

Overview of Research Activities

Presentation at the IACC-ISU Academic Leaders Roundtable
Larry Ebbers, Frankie Santos Laanan, Linda Serra Hagedorn

Iowa State University
Maple-Willow Larch Commons
February 4, 2011



Introduction

- Overview of OCCRP Folder
- CCLP Academic Programs
- CCLP Graduates and Dissertation Topics
- Iowa Community College Faculty Survey
- ISU NSSE Studies: Transfer Students
- Current and Future Collaboration with Iowa Area Community Colleges
- Q & A

CCLP Academic Programs

- CLIC and LINC
- Master's Degree Program
 - Leadership
 - Teaching and Learning
 - CTE and STEM
- Ph.D., Educational Leadership
 - Emphasis in Community College Leadership

www.cclp.hs.iastate.edu

CCLP Dissertation Topics

- Academic Success
- Access
- Accreditation
- Career and Technical Education
- Dual Enrollment
- Faculty, Staff, Professional Development
- Health Education and Nursing
- Information Literacy
- Information Technology
- Leadership
- Learning Communities
- Student Retention and Persistence
- Transfer Students
- Workforce Development

Current Study

Iowa Community College Faculty Survey (full-time)

- Three doctoral student dissertations:
 - Rogotzke [NIACC], Bradley [SWCC] & Miller [IHCC]
- Recruitment of participants (*request support and assistance*)
- Spring 2011 survey administration
- Survey Contents:
 - Employment Background
 - Responsibilities and Workload
 - Teaching and Learning
 - Professional Development
 - Student Relations
 - Partnerships
 - Job Choice and Satisfaction
 - Open-Ended Questions

Topics:

- Profile and demographics
- STEM issues
- Faculty role in STEM education
- Professional development

Current Studies: Hagedorn

Iowa Community College

- Flow of GED graduates to Iowa community colleges
 - Data Sources: Iowa DE CCWP, GED data

Achieving the Dream

National Pell Study

- Effects of increasing Pell and CC student success
 - Study of Iowa community colleges

Topics:

- GED demographics
- GED Flow to community colleges
- Student success outcomes (e.g., retention, transfer, degree/certificate completion, etc.)

About OCCRP

- The Office of Community College Research and Policy (OCCRP) at Iowa State University is focused on *creating, sharing, and applying knowledge in the context of community college education*.
- The mission of the OCCRP is to *articulate and analyze the issues affecting policy and practice* by conducting rigorous research which impacts students, faculty, administrators, and policymakers.
- The OCCRP is *committed to sharing our research with diverse constituents* through dissemination efforts such as publications, conference presentations, and professional workshops



Collaboration with IA CCs

National Science Foundation

- Student Enrollment and Engagement Through Connections [SEEC].
 - Iowa State University College of Engineering and Des Moines Area Community College [DMAACC]

Future Collaboration

- NSF grants: research, programs, etc.
- Other research collaboration

A Study of Student Engagement and Satisfaction: **An Examination of Vertical and Horizontal Transfers at a Large Research University**

Frankie Santos Laanan
Yi (Leaf) Zhang
Iowa State University

February 4, 2011



Purpose of Study

- To identify differences between *vertical* and *horizontal* transfer students regarding engagement and overall satisfaction.
- To better understand university experiences of *vertical* and *horizontal* transfer students.
- To explore factors that influence *vertical* and *horizontal* transfer students' overall satisfaction with the university.

Research Questions

- What are the demographic characteristics of vertical and horizontal transfers at a large research university in the Midwest?
- To what extent do vertical transfers differ from horizontal transfers in:
 - student-faculty interaction
 - quality of campus relationships
 - institutional support
 - enhanced learning experience, and
 - overall satisfaction with the university
- What factors predict vertical and horizontal transfer students' overall satisfaction?

Relevant Literature

- Examining the Transfer Student Experience: Interaction with Faculty, Campus Relationship, and Overall Satisfaction (McCormick, et al., 2009)
- A Study of Student Engagement and Satisfaction: An Examination of Vertical and Horizontal Transfers at a Large Research University (Laanan & Zhang, 2010)
- 148,292 seniors, from 712 four-year institutions
- 2008 NSSE data
- Vertical, horizontal transfers, and native students
- **NSSE benchmarks**
- 1156 seniors from one four-year institution
- 2005-2009 NSSE data
- Vertical and horizontal students
- **Constructs emerged from exploratory factor analysis**

Theoretical Framework

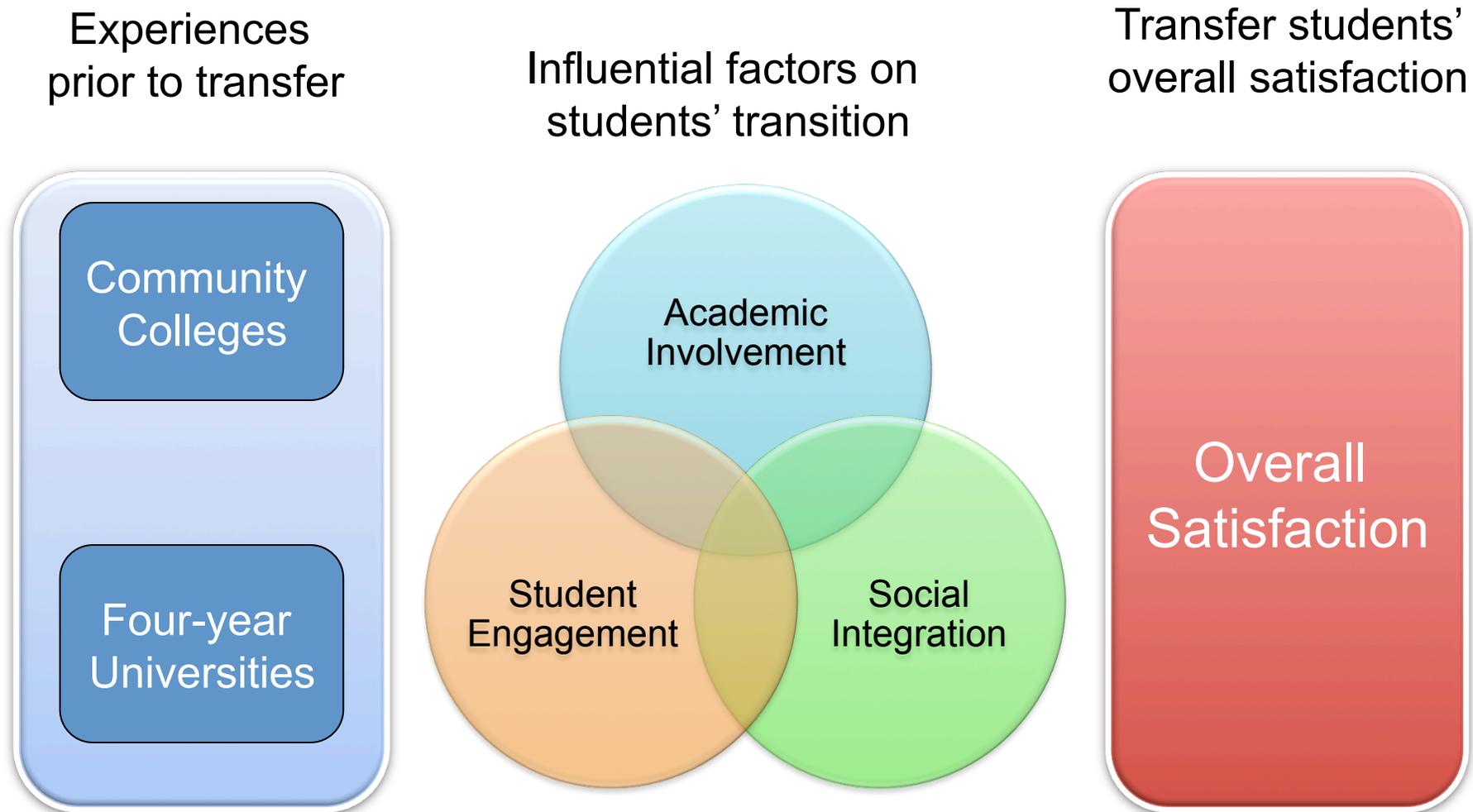


Figure 1. Theoretical framework of transfer student experiences

Methodology

- **Data Source:** 2005-2009 NSSE in a large research university in the Midwest.
- **National Survey of Student Engagement (NSSE)**
 - A national survey first administered in 2000
 - Random samples of first-year and senior students
 - Assesses college student experiences across different types of institutions in the U.S. and Canada:
 - Demographics
 - Enrollment characteristics
 - Academic challenges
 - Interaction with faculty
 - Relationship with peers, faculty, and administrators
 - Overall satisfaction of college experience
- **Response Rates:**
 - 31.9% (2005); 40.6% (2006); 24.7% (2007); 30.6% (2008); 24.0% (2009)

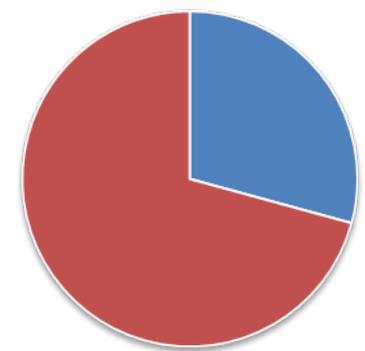
Methodology

- Definition
 - **Vertical transfers:** seniors who *only* indicated attending a community or junior college prior to the university
 - **Horizontal transfers:** seniors who *only* indicated attending another four-year college prior to the university
- Sample

Table 1. *Sample Summary*

Transfer Type	2005	2006	2007	2008	2009	Total
Horizontal	55	62	71	88	62	338
Vertical	144	204	149	183	138	818
Total	199	266	220	271	200	1156

Transfer Type



■ Horizontal ■ Vertical

Hypothetical Model

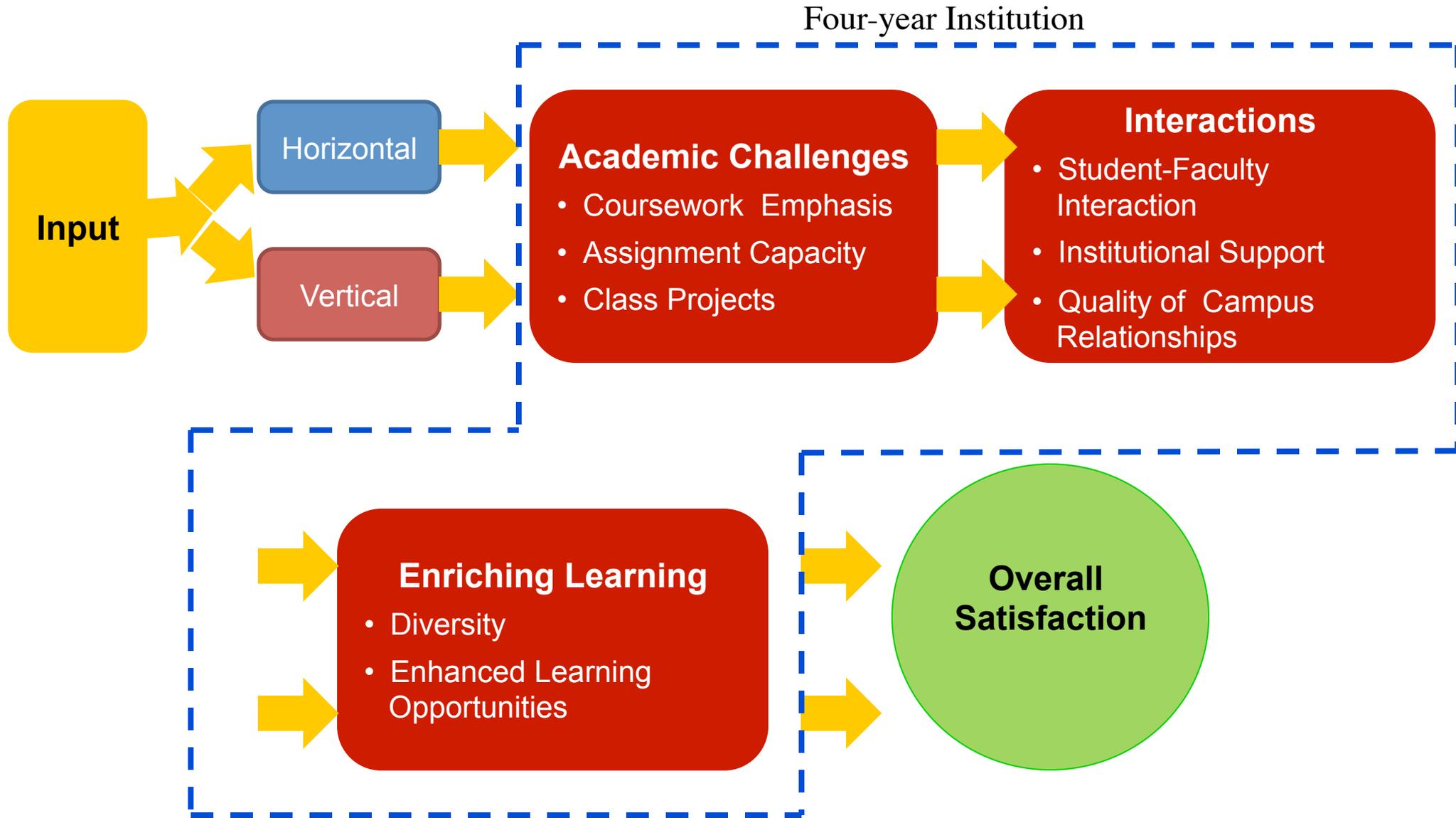


Figure 2. Hypothetical model of horizontal & vertical transfer students

Results

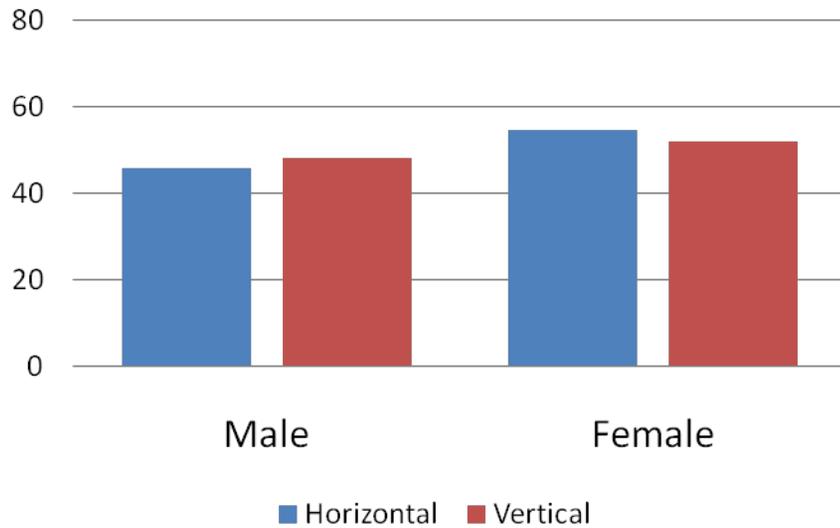
Table 2. *Exploratory Factor Analysis*

Construct	No. of Items	α
Coursework Emphasis	4	.83
Assignment Capacity	4	.64
Class Projects	3	.60
Student-Faculty Interaction	4	.72
Institutional Support	4	.79
Campus Relationships	3	.69
Diversity	2	.79
Enhanced Learning	3	.52
Overall Satisfaction	2	.78

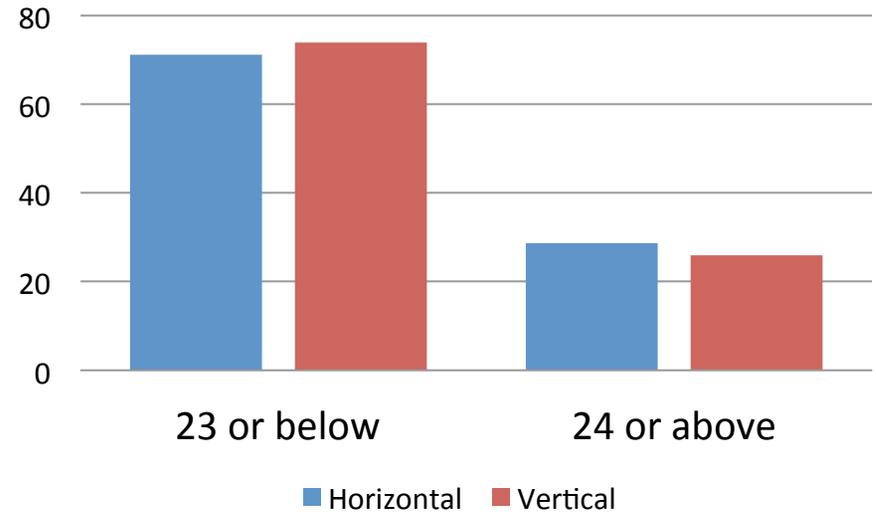
13. How would you evaluate your entire educational experience at this institution?
14. If you could start over again, would you go to the same institution you are now attending?
1=Poor; 2=Fair; 3=Good; 4=Excellent

Results

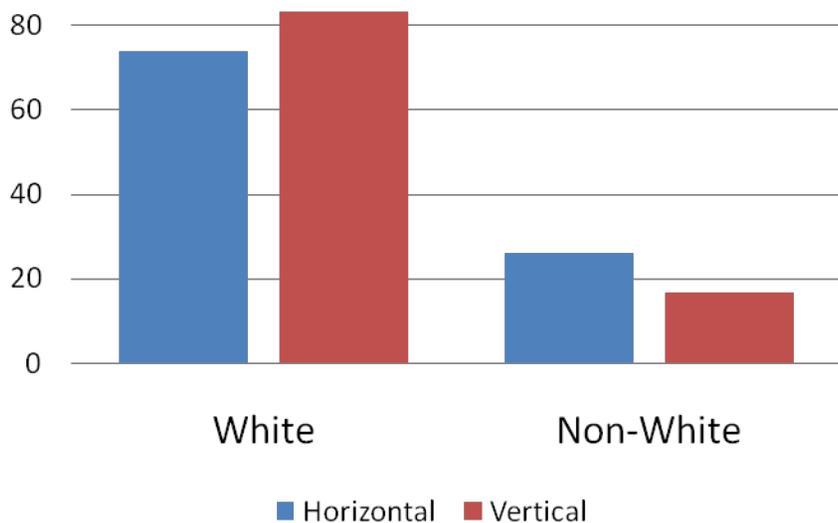
Gender



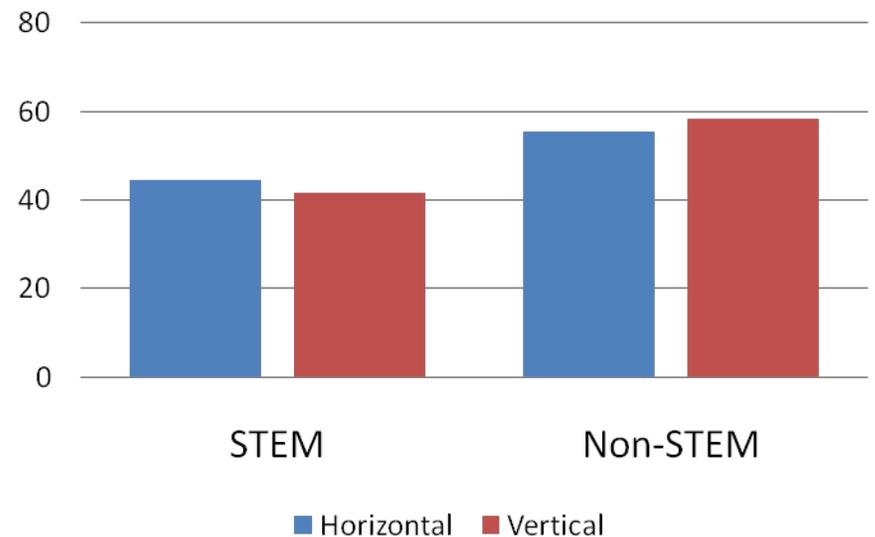
Age



Ethnicity

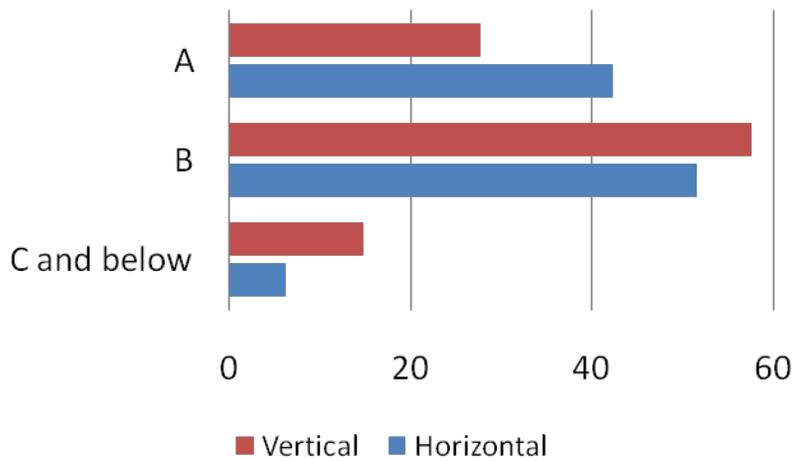


Major

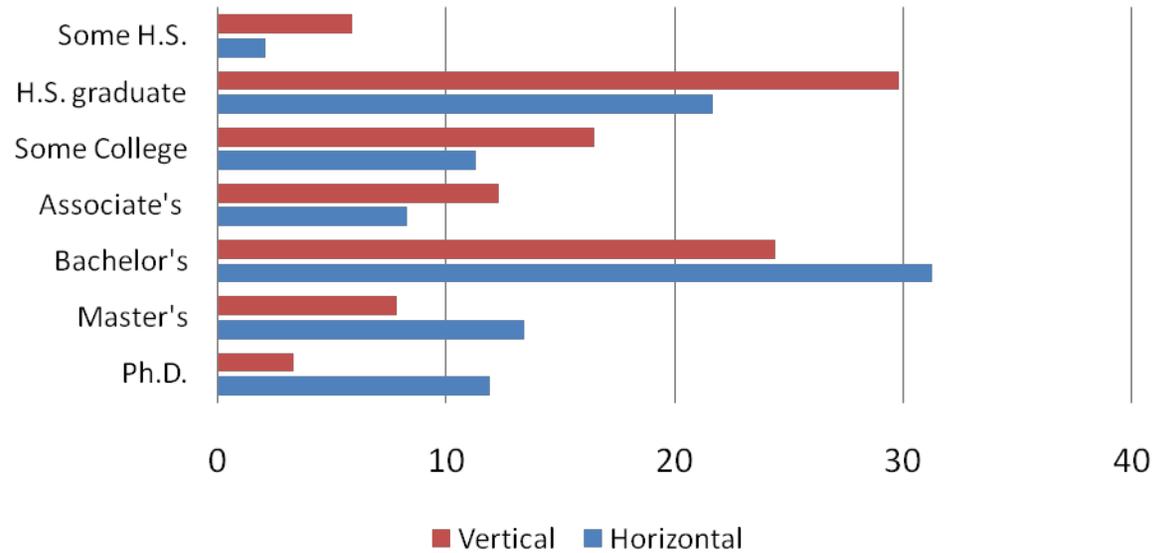


Results

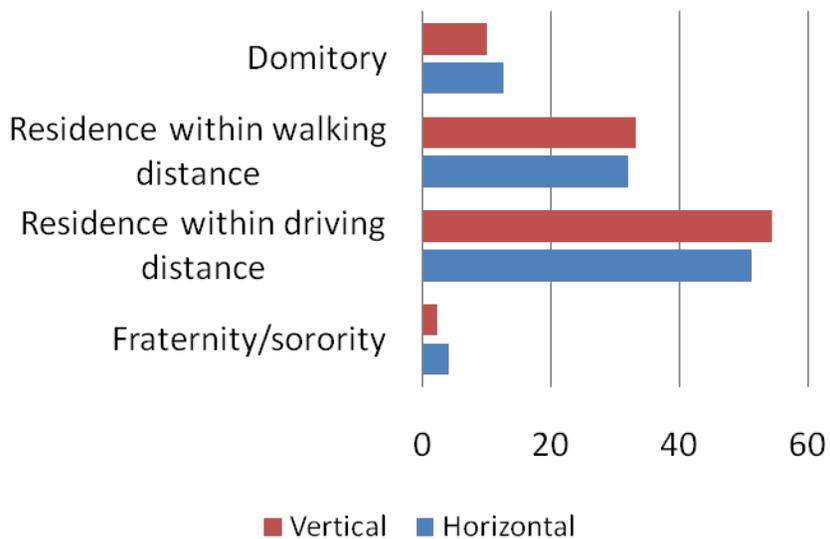
Grades



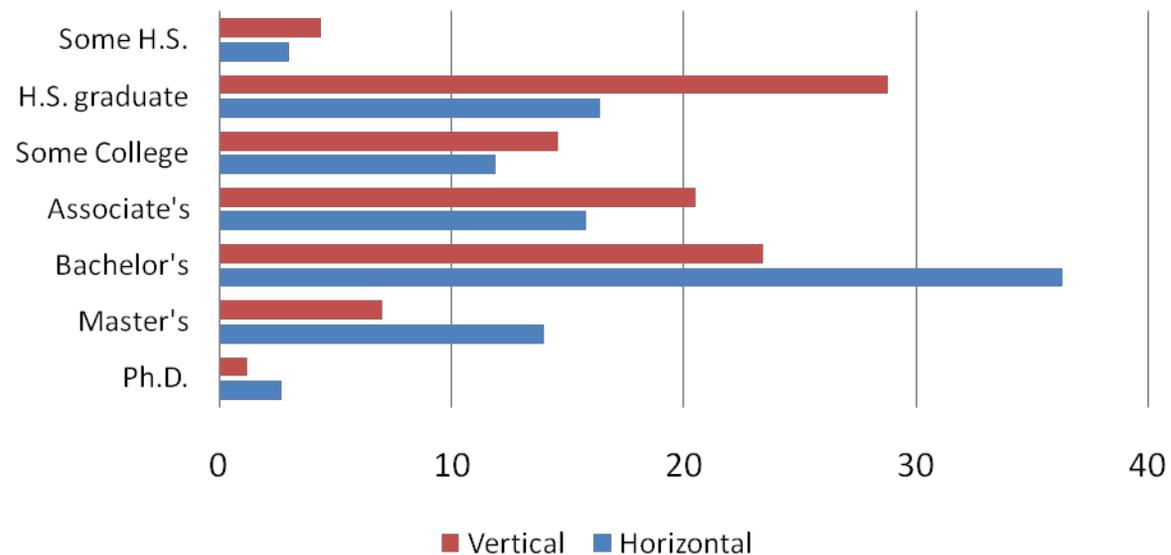
Father's Education



Housing



Mother's Education



Results

Table 3. *Comparison between Horizontal and Vertical Transfers in Student-Faculty Interaction, Institutional Support, Quality of Campus Relationships, Enhanced Learning Opportunities, and Overall Satisfaction.*

Variable	Scale	Mean		t	df	p	95% Confidence Interval
		Horizontal	Vertical				
Student-Faculty Interaction	4-16	9.61	9.43	1.07	600	.286	[-.14, .48]
Institutional Support	4-16	9.09	9.00	.45	593	.651	[-.27, .43]
Campus Relationships	3-21	15.42	15.34	.42	609	.677	[-.33, .50]
Enhanced Learning	0-3	1.26	.92	5.1	572	.000	[.21, .47]
Overall Satisfaction	2-8	6.18	6.26	-.92	630	.356	[-.27, .10]

Table 4. Sequential Multiple Regression Analyses Predicting Student Overall Satisfaction at a Public Research University by Transfer Type

Variables	Horizontal (n = 338)			Vertical (n = 818)		
	B	SEB	β	B	SEB	β
Background						
Gender: Male	-.19	.14	-.06	-.07	.09	-.02
Age	.00	.02	.00	.00	.01	.00
Race: White	.33	.16	.10*	.24	.11	.06*
Grades	.00	.05	.00	.10	.03	.12***
Father's Education	.02	.04	.03	.00	.03	.00
Major: STEM	.32	.14	.11*	.22	.09	.08*
Academic Challenges						
Coursework emphasis	.06	.0	.11*	.06	.02	.10**
Assignment capacity	.00	.03	.01	-.04	.02	-.06*
Class projects	.01	.04	.01	.04	.02	.05
Interactions						
Student-faculty interaction	.03	.03	.05	.03	.02	.05
Institutional support	.10	.03	.19***	.15	.02	.26***
Campus relationships	.18	.02	.42***	.17	.02	.37***
Enriching Learning Opportunities						
Diversity	-.05	.04	-.06	-.04	.03	-.05
Enhanced learning	.04	.07	.03	-.10	.05	-.07*
<i>Adjusted R²</i>			.35			.40

* $p < .05$, ** $p < .01$, *** $p < .001$

Delimitations & Limitations

- One research university in the Midwest
- College seniors
- Not able to identify whether students stop out between institutions and how long it lasts.
- Not able to account for student academic activities and achievement prior to transfer.
- Cross-sectional design (a snapshot)

Conclusions

- What are the demographic characteristics of the vertical and horizontal transfers in the Midwestern research university?
- Similar distributions in gender, age, ethnicity, major, enrollment status, and housing.
 - Gender: female
 - Age: 23 or younger
 - Ethnicity: white
 - Major: non-STEM
 - Enrollment status: full-time
 - Housing: within driving or walking distance
- Grade-A: Horizontal > Vertical (42% vs. 28%)
- Parents' education-BA or beyond: Horizontal > Vertical (70% vs. 46%)

Conclusions

- To what extent do vertical transfers differ from horizontal transfers in Student-Faculty Interaction, Campus Relationships, Institutional Support, Enhanced Learning Experience, and Overall Satisfaction with the university?
- Student-Faculty Interaction, Quality of Campus Relationships, and Institutional Support:
 - Horizontal > Vertical but the differences were trivial
- Enhanced Learning:
 - Horizontal > Vertical and the difference was statistically significant
- Overall Satisfaction:
 - Vertical > Horizontal but the difference was trivial

Conclusions

- What are the factors that predict level of vertical and horizontal transfer student overall satisfaction?
 - Horizontal Transfers:
 - White
 - STEM majors
 - Coursework Emphasis
 - Institutional Support
 - Quality of Campus Relationships
 - Vertical Transfers:
 - White
 - Grades
 - STEM majors
 - Coursework Emphasis
 - Assignment Capacity (-)
 - Institutional Support
 - Campus Relationships
 - Enhanced Learning (-)

Implications

- **Implications:**
 - Do not assume all transfers have the same issues and/or challenges
 - Consider socialization process of different types of transfers
 - Create new student orientation programs and workshops for different types of transfers
 - Assist vertical transfers to learn about the university expectations and become more familiar with the academic requirements.
- **Suggestions for future studies:**
 - Qualitative studies: explore the students' transition experiences emphasizing on individual level
 - Longitudinal studies: identify short- and long-term aspects of transitions
 - Connect NSSE with academic transcript-level data

Questions



for additional information:

Frankie Santos Laanan
Office of Community College Research and Policy (OCCRP)
Iowa State University
laanan@iastate.edu
515.294.7292

STEM Student Engagement & Satisfaction:

A Comparative Study of Community College Transfers and Native Students at a Four-Year Institution

Frankie Santos Laanan

Yi (Leaf) Zhang

February 4, 2011



Purpose of Study

- To better understand STEM and community college transfer students' university experiences, engagement, and overall satisfaction at a research university in the Midwest.
- To identify differences between STEM and Non-STEM students regarding engagement and satisfaction.
- To identify differences between transfers and native students regarding engagement and satisfaction.
- To explore factors that influence STEM and transfer students' overall satisfaction.

Research Questions

- What are the demographic characteristics of **STEM transfers, STEM native students, non-STEM transfers, and non-STEM native students** at a public research university in the Midwest?
- To what extent do the four groups of students differ in academic challenges, level of institutional support, student-faculty interactions, quality of campus relationships, and overall satisfaction with the university?
- What factors predict students' overall satisfaction?

Theoretical Framework

Demographics

College Environment

Students' Overall Satisfaction

STEM
Status

Student
Status

Gender
Age
Race
Parents'
Education

Academic
Involvement

Student
Engage-
ment

Social
Integration

Overall
Satisfaction

Methodology

- Definition

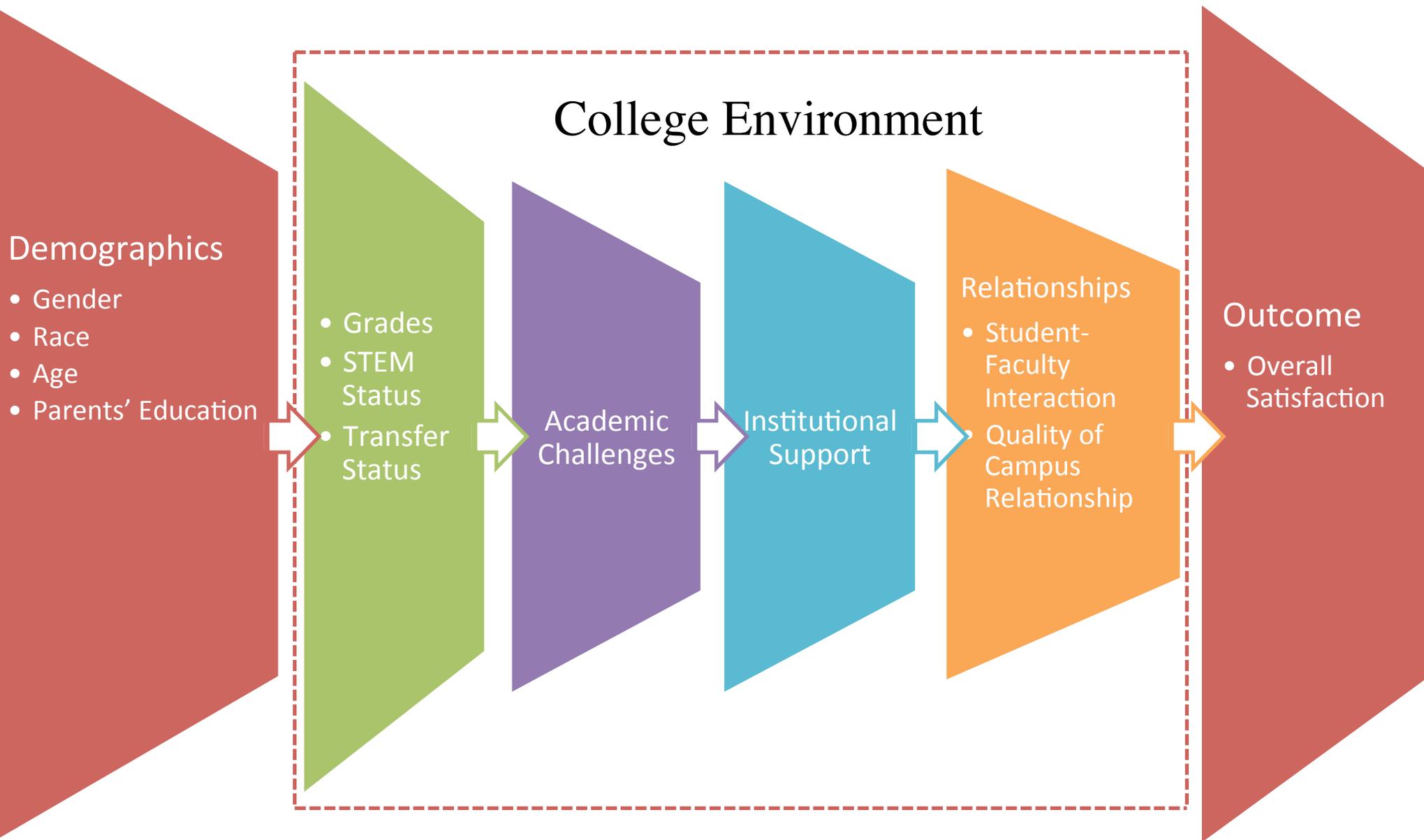
- **STEM majors:** Biological Sciences, Engineering, Physical Science, Agriculture, Computer Science, Kinesiology
- **Non-STEM majors:** Arts and Humanities, Business, Education, Professional, Social Science, and Others (including Communications, Family Studies, Natural Resources and Conservation, Criminal justice, Military Science, Public administration, Technical/vocational, etc.)
- **Community college transfers:** seniors who indicated that they *only* attended a community or junior college prior to the university
- **Native students:** seniors who did not indicate attending any vocational or technical schools, community or junior colleges, other 4-year colleges, and any other type of institutions.

- Sample

Table 1. Sample Summary

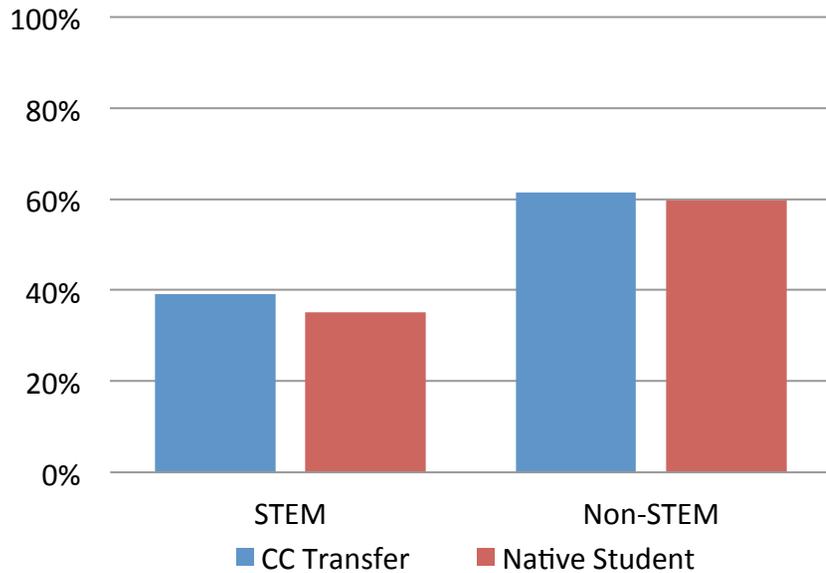
	STEM	Non-STEM	Total
CC Transfer	334	467	801
Native Student	731	758	1489
Total	1065	1225	2290

Hypothetical Model

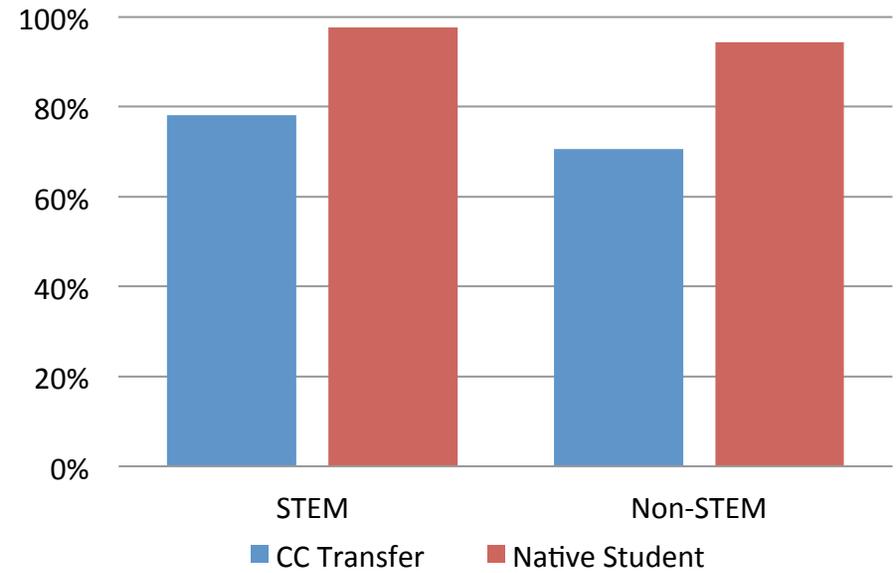


Results: Descriptive

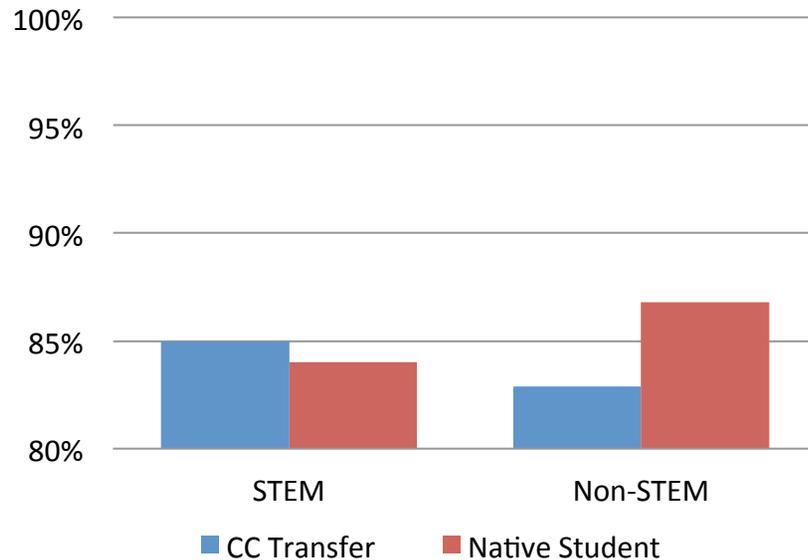
Gender : Female



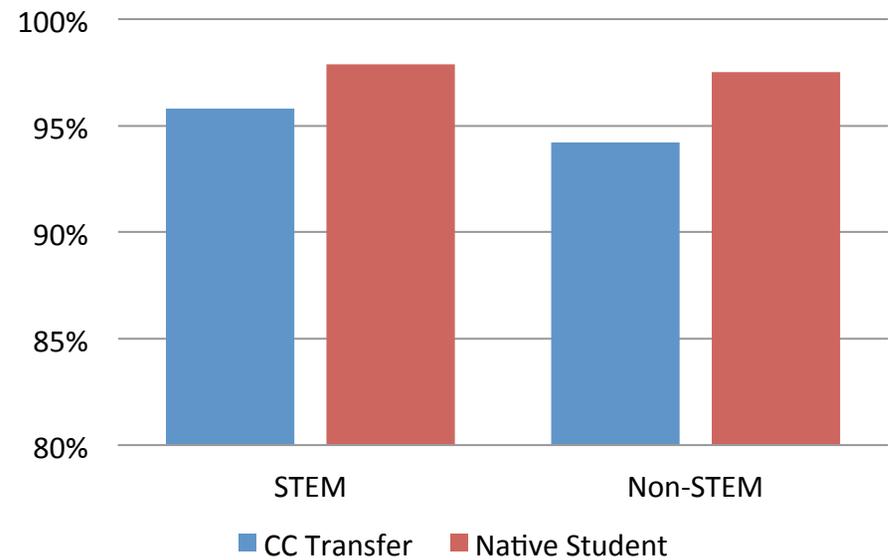
Age: 23 and below



Race: White (Non-Hispanic)

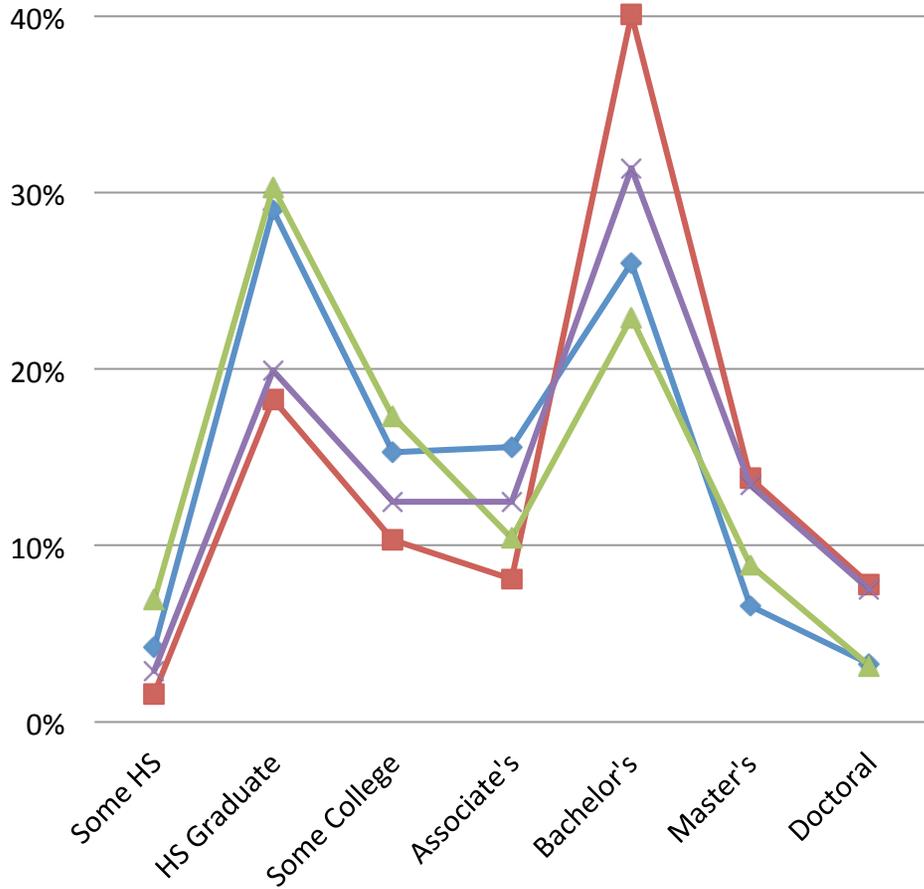


Enrollment: Full Time



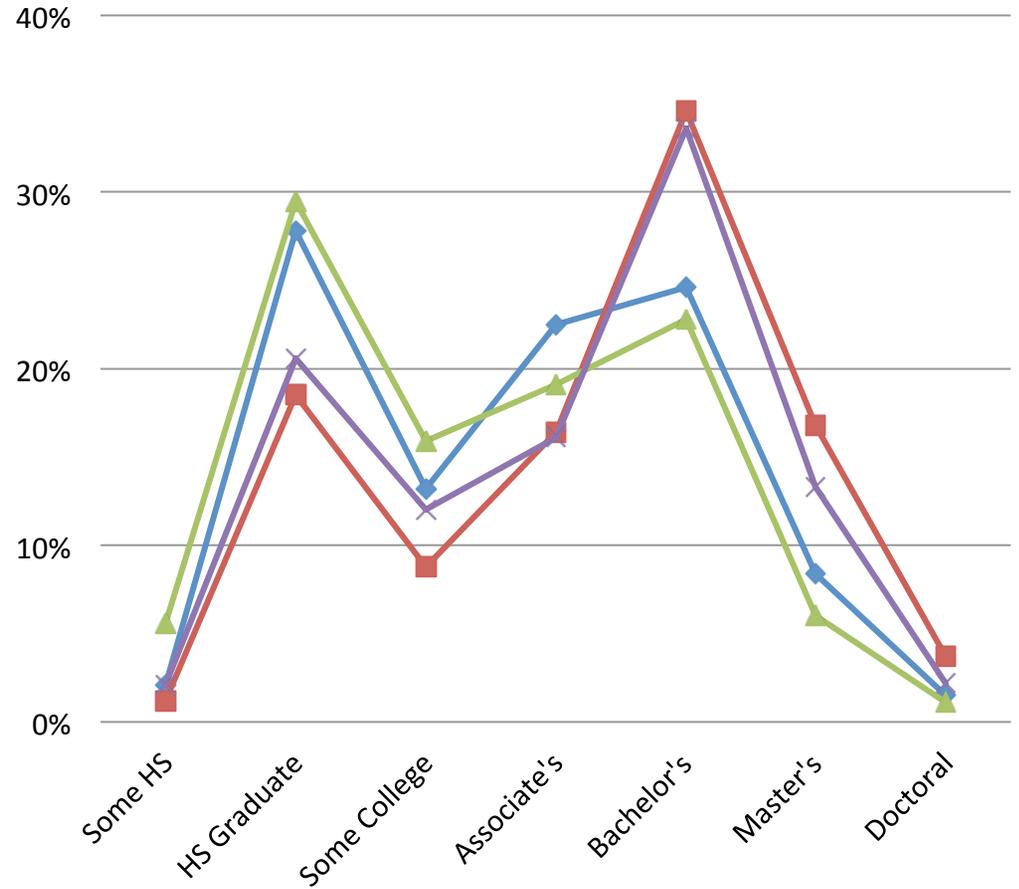
Results: Descriptive

Father's Education



- ◆ STEM Transfer
- STEM Native Student
- ▲ Non-STEM Transfer
- × Non-STEM Native Student

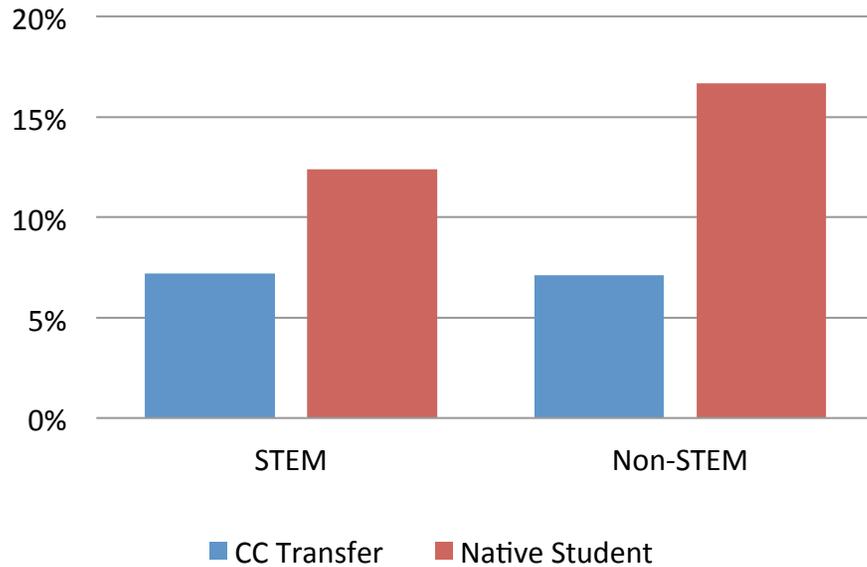
Mother's Education



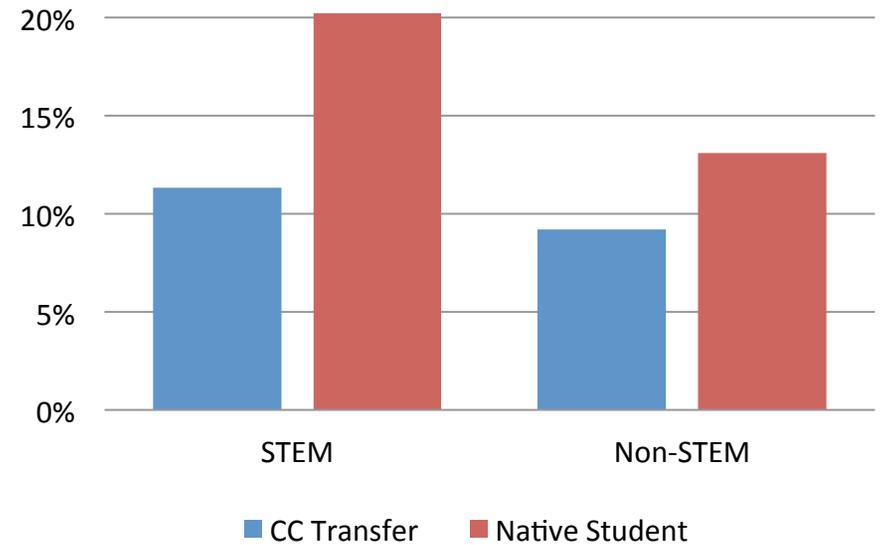
- ◆ STEM Transfer
- STEM Native Student
- ▲ Non-STEM Transfer
- × Non-STEM Native Student

Results: Descriptive

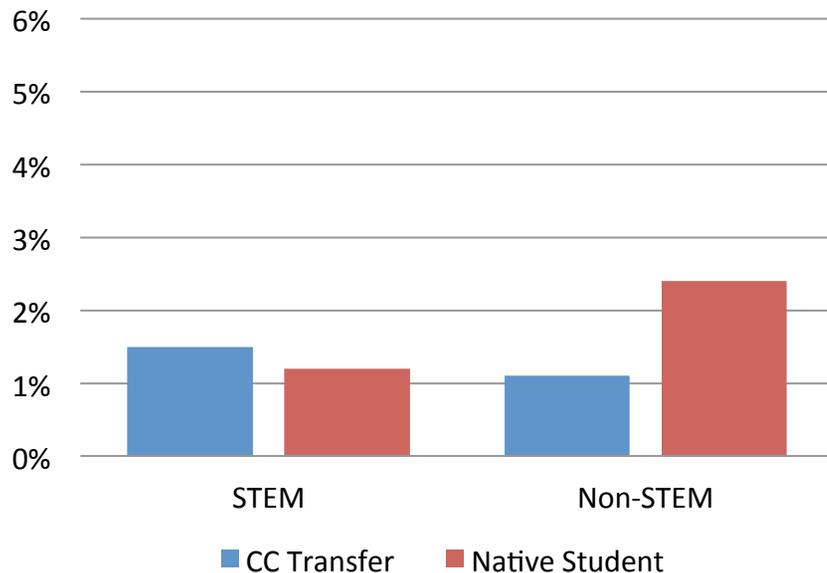
Fraternity/Sorority



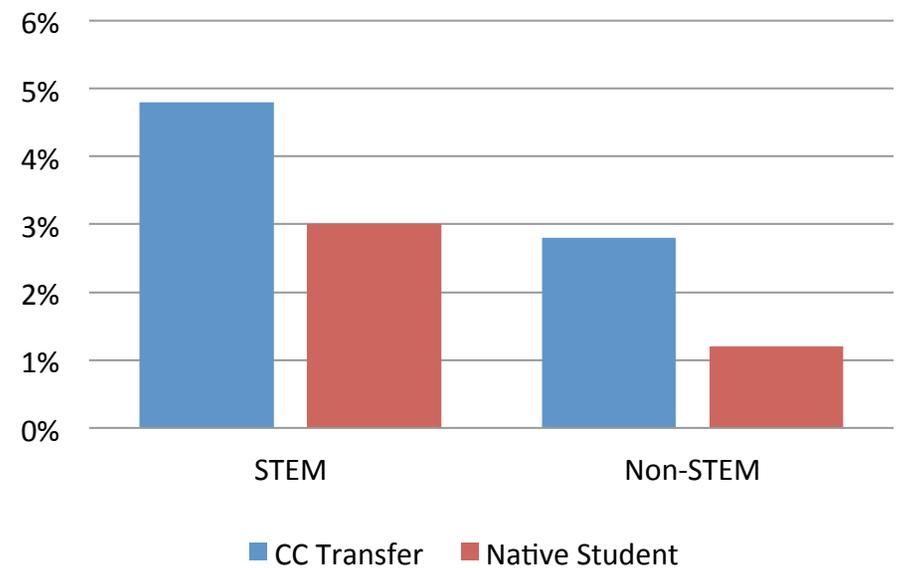
Residency: Dormitory



Athlete

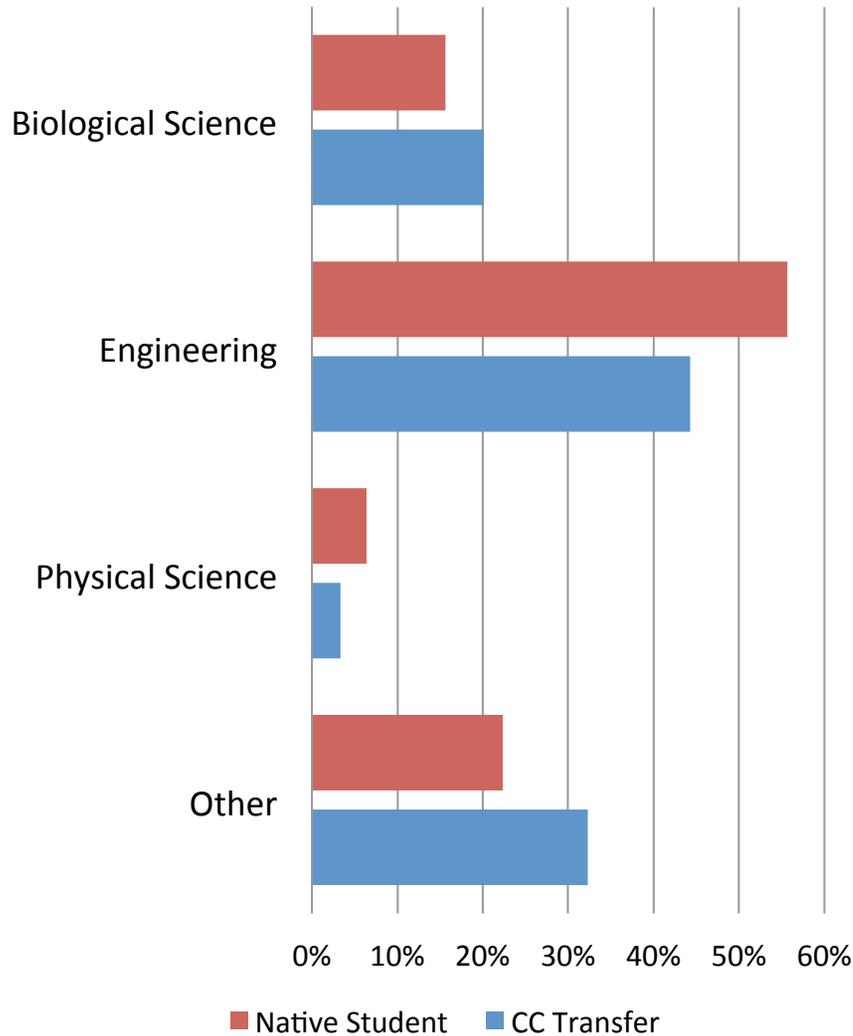


International Students



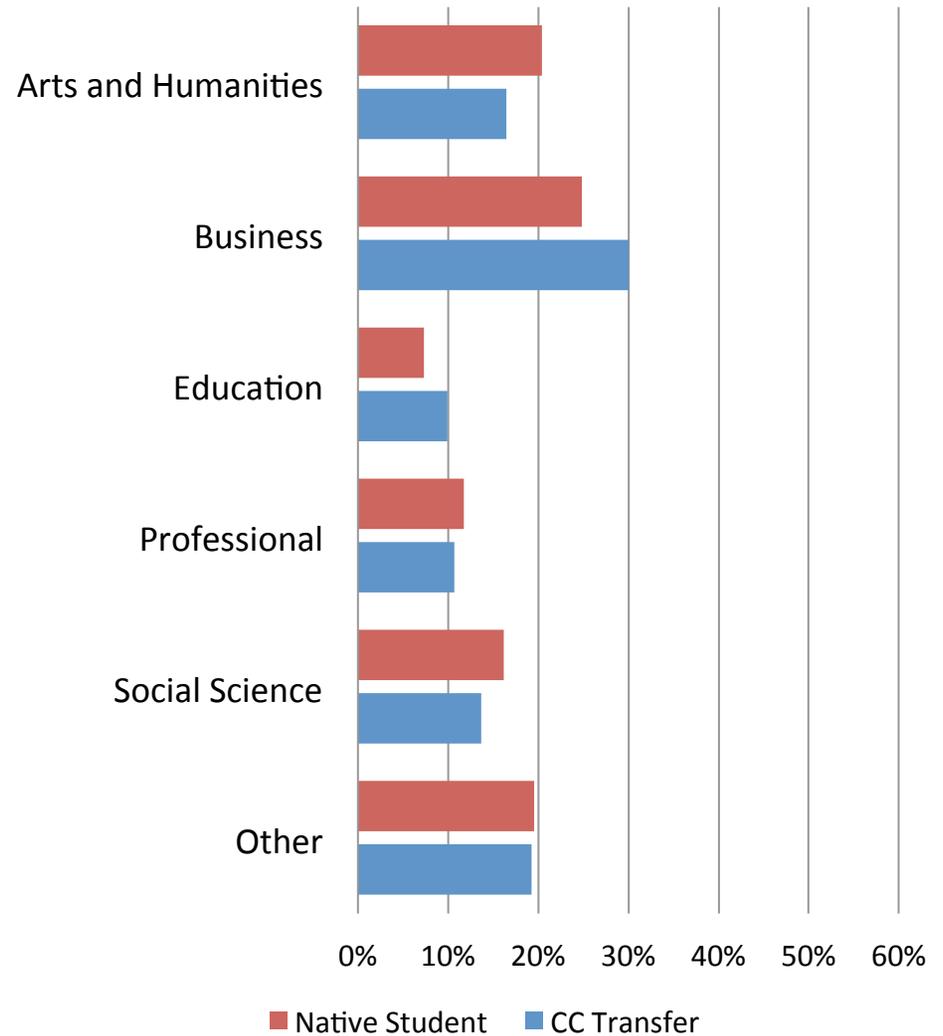
Results: Descriptive

STEM



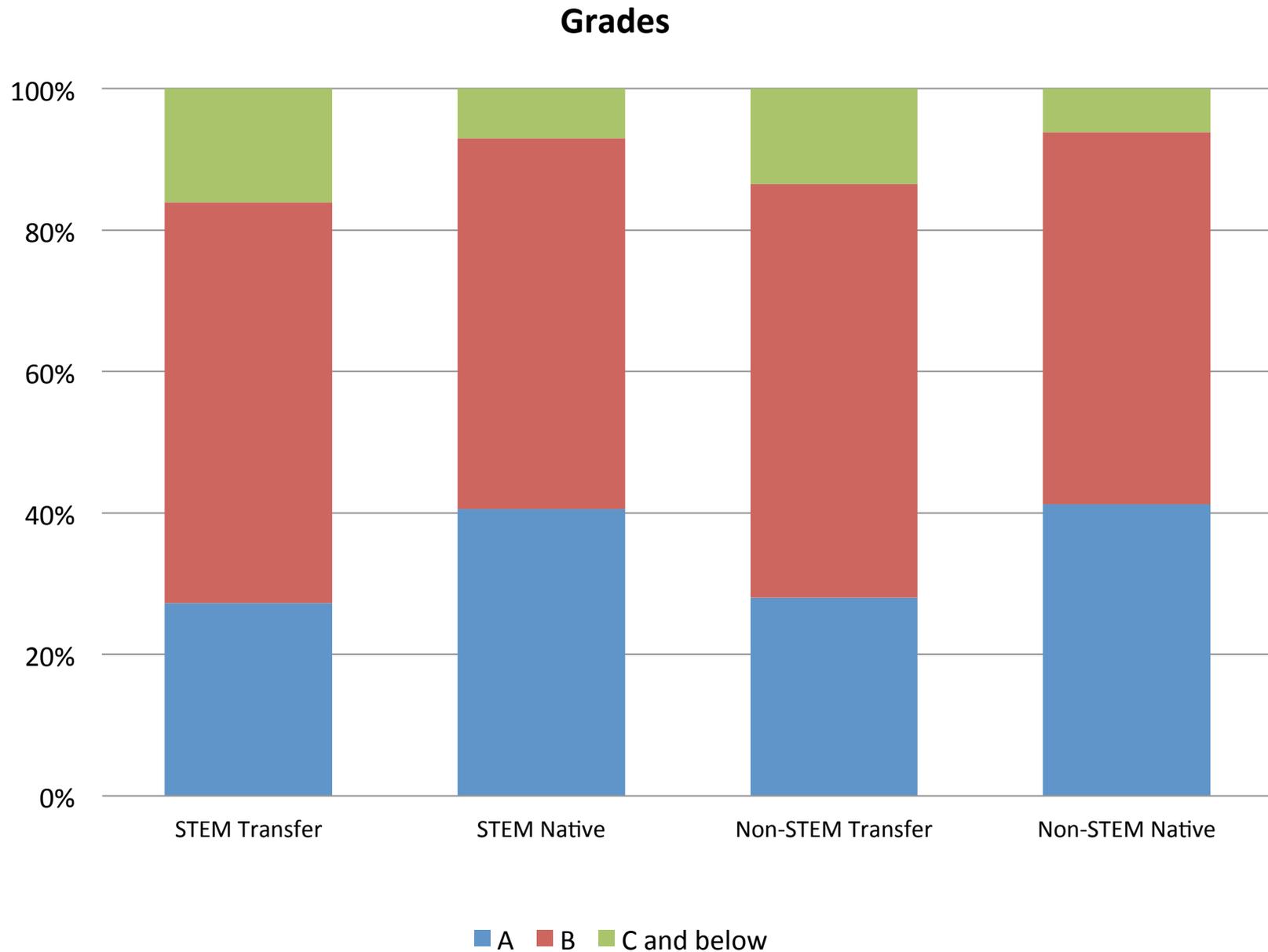
Other: Agriculture, Computer Science, and Kinesiology

Non-STEM



Other: Communications, Family Studies, Natural Resources and Conservation, Criminal Justice, Military Science, Parks, Recreation, Leisure Studies, Sports Management, Public Administration, Technical/Vocational, and other fields.

Results: Descriptive



Results: Independent Samples *t*-test

Table 3. Comparison between *STEM* and *Non-STEM* students in Background Characteristics, Coursework Emphasis, Institutional Support, Student-Faculty Interaction, Quality of Campus Relationships, and Overall Satisfaction.

Variables	Scale	Mean		t	df	p	95% Confidence Interval	
		Non-STEM	STEM					
Coursework Emphasis	4	11.84	11.83	0.084	2270.000	0.933	-0.205	0.224
Institutional Support	4	9.09	9.08	0.098	2272.000	0.922	-0.204	0.225
Student-Faculty Interaction	4	9.56	9.17	3.867	2264.304	0.000	0.190	0.580
Campus Relationships	4	15.54	15.46	0.574	2282.000	0.566	-0.183	0.335
Overall Satisfaction	2	3.15	3.23	-2.551	2287.000	0.011	-0.131	-0.017

Results: Independent Samples *t*-test

Table 4. Comparison between *Transfers* and *Native Students* in Background Characteristics, Coursework Emphasis, Institutional Support, Student-Faculty Interaction, Quality of Campus Relationships, and Overall Satisfaction.

Variables	Scale	Mean		t	df	p	95% Confidence Interval	
		Native	Transfer					
Coursework Emphasis	4	11.86	11.78	0.777	2305.000	0.437	-0.135	0.311
Institutional Support	4	9.09	9.01	0.731	2306.000	0.465	-0.140	0.305
Student-Faculty Interaction	4	9.34	9.43	-0.877	2305.000	0.381	-0.295	0.113
Campus Relationships	4	15.57	15.34	1.664	2316.000	0.096	-0.041	0.500
Overall Satisfaction	2	3.22	3.13	2.885	2321.000	0.004	0.028	0.146

Logistic Regression

Table 6. *Logistic Regression Predicting Student Overall Satisfaction with the University*

Variables	Odds Ratio				
	Model 1	Model 2	Model 3	Model 4	Model 5
Block 1					
Gender: Female	0.701 [*]	0.719 [*]	0.708 [*]	0.716 [*]	0.662[*]
Race	1.215	1.169	1.250	1.325	1.100
Age	0.955 [*]	0.963	0.968	0.992	0.996
Father's Education	0.674	0.979	0.988	1.014	1.027
Block 2					
STEM Status: STEM		1.319	1.344 [*]	1.401 [*]	1.532^{**}
Transfer Status: Native		0.901	0.897	0.837	0.847
Grades		1.246 ^{***}	1.209 ^{***}	1.152 ^{**}	1.077
Block 3					
Coursework Emphasis			1.273 ^{***}	1.116 ^{***}	1.049
Block 4					
Institutional Support				1.678 ^{***}	1.410^{***}
Block 5					
Student-Faculty Interaction					1.051^{***}
Campus Relationships					1.377^{***}
Nagelkerke R Square	0.013	0.043	0.113	0.279	0.382
The Cut Value	0.88				

Conclusions

1. What are the demographic characteristics of STEM transfers, STEM native students, non-STEM transfers, and non-STEM native students at the research university in the Midwest?

Gender: 60%

Age: 23 or younger

Ethnicity: White

Enrollment: Full-time

Fraternity/sorority: few

Grades: B (B+ and B-).

Parents' Education:

STEM > Non-STEM

Native > Transfer

Fathers > Mothers

Major:

Engineering vs. Business

Conclusions

2. To what extent do the four groups of students differ in academic challenges, level of institutional support, student-faculty interactions, quality of campus relationships, and overall satisfaction?
 - **Student-Faculty Interaction:**
 - Non-STEM > STEM
 - Non-STEM Transfer > STEM Transfer
 - STEM Transfers had the lowest mean score (9.16 on a 4-16 scale)
 - Non-STEM Transfer had the highest mean score (9.60)
 - **Overall Satisfaction:**
 - Satisfied
 - STEM > Non-STEM
 - Native > Transfer
 - Non-STEM Transfers had the lowest score (3.09 on a 1 to 4 scale)
 - STEM Native students had the highest score (3.25)

Conclusions

3. What factors predict students' overall satisfaction?

- **Four measures** are associated with higher likelihoods of being satisfied with the institution.
- **Female students** and **STEM majors** were more likely to be satisfied with the institution.
- Students who experienced higher level of **institutional support** and reported better **relationships** with faculty, staff, and peer students were more likely to have a higher level of overall satisfaction with the institution.

Implications

- **Implications:**
 - Create new student orientation programs and workshops for different types of students
 - Provide support to help students succeed academically and thrive socially
 - Strength STEM programs
 - Provide additional academic support to transfers
- **Suggestions for future studies:**
 - Qualitative studies: explore the students' college experiences emphasizing on individual level
 - Longitudinal studies: identify short- and long-term aspects of students' engagement
 - Connect NSSE with academic transcript-level data

Questions



For Additional Information:

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Office of Community College Research and Policy (OCCRP)

Iowa State University

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