

Effects of Academic Preparation, Motivation, and Interest-Major Congruence on First-Year Academic Performance and Timely Degree Attainment at Two- and Four-Year Institutions

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Outline

- Background and purpose of the study
- Research data and design
- Study results
- Conclusions
- Implications
- Future research

Background

- Few U.S. college students complete degrees in timely fashion
 - Six-year degree completion rates
 - 58% for students entering 4-year institution
 - 38% for students entering 2-year institution
- Many new students ill-prepared for college
- Timely degree attainment - important outcome
 - Financial well-being
 - Equality of postsecondary access

Prior Research

- Significance of first-year academic performance on longer-term college success
- Other factors related to longer-term college success
 - Academic preparation
 - Motivation
 - Interest-major congruence
- Few studies included all these factors

Purpose of the Study

To examine the simultaneous effects of academic preparation, motivation, and interest-major congruence on first-year academic performance and timely degree attainment.

Study Data

- 3,860 ACT-tested students; fall 2003 first-time, full-time, degree-seeking college students
- College outcomes
 - Cumulative GPA, credit hours earned, enrollment status, and academic major
 - Collected at four time points: spring 2004, fall 2004, fall 2005, and summer 2007
- Degree data supplemented with data from National Student Clearinghouse

Study Data (cont.)

- 15 four-year institutions:
 - Minimum four years of follow-up data
 - 3,072 students
 - 80% “traditional” admissions policies
- 13 two-year institutions:
 - Minimum two years of follow-up data
 - 788 students
 - All open/liberal admissions policies

Study Outcomes

- First-year academic performance
 - Measured by first-year college cumulative GPA
- Timely degree completion
 - Bachelor's degree within four years
 - Associate's degree or Certificate within two years

Instruments and Measures

- Interest-major congruence
 - UNIACT Interest Inventory
 - Completed as part of ACT registration
 - Six basic types of vocational interests (correspond to interest types in Holland's theory of careers)
 - Holland-type major profile
 - Developed in separate study
 - Students grouped by academic major (using CIP codes)
 - Averages of six UNIACT scores for students in major
 - Correlation between individual interest inventory scores and major profile

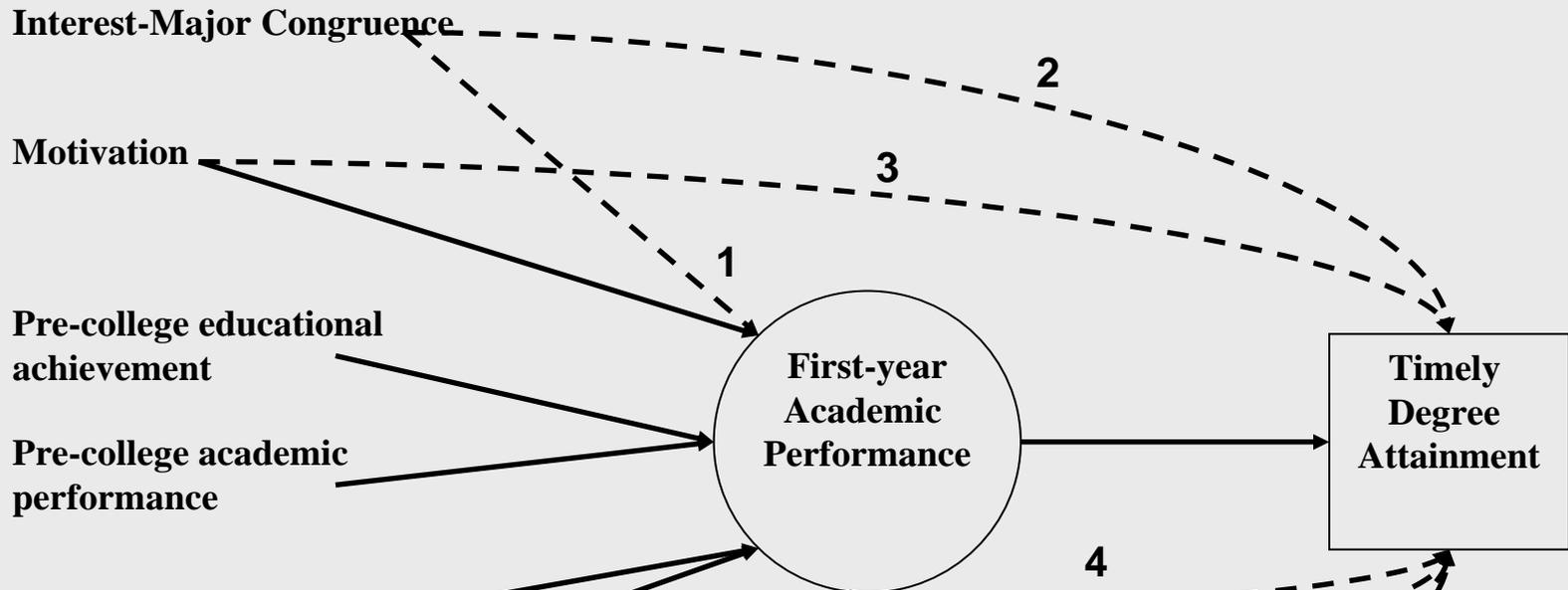
Instruments and Measures (cont.)

- Motivation
 - Academic Discipline score from Student Readiness Inventory (SRI)
 - SRI completed prior to or within first six weeks of Fall 2003 semester
- Academic preparation
 - Pre-college educational achievement (ACT Composite score)
 - Pre-college academic performance (self-report HSGPA)

Instruments and Measures (cont.)

- Sociodemographic measures
 - Collected when students took the SRI
 - Gender
 - Race/ethnicity
 - Parental income
 - Parental highest education level
 - First generation student

Expected and Hypothesized Paths to Outcomes



Solid lines represent established paths.
Dashed lines represent hypothesized paths.

Methodology

- Path models
 - By institutional type
 - Accounted for students nested within initial institution
 - Corrected for measurement error
 - Fit using WinBUGS software

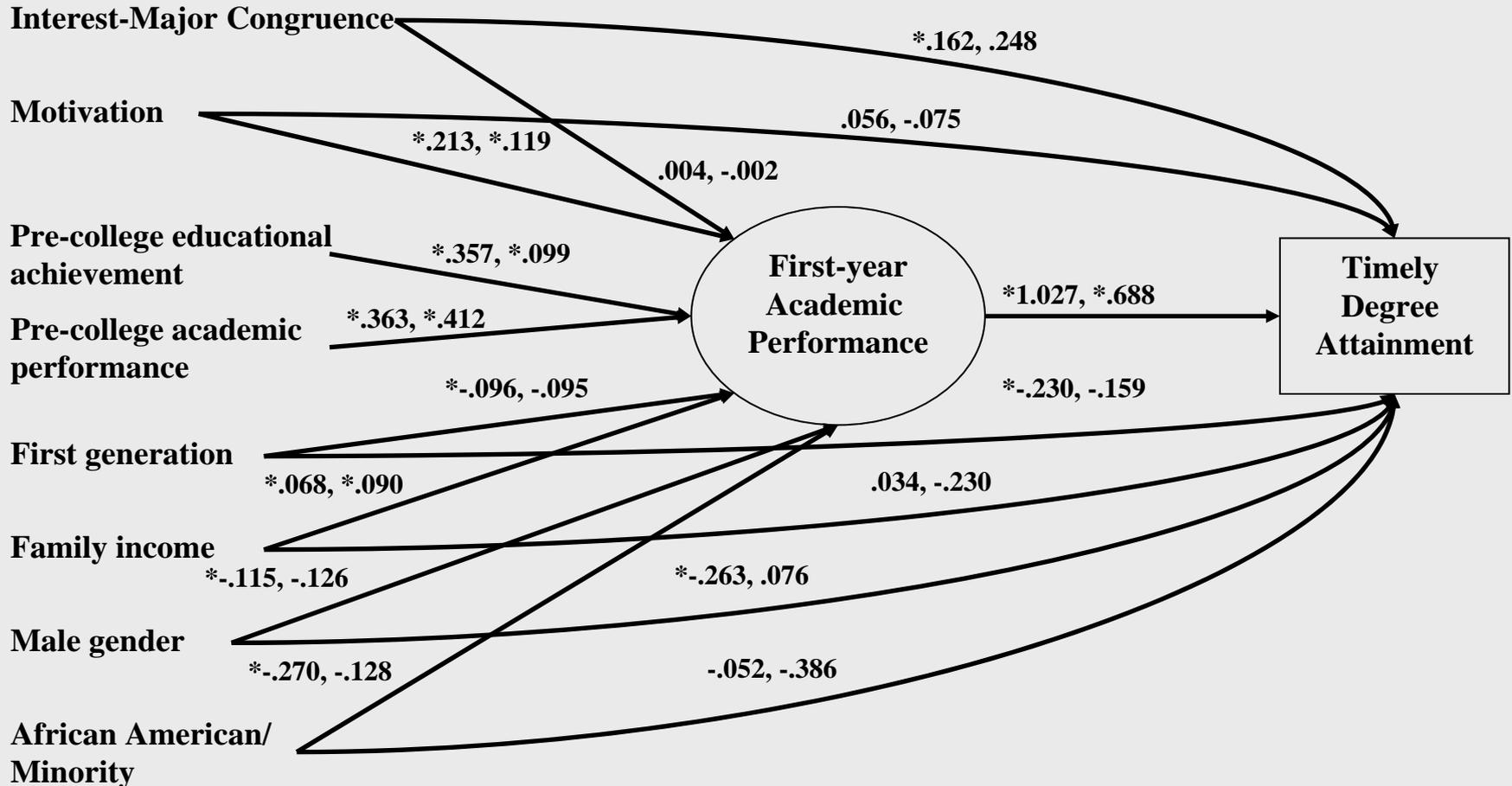
Results – Student Characteristics

(Average/Percentage)

<u>Characteristic</u>	<u>4-year</u>	<u>2-year</u>
Sociodemographic characteristics		
Female	60%	56%
Minority	19%	13%
White	76%	84%
First generation	45%	58%
Academic preparation		
ACT Composite	21.2	18.8
HSGPA	3.31	2.86
College outcomes		
First-year GPA	2.73	2.47
Timely degree completion	33%	12%

Minority includes African American and Hispanic students.

Results – Path Model



Weights for estimated paths: 4-year, 2-year
 Significant paths are marked with an asterisk (*) 15

Results – First-Year Academic Performance

- First-year academic performance influenced by:
 - Motivation (+)
 - Pre-college educational achievement (+)
 - Pre-college academic performance (+)
 - Sociodemographic factors (first three significant for 4-year sample only)
 - First generation students (-)
 - Male gender (-)
 - African American students (-)
 - Family income (+)
 - Not influenced by interest-major congruence

Results – Timely Degree Attainment

- Timely degree attainment influenced by:
 - First-year academic performance (+; largest effect)
 - Interest-major congruence (+)
 - Sociodemographic factors (first two significant for four-year sample only)
 - First generation (-)
 - Male gender (-)
 - Race/ethnicity and family income indirectly, not directly
 - Motivation indirect effect only

Conclusions

- Hypothesis 1: Interest-major congruence has direct effect on first-year academic performance – not supported.
 - Unexpected finding
 - Conflicts with past research
- Hypothesis 2: Interest-major congruence has direct effect on timely degree completion – supported.
 - Consistent with broader workplace literature
 - Two hypothesized mechanisms
 - Persistence in college major
 - Enthusiasm for coursework

Conclusions (cont.)

- Hypothesis 3: Motivation has direct effect on timely degree completion – not supported.
 - Indirect effect via first-year academic performance
- Hypothesis 4: Effects of sociodemographic characteristics persist beyond first-year academic performance – partially supported.
 - First generation and male students

Conclusions (cont.)

- Effect of first-year academic performance on timely degree attainment
 - Consistent with prior research on longer-term college success
 - Students need to be prepared for their first-year college coursework
 - Importance of high school academic preparation

Implications of Research

- Importance of effective career and educational planning
 - Benefits of
 - Actively promote timely degree completion
 - Greater exploration of academic major choices
 - Interest-major correlations as useful counseling tool
 - Incorporated into Student Affairs programs
 - Used in middle and/or high school as students begin to explore majors and careers

Implications of Research (cont.)

- Retention efforts - incorporate approaches that promote academic success through both academic and motivational strategies
 - Academic skills are critical
 - Measure psychosocial factors (e.g., motivation) to identify at-risk students
 - Academic Discipline measures motivational traits and skills
 - Improves with proper training and practice
- Programs geared toward first-generation students continue after freshman year

Study Limitations

- Limited sample size for two-year institutions
 - Generalizability to all two-year entrants nationwide
- Reciprocal development of interests and motivation not addressed
 - Individual interest vs. situational interest
 - Later measure of motivation

Future Research

Investigate:

- Whether study results invariant across student subgroups (moderator analyses)
- Critical components of training that improve students' motivational skills
 - Overcome boredom and frustration
 - Manage multiple deadlines
- What works in promoting postsecondary success across the education pipeline

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