEG.

Research Questions

- What are the adequate measurement models of ADEG and SPLA in the SERU?
- How is students' family background (1st generation, racial minorities, and parent's annual income) related to ADEG and SPLA?
- How does students' ADEG affect their SPLA and GPA from their initially self- perceived learning abilities when controlling family backgrounds and ethnicity ?

Research Model



Analyses

- Testing for Normality
- Missing Data were addressed
  through Full Information Maximum Likelihood (FIML)
- Testing for Reliabilities of Internal Consistency
- Exploratory Factor Analysis (EFA)
- : Maximum Likelihood Estimation (MLE) with Promax Rotation,
  Structure Matrix
- Confirmatory Factor Analysis (CFA)

  : Maximum Likelihood Estimation
- Structural Equation Modeling (SEM)

Data Source

- 2012 Student Experience in the Research University (SERU)
- 42263 students in Six universities: Minnesota, Pittsburgh, Rutgers, South Carolina, Texas A&M, Virginia

Academic Disengagement -1

Interactive Disengagement	CFA Factor Loadings
Low Contributing to class discussion	.86
Low Asking an insightful question in class	.86
Low Bring up ideas or concepts from different courses during class discussions	.85
Low Interacted with faculty during lecture class sessions	.79
Low found a course so interesting that you did more work than was required	.54
Low talked with the instructor outside of class about issues and concepts derived from a course	.56
Low Communicating with Faculty	.49

Alternative Commitment	CFA Factor Loadings
Socializing with friends	.81
Using the computer or other electronic device for non-academic purposes (e.g., games, texting, social networking)	.52
Partying	.56
Watching TV	.41

Academic Disengagement -2

Behavioral Disengagement		CFA 5Factor Multi-Level	
Class_ Irresponsibility	Gone to class without completing assigned reading	.74	.48
	Gone to class unprepared	.87	
	Low reading completion	.41	
	Skipped class	.51	
	Turned in a course assignment late	.40	
Time-Use	Low study time	.76	.49
	Low spent time in attending classes, discussion sections or labs	.45	

Motivational Disengagement (Academic Goal Orientation)	CFA Factor Loadings
Low value for preparing for graduate or professional school	.54
Low Value for high GPA	,58
Low Value for an in-depth understanding of a specific field of study	.42

Students' Perceived Learning Abilities

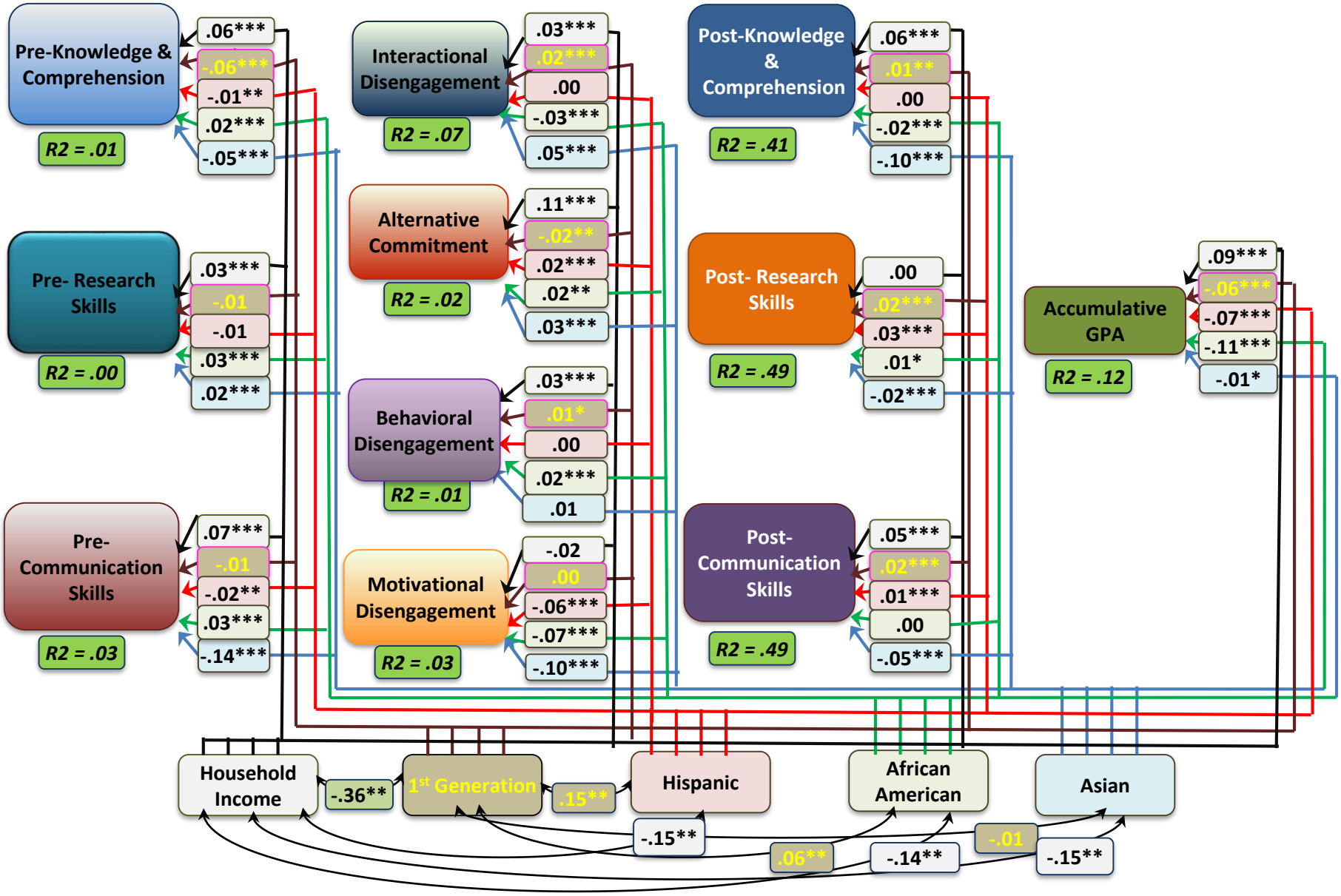
Knowledge & Comprehension	CFA Factor Loadings	
	At Starting	At Present
Analytical and critical thinking skills	.77	.76
Ability to read and comprehend academic material	.77	.75
Ability to be clear and effective when writing	.73	.70
Understanding of a specific field of study - When you started here	.63	.65
Ability to understand international perspectives (economic, political, social, cultural)	.58	54
Quantitative (mathematical and statistical) skills	.40	.32
Research Skills		
Interpersonal (social) skills	.90	.86
Ability to lead	.84	.77
Ability to prepare and make a presentation	.55	.55
Ability to speak clearly and effectively in English	.48	.48
Communication Skills		
Interpersonal (social) skills	.66	.69
Ability to lead	.67	.70
Ability to prepare and make a presentation	.78	.76
Ability to speak clearly and effectively in English	.51	.56

Measurement Model Fit

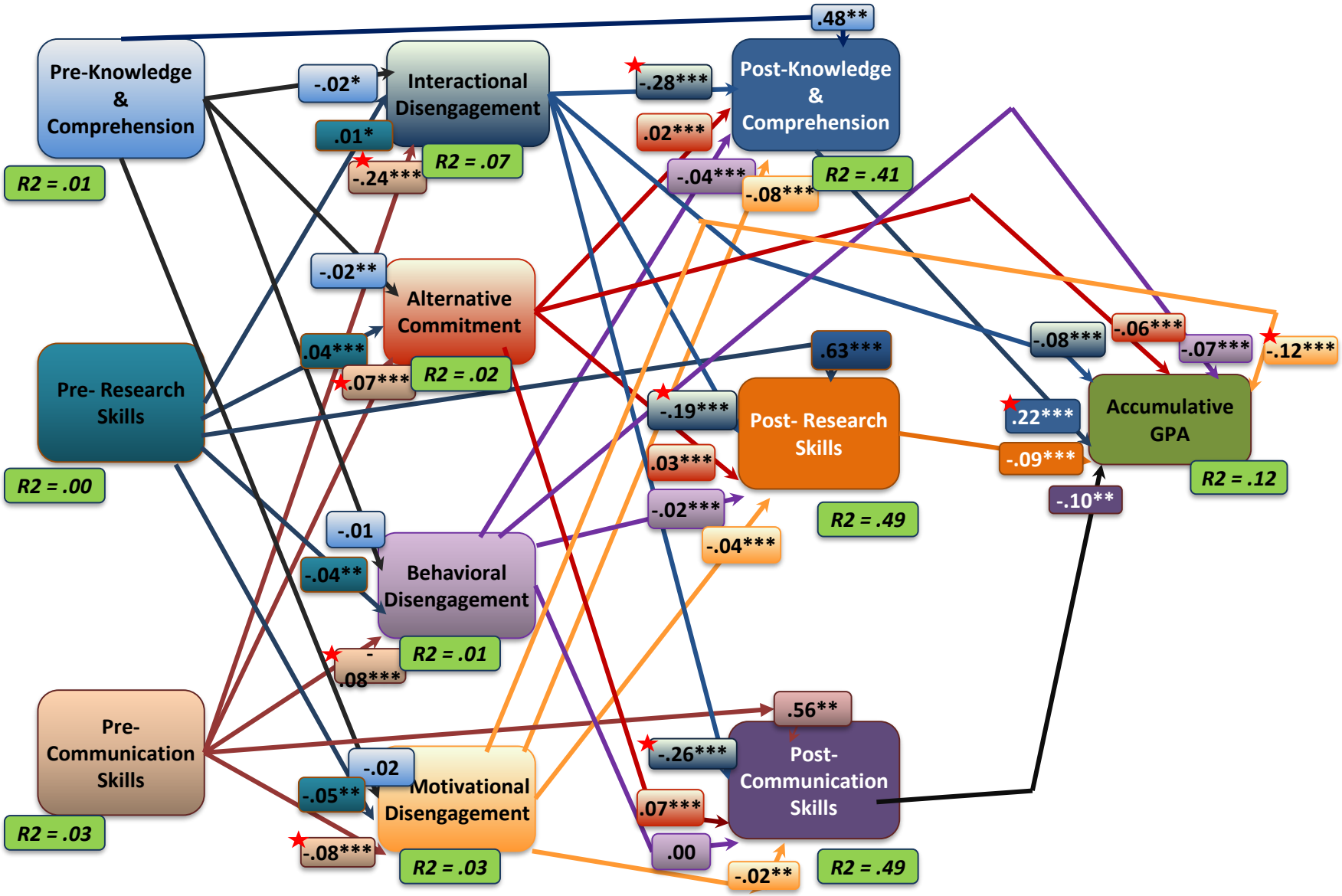
Academic Disengagement	5Factor_Multi-Leveled 21_Variables
X2/DF	22905.627/177
CFI	.909
RMSEA	.055

Students' Perceived Learning Abilities	At Starting	At Present
X2/DF	15869.694/73	14189.934/73
CFI	.915	.917
RMSEA	.072	.068

The Effects of Students' Backgrounds



Path to Learning Outcomes



Path Analysis

- Model Fit - X2/DF: 1961.23/12; CFI: .99; RMSEA: .06
- * $p < .05$, two-tailed.; ** $p < .01$, two-tailed.; *** $p < .001$, two-tailed.
- Each construct value (factor score) was composed of 1) standardized item scores to address the difference in item-response scale, 2) the mean of item scores weighted by factor loadings, and 3) the resulting scores standardized into a mean of 5 and a standard deviation of 2 .
- The SEM includes the error-correlations, but not shown in the figure .
- The color of each construct box is correspondent with that of each path coefficient box
- The numbers following "★" indicate the strongest impact of each domain on each construct .

Findings & Implications

Academic disengagement has its own factorial structure and dynamic. By understanding the circumstances of disengagement and identifying students most at risk for disengaging academically, colleges and universities will be better able to engage students academically.

- Students' economic status positively but weakly influenced their perceptions of learning abilities and GPA as well.
- First-generation students were more likely to be disengaged in academic interaction and behavior, but less likely to involve alternative activities than non-first generation students, and tend to rate their learning abilities at present higher than at starting their college
- Hispanic students tended to perceive their gains of learning abilities throughout college.
- Asian students were more likely to spend their interests and resources in alternative activities than academic purposes.
- African American students were more likely to take irresponsibility for classes, resulting in poor GPA
- Starting with weaker self-belief on their communication skill was more likely to deteriorate students' academic interactions and their beliefs on KCS, and finally yield poor GPA. Also, the students with less academic motivation tended to gain lower GPA.

Therefore,

- Relief from funding pressure would help students gain better learning outcomes.
- Interactive engagement for Asian students, and behavioral engagement for African American should be improved for their better learning outcomes.
- Students should be encouraged to engage interactively, pursuing their academic goals for their successful learning outcomes.