Learning Outcomes: Knowledge, Attitudes, & Behaviors
Replicated set of questions from pre-test

Opportunity to Learn (Co-curricular)

During the past semester, how often did you attend…

- **A university-sponsored club or organization that focused on sustainability?**
- **A university-sponsored event, activity, or lecture (not part of an academic class) that focused on sustainability?**
- **An off-campus club or organization that focused on sustainability?**
- **An off-campus event, activity, or lecture (not part of an academic class) that focused on sustainability?**

Response options for this set of questions are:

- Never
- A few times
- Sometimes
- Many times
- Every chance I got

Opportunity to Learn (Curricular)

The next few sections of this survey will focus on your learning about sustainability during the Fall 2017 semester.

Sustainability refers to the idea that human activity ought to be guided by the consideration of the health and well-being of the environment and future generations of humans. Acting sustainably, for example, could mean acting responsibly about the products we consume in order to be able to support the billions of people on this planet forever.

During the past semester, how often did your instructor mention sustainability-related topics in…

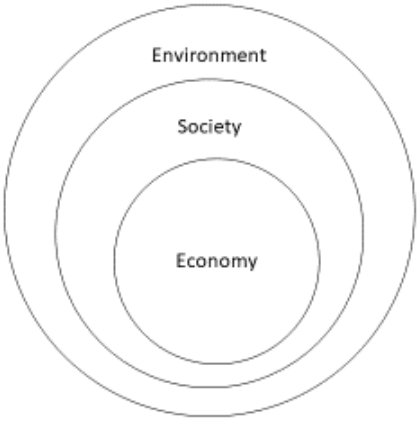
- **Courses that are required for your major**
- **General education courses**
- **Elective courses**
- **Lectures**
- **Labs**
- **Recitations**
- **Practicums**
- **Another type of course [text box]**

Response options for this set of questions are:

- Never
- A few times

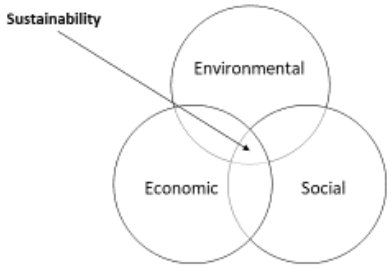
- Sometimes
- Many times
- All the time
- Not applicable (I did not take this kind of course)

During the past semester, in how many of your courses did you see a visual of sustainability similar to the image below?



- 0 (this was not mentioned in any course)
- 1 course
- 2 courses
- 3 courses
- 4+ courses

During the past semester, in how many of your courses did you see a visual of sustainability similar to the image below?



- 0 (this was not mentioned in any course)
- 1 course
- 2 courses
- 3 courses
- 4+ courses

An ecological footprint tells you the impact that a person or community has on the environment, as expressed by the amount of land required to sustain their use of natural resources.

During the past semester, in how many of your courses did you complete an ecological footprint?

- 0 (this was not mentioned in any course)
- 1 course
- 2 courses
- 3 courses
- 4+ courses

During the past semester, in how many courses were the following kinds of sustainability-related current events mentioned?

- **National events** (like the United States' withdrawal from the Paris Climate Accord)
- **Regional events** (like the Flint Michigan Water Crisis or Lake Erie Algae Bloom)
- **Local MSU events** (like the power plant to stop using coal or the solar array over the parking lot)

Response options for this set of questions are:

- 0 (this was not mentioned in any course)
- 1 course
- 2 courses
- 3 courses
- 4+ courses

During the past semester, in how many of your courses did you...

- Learn about sustainability **in at least one class session**?
- Learn about sustainability in a **semester-long theme or project**?

Response options for this set of questions are:
- 0 (this was not mentioned in any course)
- 1 course
- 2 courses
- 3 courses
- 4+ courses

<u>Promising Practices of Teaching and Learning</u>

During the Fall 2017 semester, did you learn about environmental or sustainability issues in at least one class?
- Yes
- No

Display logic will follow the previous question for participants who responded with no.

Would you have liked to learn about sustainability in your current coursework?
- Yes
- No
- Unsure

How likely are you to benefit from learning about sustainability coursework in the following ways?
- **In your future coursework**
- **In your future career**
- **In your role in your local community**
- **In your role in the global community**

Response options for this set of questions are:

- Extremely unlikely
- Somewhat unlikely
- Neither likely nor unlikely
- Somewhat likely
- Extremely likely

Display logic will follow the previous question for participants who responded with yes.

Think about the course that taught you the *most* about sustainability during the past semester. Please answer the following questions for this particular course.
What is the full name of the course? (like Introduction to Cultural Anthropology, or College Algebra)

- [text box]

Which college was this course in?

- College of Agriculture and Natural Resources
- College of Arts and Letters
- Eli Broad College of Business
- College of Communication Arts and Sciences
- College of Education
- College of Engineering
- James Madison College
- Lyman Briggs College
- College of Music
- College of Natural Science
- College of Nursing
- Residential College in the Arts and Humanities
- College of Social Science
- College of Veterinary Medicine
- Don't Know

Which kind of course was this?

- Major
- Elective
- General education
- Other [text box]

What form was this course?

- Lecture
- Lab
- Recitation
- Practicum
- Other [text box]

Across the semester, how much time in this course was devoted to sustainability?

- 0-24%
- 25-49%
- 50-74%
- 75-100%

Teaching for Sustainability (Core Ideas)

Think about this same course that taught you the *most* about sustainability. Please answer the following questions for this particular course.

How often did this course cover the following content?

Note: you can hover over each item to read examples of the concept.

- **Defining sustainability**
  - Hover text: *For example, the instructor provided you with a definition of "sustainability" to help you understand the meaning of the term.*
- **Environmental crises**
  - Hover text: *For example, the instructor discussed environmental crises such as climate change, global warming, pollution, ozone depletion, deforestation, extinction, etc.*
- **Future generations**
  - Hover text: *For example, the instructor talked about sustainability in the context of meeting our own needs without compromising the ability of future generations to meet their needs.*
- **Resource management**
  - Hover text: *For example, the instructor discussed renewing resources at a rate equal to or greater than the rate at which they are consumed.*
- **Economic sustainability**
  - Hover text: *For example, the instructor discussed the value of economic systems that have the ability to support a defined level of economic production indefinitely.*
- **Challenging human-centered views of the environment**
  - Hover text: *For example, the instructor challenged human-centered views of the environment, like the view that human beings are the central or most significant entities in the world.*
- **Valuing all living things**
  - Hover text: *For example, the instructor discussed valuing all living things (like animals and plants), and/or the concept that nature does not exist to be consumed by humans but that humans are one species among many to consume natural resources.*
- **Valuing the ecological system**
  - Hover text: *For example, the instructor discussed that the ecological system is the most significant and consequential aspect of earth.*
- **Environmental justice**

    - Hover text: *For example, the instructor discussed how marginalized racial communities are subjected to disproportionate exposure to pollution, or limited access to clean drinking water.*
- **Relating oppression of subordinate human groups to oppression of nature**
    - Hover text: *For example, the instructor related the oppression and domination of subordinate groups (women, people of color, children, low-income communities, etc.) to the oppression and domination of nature (animals, land, water, air, etc).*
- **Eliminating poverty**
    - Hover text: *For example, the instructor explained how low-income communities depend most on natural resources for their livelihoods, and they are also the ones who suffer most from the impacts of environmental problems.*

Response options for this set of questions are:

- 0 class sessions
- Less than half of the class sessions
- About half of the class sessions
- More than half of the class sessions
- Nearly every class session

Teaching for Sustainability (Teaching Practices)

Think about this same course that taught you the *most* about sustainability. Please answer the following questions for this particular course.

How often was sustainability taught in the following ways?

- In the context of the *area I live in* (like Michigan)
- In the context of *my school* (like MSU)
- In the context of *current events* (like the Flint, Michigan water crisis)
- In a way that made me feel empowered to be more sustainable (like motivating me to think about my water consumption)
- Case Study
- Group Discussion
- Debate
- Mindfulness
- Learning who I am in relation to the larger purpose of life

Response options for this set of questions are:

- Never
- A few times
- Sometimes
- Many times
- All the time

Cognitively Responsive Teaching (Subject Matter)

Think about this same course that taught you the most about sustainability. Please answer the following questions for this particular course.

Note: you can hover over the term "sustainability" in each item to read a fictitious example of how this might look in the classroom.

- **The instructor introduced, in-depth, a concept related to sustainability.**
  - Hover text: *For example, when an American history teacher mentioned the Dust Bowl of the 1930s, she went beyond mentioning the event and explained it thoroughly with special focus to the environmental and health hazards it had on people.*
- **The instructor explained the sustainability-related concept in a few different ways.**
  - Hover text: *For example, when explaining the economic impact of organic farming, the instructor explained how it might impact individual consumers, local farmers, and the local economy.*
- **The instructor introduced how sustainability is connected to course content.**
  - Hover text: *For example, when reading Shakespeare's "A Midsummer Night's Dream," the instructor pointed out the reference to the time period's unusually volatile weather, and he drew a connection between ecological awareness in Shakespearian times and in our current times*.
- **The instructor taught sustainability in a logical order.**
  - Hover text: *For example, instead of just stating that the MSU power plant is becoming coal-free, the instructor discussed the step-by-step plan of becoming coal-free.*
- **The instructor taught me how to think about sustainability.**
  - Hover text: *For example, the instructor used an analogy to help me think about sustainability by saying: imagine you have a magic candy jar that refills itself. The candy in the jar is sustainable because you can use it for a long time without it running out. In the real world, we don't have a magic candy jar. If you keep taking candy out of a jar and never put more back in, the jar will become empty. This is similar to the concept of sustainability.*

Response options for this set of questions are:

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Somewhat Agree
- Strongly Agree

Cognitively Responsive Teaching (Prior Knowledge)

Think about this same course that taught you the most about sustainability. Please answer the following questions for this particular course.

Note: you can hover over the term "sustainability" in each item to read a fictitious example of how this might look in the classroom.

The instructor helped me us what I know from…

- **My own personal experiences to help me learn about sustainability.**
  - Hover text: *For example, the instructor equated how the social norm of picking up after my dog is similar to large corporations divesting from fossil fuel companies to help me understand this abstract concept in a way I can relate to.*
- **My high school coursework to help me learn about sustainability.**
  - Hover text: *For example, the instructor made reference to ideas I learned in my high school courses (like a natural science class where I learned about plate tectonics, or erosion and deposition) to help me understand the sustainability-related idea (s)he was teaching.*
- **My other college coursework to help me learn about sustainability.**
  - Hover text: *For example, the instructor made reference to ideas I learned in my other MSU courses (like a women's studies class where I learned about ecofeminism) to help me understand the sustainability-related idea (s)he was teaching.*
- **My social roles and culture (e.g., race, socioeconomic status, gender, sexuality, ethnicity, religion) to help me learn about sustainability.**
  - Hover text: *For example, the instructor examined how some religions and cultures sacrifice animals for symbolic reasons, and challenged me to think about how my social and cultural roles may have sustainable implications.*
- **My family to help me learn about sustainability.**
  - Hover text: *For example, the instructor used family situations, like a dynamic conversation around the Thanksgiving table, to depict the complexity of converging views about sustainability.*
- **My friends to help me learn about sustainability.**
  - Hover text: *For example, the instructor used social situations, like sharing a bathroom in the college dorm, to show how conversations with friends about how the length of a shower can be used to make sense of water management.*
- **The media to help me learn about sustainability.**

- Hover text: *For example, the instructor mentioned an example I knew about from the media, like the wildfires in California, to help explain a sustainability-related idea*.

Response options for this set of questions are:

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Somewhat Agree
- Strongly Agree

Cognitively Responsive Teaching (Supporting Changing Views)

Think about this same course that taught you the most about sustainability. Please answer the following questions for this particular course.

Note: you can hover over the term "sustainability" in each item to read a fictitious example of how this might look in the classroom.

- **The instructor helped me realize the differences or similarities between what I knew about sustainability before the class and what I learned about sustainability in the class.**
  - Hover text: *For example, at the beginning of the course I thought that using energy efficient light bulbs was being sustainable but the instructor pushed me to think about reduction of resources instead of just consumption of "better" resources.*
- **The instructor helped me work through differences between what I knew about sustainability before the class and what I learned about sustainability in the class.**
  - Hover text: *For example, coming into the class, I believed that the Lake Erie toxic algae bloom was solely an environmental issue. I did not understand how this was a broader sustainability issue because it is an environmental problem. In one class discussion in early November, a peer offered that he was voting for a particular candidate because he/she supported investing in research and practices that would limit the toxic algae from blooming, and resources to protect local communities from the devastating effects of the toxic algae. Using this peer's insight, the instructor then guided me in thinking about how this could be seen as an environmental issue, how this could be seen as a political issue, how this could be seen as an economic issue, and how this could be seen as a social issue. Then, the instructor helped me understand how this is a broader sustainability issue, not just an environmental issue.*

- **The instructor supported me if and when I felt challenged by the sustainability content.**
    - Hover text: *For example, this past summer I visited SeaWorld. This semester, in my Documentary Filmmaking class, I watched "Blackfish." I felt conflicted by my recent visit to SeaWorld. I felt comfortable about sharing my conflicting feelings in a class conversation, and the instructor helped me feel supported. The instructor built on what I experienced at SeaWorld to help me feel challenged about what I saw there in a way to become empowered to be a critical, reflective thinker about my ways of knowing.*

Response options for this set of questions are:

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Somewhat Agree
- Strongly Agree

Student Sustainability Survey -- Pre-Survey

Student Demographics

What is your current academic status?

- Freshman
- Sophomore
- Junior
- Senior

Are you a full- or part-time student?

- Full-time student
- Part-time student

Did you enter into MSU as a first-time or transfer student?

- First-time student
- Transfer student

What is your current GPA, to the best of your recollection?

- [text box]

What is your college?

- College of Agriculture and Natural Resources
- College of Arts and Letters
- Eli Broad College of Business
- College of Communication Arts and Sciences
- College of Education
- College of Engineering
- James Madison College
- Lyman Briggs College
- College of Music
- College of Natural Science
- College of Nursing
- Residential College in the Arts and Humanities
- College of Social Science
- College of Veterinary Medicine
- Don't Know

What is your major?
Display logic will follow the previous question so that only majors attached to the particular college will show

College of Agriculture and Natural Resources

- Agribusiness Management

- Agriculture and Natural Resources
- Agriculture, Food and Natural Resources Education
- Animal Science
- Construction Management
- Crop and Soil Sciences
- Dietetics
- Entomology
- Environmental Economics and Management
- Environmental Economics and Policy
- Environmental Studies and Sustainability
- Fisheries and Wildlife
- Food Industry Management
- Food Science
- Forestry
- Horticulture
- Interior Design
- Landscape Architecture
- Nutritional Sciences
- Packaging
- Sustainable Parks, Recreation and Tourism
- Technology Systems Management
- Other

College of Arts and Letters

- Apparel and Textile Design
- Apparel and Textiles
- Arabic
- Art Education
- Art History and Visual Culture
- Arts & Letters-General
- Chinese
- Classical Studies
- English
- Experience Architecture
- Film Studies
- French
- German
- Global Studies in the Arts and Humanities
- Humanities - Prelaw Program
- Interdisciplinary Humanities
- Japanese
- Linguistics
- Philosophy
- Professional Writing

- Religious Studies
- Russian
- Spanish
- Studio Art - Bachelor of Arts
- Studio Art - Bachelor of Fine Arts
- Theatre - Bachelor of Arts
- Theatre - Bachelor of Fine Arts
- Women's and Gender Studies
- Other

Eli Broad College of Business

- Accounting
- Finance
- General Management
- Hospitality Business
- Human Resource Management
- Marketing
- Supply Chain Management
- Other

College of Communication Arts and Sciences

- Advertising
- Communication
- Journalism
- Media and Communication Technology
- Media and Information - Bachelor of Arts
- Media and Information - Bachelor of Science
- Media Arts and Technology
- Other

College of Education

- Athletic Training
- Education
- Kinesiology
- Special Education-Learn Disabilities
- Other

College of Engineering

- Applied Engineering Sciences
- Biosystems Engineering
- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Computer Science

- Electrical Engineering
- Engineering-No Major
- Environmental Engineering
- Materials Science and Engineering
- Mechanical Engineering
- Other

James Madison College

- Comparative Cultures and Politics
- International Relations
- Political Theory and Constitutional Democracy
- Social Relations and Policy
- Other

Lyman Briggs College

- Biology
- Computer Science
- Earth Science
- Environmental Sciences and Management
- History, Philosophy and Sociology of Science
- Physical Science
- Other

College of Music

- Composition
- Jazz Studies
- Music
- Music Education
- Music Performance
- Other

College of Natural Science

- Actuarial Science
- Astrophysics
- Biochemistry and Molecular Biology
- Biochemistry and Molecular Biology/Biotechnology
- Biological Science-Interdepartmental
- Biomedical Laboratory Science
- Chemical Physics
- Chemistry - Bachelor of Arts
- Chemistry - Bachelor of Science
- Clinical Laboratory Sciences
- Computational Chemistry
- Computational Mathematics - Bachelor of Arts

- Computational Mathematics - Bachelor of Science
- Diagnostic Molecular Science
- Earth Science - Interdepartmental
- Environmental Biology/Microbiology
- Environmental Biology/Plant Biology
- Environmental Biology/Zoology
- Environmental Geosciences
- Genomics and Molecular Genetics
- Geological Sciences
- Human Biology
- Mathematics - Bachelor of Arts
- Mathematics - Bachelor of Science
- Mathematics, Advanced - Bachelor of Arts
- Mathematics, Advanced - Bachelor of Science
- Microbiology
- Natural Science-No Major
- Neuroscience
- Physical Science - Interdepartmental
- Physics - Bachelor of Arts
- Physics - Bachelor of Science
- Physiology
- Plant Biology
- Predental
- Premedical
- Preoptometry
- Statistics - Bachelor of Arts
- Statistics - Bachelor of Science
- Zoology - Bachelor of Arts
- Zoology - Bachelor of Science
- Other

College of Nursing

- Nursing
- Nursing - Accelerated Second Degree Program
- Nursing (Online Program) - RN license required
- Prenursing
- Other

Residential College in the Arts and Humanities

- Arts and Humanities
- Other

College of Social Science

- Anthropology - Bachelor of Arts

- Anthropology - Bachelor of Science
- Child Development - Bachelor of Arts
- Criminal Justice
- Early Care and Education
- Economics - Bachelor of Arts
- Economics - Bachelor of Science
- Environmental Geography
- Geographic Information Science
- Geography - Bachelor of Arts
- Geography - Bachelor of Science
- Global and Area Studies- Social Science (Bachelor of Arts)
- Global and Area Studies- Social Science (Bachelor of Science)
- History
- History Education
- Human Development and Family Studies - Bachelor of Arts
- Human Development and Family Studies - Bachelor of Science
- Human Geography
- Interdisciplinary Studies in Social Science - Bachelor of Arts
- Interdisciplinary Studies in Social Science - Bachelor of Science
- Interdisciplinary Studies in Social Science: Social Science Education
- Political Science - General
- Political Science - Prelaw
- Psychology - Bachelor of Arts
- Psychology - Bachelor of Science
- Public Policy
- Social Work
- Sociology - Bachelor of Arts
- Sociology - Bachelor of Science
- Urban and Regional Planning
- World Politics
- Other

College of Veterinary Medicine

- Preveterinary
- Veterinary Technology
- Other

Don’t Know

- [text box]

What is your current living arrangement?

- I live on campus
- I live off campus
- I live in a sorority or fraternity house

Did you choose to live on or near campus in order to limit the amount of times you need to drive?

Display logic will follow the previous question so that only students who live on campus or in a sorority or fraternity house will receive this question

- Yes
- No, I chose to live here for different reasons
- No, I did not have a choice

What is the highest level of education your father completed?

- Less than high school
- High school/GED
- Vocational/technical degree or some college
- Bachelor's degree
- Master's degree
- PhD or equivalent degree
- Don't know/Not applicable
-

What is the highest level of education your mother completed?

- Less than high school
- High school/GED
- Vocational/technical degree or some college
- Bachelor's degree
- Master's degree
- PhD or equivalent degree
- Don't know/Not applicable

When it comes to paying for university tuition and living costs, which of the following are true.
My parents pay most of the costs
I need to have a part-time job during the school year
I need financial aid
I need to take out loans

Response options for this set of questions are:

- Yes
- No

Which of the following describes the area you come from?

- Large urban (over 100,000 residents)
- Medium urban (25,000 -- 100,000 residents)
- Small urban (2,500 - 24,999 residents)
- Rural town (< 2,500 residents)

In general, would you describe your views about economic issues as ...

- Very conservative
- Conservative
- Moderate
- Liberal
- Very liberal Don't know

In general, would you describe your views about social issues as ...

- Very conservative
- Conservative
- Moderate
- Liberal
- Very liberal
- Don't know

In politics today, do you consider yourself a Republican, Democrat or Independent

- Republican
- Independent leaning Republican
- Independent
- Independent leaning Democrat
- Democrat
-

In what year were you born?

- [text box]

To which gender identity do you most identify?

- Male
- Female
- Not listed

Were you born in the United States?

- Yes
- No

In what country were you born?

Display logic will follow the previous question so that only students who said no will receive this question

- [text box]

How long have you been in the United States (In years)?
Display logic will follow the previous question so that only students who said no will receive this question

- [text box]

Do you consider yourself Latino or Hispanic?

- Yes
- No

Which of the following describes your race? You may select as many as apply.

- White
- Black or African American
- American Indian or Alaska Native
- Asian Indian
- Japanese
- Chinese
- Filipino
- Korean
- Vietnamese
- Guamanian or Chamorro
- Samoan
- Native Hawaiian
- Other Asian [text box]
- Other Pacific Islander [text box]
- Other [text box]

What is your present religion, if any?

- Protestant
- Roman Catholic
- Mormon
- Orthodox, such as Greek or Russian Orthodox
- Jewish
- Muslim
- Buddhist
- Hindu
- Atheist
- Agnostic
- Spiritual, but not religious
- Something else [text box]

In an effort to understand how students grow and change in their perspectives during their time at MSU, we will contact a few selected students with some follow-up questions in the future.

Would you agree to be contacted again at the end of the semester?

- Yes
- No

Learning Outcomes: Knowledge[1]

The first group of questions is meant to assess what people know about science and environmental issues. Please answer to the best of your ability.

What is the most common cause of pollution of streams and rivers in the U.S.?
- Dumping of garbage by cities
- *Surface water running off yards, city streets, paved lots, and farm fields*
- Litter near streams and rivers
- Waste dumped by factories

Ozone forms a protective layer in the earth's upper atmosphere. What does ozone protect us from?
- Acid rain
- Climate change
- Sudden changes in temperature
- *Harmful UV rays*

Which of the following is an example of sustainable forest management?
- Setting aside forests to be off limits to the public
- *Never harvesting more than what the forest produces in new growth*
- Producing lumber for nearby communities to build affordable housing
- Putting the local communities in charge of forest resources

Which of the following is the most commonly used definition of sustainable development?
- Creating a government welfare system that ensures universal access to education, health care, and social services
- Setting aside resources for preservation, never to be used
- *Meeting the needs of the present without compromising the ability of future generations to meet their own needs*
- Building a neighborhood that is both socio-demographically and economically diverse

Over the past 3 decades, what has happened to the difference between the wealth of the richest and poorest Americans?
- *The difference has increased*
- The difference has stayed about the same
- The difference has decreased

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[1]Correct answer is italicized.

Which of the following countries passed the U.S. to become the largest emitter of the greenhouse gas carbon dioxide?

- *China*
- Sweden
- Brazil
- Japan

Many economists argue that electricity prices in the U.S. are too low because…

- *They do not reflect the costs of pollution from generating the electricity*
- Too many suppliers go out of business
- Electric companies have a monopoly in their service area
- Consumers spend only a small part of their income on energy

Which of the following is the most commonly used definition of economic sustainability?

- Maximizing the share price of a company's stock
- *Long term profitability*
- When costs equal revenue
- Continually expanding market share

Which of the following is a leading cause of depletion of fish stocks in the Atlantic Ocean?

- *Fishermen seeking to maximize their catch*
- Reduced fish fertility due to genetic hybridization
- Ocean pollution
- Global climate change

Which of the following is the best example of environmental justice?

- Urban citizens win a bill to have toxic wastes taken to rural communities
- The government dams a river, flooding Native American tribal lands to create hydro-power for large cities
- *All stakeholders from an indigenous community are involved in setting a quota for the amount of wood they can take form a protected forest next to their village*
- Multi-national corporations build factories in developing countries where environmental laws are less strict.

Of the following, which would be considered living in the most environmentally sustainable way?

- Recycling all recyclable packaging
- *Reducing consumption of all products*
- Buying products labeled "eco" or "green"
- Buying the newest products available

Put the following list in order of the activities with the largest environmental impact to those with the smallest environmental impact:

A. Keeping a cell phone charger plugged into an electrical outlet for 12 hours
B. Eating one McDonald's quarter-pound hamburger
C. Eating one McDonald's chicken sandwich
D. Flying in a commercial airplane from Washington D.C. to China

- A, C, B, D
- D, A, B, C
- D, C, B, A
- *D, B, C, A*

Learning Outcomes: Attitudes

For the next group of questions, please indicate how much you agree or disagree with each statement.

- **Equal rights for all people strengthen a community.**
- **Community cooperation is necessary to solve social problems.**
- **Generally speaking consumerism is not sustainable.**
- **Access to clean water is a universal human right.**
- **I am willing to put forth a little more effort in my daily life to reduce my environmental impact.**
- **An unsustainable economy values personal wealth at the cost of others.**
- **I believe that many people can work together to solve global problems.**
- **Clean air is part of a good life.**
- **Our present consumption of natural resources will result in serious environmental challenges for generations.**
- **The well-being of others affects me.**
- **Biological diversity in itself is good.**

Response options for this set of questions are:

- Strongly disagree
- Disagree
- Somewhat disagree
- Somewhat agree
- Agree
- Strongly agree

Learning Outcomes: Behaviors (Private)

The next group of questions is meant assess what you do to live more sustainably. Some actions have big impacts, and some have small impacts. Some actions are easy to do, and some are hard to do.

We are interested in what YOU do, in your own, everyday life.

- **Limit your meat consumption?**
- **Use a reusable drinking bottle instead of disposable plastic water bottles?**
- **Switch off your electronics when they are not in use?**
- **Limit water use?**
- **Practice double-sided printing?**

Response options for this set of questions are:

- Always
- Often
- Sometimes
- Rarely
- Never

Learning Outcomes: Behaviors (Public)

Since the beginning summer[2], how often did you make a special effort to...

- **Sign a petition?**
- **Take part in a protest or demonstration?**
- **Participate in a community or environmentally-focused club or organization?**
- **Avoid companies with harmful practices?**
- **Avoid using or buying certain products?**
- **Choose locally-owned businesses over larger chains?**
- **Try to convince a friend not to buy bottled water?**

Response options for this set of questions are:

- Always
- Often
- Sometimes
- Rarely
- Never

[2]In the post-test, this question said: Since the beginning of the Fall 2017 semester, how often did you make a special effort to…

2018 MSU Economic Sustainability Survey

Introduction and Informed consent

Consent Form: Perceptions of Economic Sustainability Survey

We need your help understanding students' views about sustainability on campus. We want to hear about your perceptions of economic sustainability. This is an annual survey and you were randomly selected from MSU's student body so we need to hear from you. Thank you for your help.

As university based research, we are obligated to inform you of the following:

1. Your participation in this study is voluntary. You MUST be 18 years old or older in order to participate. You may choose not to participate at all, or you may refuse to answer certain questions or discontinue your participation at any time without consequences.

2. Your participation in this study is not expected to cause you any risk greater than those encountered in everyday life. Your answers will not harm you in any way. If you feel any discomfort in answering any question, you can withdraw from the study without any consequences.

3. If you have any questions about your rights as a participant, please contact Dr. Adam Zwickle by email at zwicklea@msu.edu. Further, if you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 5173552180, Fax 5174324503, or email irb@msu.edu or regular mail at 408 W. Circle, 207 Olds Hall, MSU, East Lansing, MI 48824.

By clicking next at the bottom of this screen, you indicate that you have voluntarily agreed to participate in this study.

Student Demographics

Q1 First, please tell us a bit about yourself. We want to make sure we are hearing from all parts of Spartan Nation!

Qyear What is your current academic status?

- o Freshman (1)
- o Sophomore (2)
- o Junior (3)
- o Senior (4)

QFull Are you a full- or part-time student?

- o Full-time student (1)
- o Part-time student (2)

QTransfer Did you enter into MSU as a first-time or transfer student?

o First-time student (1)
o Transfer student (2)

QGPA What is your current GPA, to the best of your recollection?

College What is your college?
o College of Agriculture and Natural Resources (1)
o College of Arts and Letters (2)
o Eli Broad College of Business (3)
o College of Communication Arts and Sciences (4)
o College of Education (5)
o College of Engineering (6)
o James Madison College (7)
o Lyman Briggs College (8)
o College of Music (9)
o College of Natural Science (10)
o College of Nursing (11)
o Residential College in the Arts and Humanities (12)
o College of Social Science (13)
o College of Veterinary Medicine (14)
o Don't know (15)

Display This Question:
If What is your college? = College of Agriculture and Natural Resources
AgCul What is your major?
▼ Agribusiness Management (1) ... Other (23)

Display This Question:
If What is your college? = College of Arts and Letters
ArtsLetter What is your major?
▼ Apparel and Textile Design (1) ... Other (29)

Display This Question:
If What is your college? = Eli Broad College of Business
Eli What is your major?
▼ Accounting (1) ... Other (8)

Display This Question:
If What is your college? = College of Communication Arts and Sciences

CAS What is your major?
▼ Advertising (1) ... Other (8)

Display This Question:
If What is your college? = College of Education

Edu What is your major?
▼ Athletic Training (1) ... Other (5)

Display This Question:
If What is your college? = College of Engineering
Engineer What is your major?
▼ Applied Engineering Sciences (1) ... Other (12)

Display This Question:
If What is your college? = James Madison College
JamesMadis What is your major?
▼ Comparative Cultures and Politics (1) ... Other (5)

Display This Question:
If What is your college? = Lyman Briggs College
Lymann What is your major?
▼ Biology (1) ... Other (7)

Display This Question:
If What is your college? = College of Music
Music What is your major?
▼ Composition (1) ... Other (6)

Display This Question:
If What is your college? = College of Natural Science
NatSci What is your major?
▼ Actuarial Science (1) ... Other (42)

Display This Question:
If What is your college? = College of Nursing
Nursing What is your major?
▼ Nursing (1) ... Other (5)

Display This Question:
If What is your college? = Residential College in the Arts and Humanities
ArtsHuman What is your major?
o Arts and Humanities (1)
o Other (Please specify) (2) _____

Display This Question:
If What is your college? = College of Social Science
SocSci What is your major?
▼ Anthropology - Bachelor of Arts (1) ... Other (32)

Display This Question:
If What is your college? = College of Veterinary Medicine
Vet What is your major?

▼ Preveterinary (1) ... Other (3)

Display This Question:
If What is your college? = Don't know
Qmajor Please select your major from the list.
▼ Agribusiness Management (1) ... Other (174)

Residential choices

Q419 We want to learn more about where Spartans choose to live, work and play! Please answer the following questions about your living situation.

Q436 What is your current living arrangement?
o I live on campus (1)
o I live off campus (2)
o I live in a sorority or fraternity house (3)

Skip To: Q447 If What is your current living arrangement? = I live off campus
Skip To: Q447 If What is your current living arrangement? = I live in a sorority or fraternity house

Q441 Which neighborhood do you live in?
o Brody (1)
o North (2)
o East (3)
o River Trail (4)
o South (5)

Display This Question:
If Which neighborhood do you live in? = Brody
Q442 Which hall in the Brody neighborhood do you reside in ?
o Armstrong Hall (1)
o Bailey Hall (11)
o Bryan Hall (12)
o Butterfield Hall (13)
o Emmons Hall (14)
o Rather Hall (15)

Display This Question:
If Which neighborhood do you live in? = North
Q443 Which hall in the North neighborhood do you reside in?
o Abbot Hall (1)
o Campbell Hall (4)
o Gilchrist Hall (5)
o Landon Hall (6)
o Mason Hall (7)
o Mayo Hall (8)

o Phillips Hall (9)
o Snyder Hall (10)
o Williams Hall (11)
o Yakeley Hall (12)

Display This Question:
If Which neighborhood do you live in? = East
Q444 Which hall in the East neighborhood do you reside in?
o Holmes Hall (1)
o Hubbard Hall (4)
o Akers Hall (5)

Display This Question:
If Which neighborhood do you live in? = River Trail
Q445 Which hall in the River Trail neighborhood do you reside in?
o McDonel Hall (1)
o Owen Hall (4)
o Shaw Hall (5)
o Van Hoosen Hall (6)

Display This Question:
If Which neighborhood do you live in? = South
Q160 Which hall in the South neighborhood do you reside in?
o Case Hall (1)
o Holden Hall (4)
o Wilson Hall (5)
o Wonders Hall (6)

Q446 Did you live in the same residential hall last year?
o Yes (1)
o No (2)

Q447 How important were the following factors in your choice of residence?
Not at all important (2) Somewhat important (3)Neutral (4) Quite important (5) Very important (6)
Affordability (1)
Social interaction with peers and other students (2)
Easy access to public transportation (3)
Availability of recycling facilities (4)
Access to natural daylight (5)
Co-curricular activities in health & wellness, environment, community gardens and other activities (6)

Sustainable actions on campus

Q164 The following questions are related to sustainable actions that you take on campus. Please answer those that apply to you.

Q165 I ride my bike on campus.
- o Never (1)
- o Sometimes (2)
- o Most often (3)
- o Always (4)

Q166 I use public transportation to get around campus.
- o Never (1)
- o Sometimes (4)
- o Most often (5)
- o Always (6)

Q167 I reuse and recycle whenever possible
- o Never (1)
- o Sometimes (4)
- o Most often (5)
- o Always (6)

Q170 I try to conserve energy by actions such as switching lights when not in use.
- o Never (1)
- o Sometimes (4)
- o Most often (5)
- o Always (6)

Q171 I try to limit food waste.
- o Never (1)
- o Sometimes (4)
- o Most often (5)
- o Always (6)

Q168 I avoid using plastic bags/material whenever possible
- o Never (2)
- o Sometimes (4)
- o Most often (5)
- o Always (6)

Q169 I engage in sustainability events and practices on campus.
- o Never (1)
- o Sometimes (4)
- o Most often (5)
- o Always (6)

Perceptions of economic sustainability

The next group of questions are related to your perceptions of economic sustainability.

Q176 Consumerism promotes the national economy.

- o Strongly disagree (1)
- o Disagree (2)
- o Somewhat disagree (3)
- o Neutral (4)
- o Somewhat agree (5)
- o Agree (6)
- o Strongly agree (7)

ENV3 The present level of consumption in the United States will lead to problems for future generations.

- o Strongly disagree (1)
- o Disagree (2)
- o Somewhat disagree (3)
- o Somewhat agree (4)
- o Agree (5)
- o Strongly agree (6)

Q200 Depletion of environmental resources is a cost we must pay to maintain our economic wellness.

- o Strongly disagree (2)
- o Disagree (4)
- o Somewhat disagree (5)
- o Neutral (6)
- o Somewhat agree (7)
- o Agree (8)
- o Strongly agree (9)

BonusQ2 An unsustainable economy values personal wealth at the cost of others.

- o Strongly disagree (1)
- o Disagree (2)
- o Somewhat disagree (3)
- o Somewhat agree (4)
- o Agree (5)
- o Strongly agree (6)

Q202 What according to you makes an economy sustainable? Select all that apply.

- ▢ Limitless economic growth and development (1)
- ▢ Preservation of non-renewable resources (2)
- ▢ Creating more jobs (3)
- ▢ Promoting international trade (4)
- ▢ Supporting local businesses (5)
- ▢ Reducing unnecessary consumption of resources (6)

Q203 Who, according to you, should be responsible for ensuring economic sustainability practices are followed? You can choose more than one option.

- o Government (1)

o Industries (2)
o Organizations (3)
o Individuals (4)
o Academic researchers (5)

Q183 How important is it to you to buy products that are sustainable?
o Not important (1)
o Important (2)
o Somewhat important (3)
o Neutral (4)

Q174 What, according to you, does it mean when companies sell their products as 'sustainable'? Select all that apply.
▢ The product is durable and will last longer. (1)
▢ The product is environmentally friendly (2)
▢ The product can be recycled and reused. (3)
▢ The product was manufactured using ethical practices. (4)
▢ The product was made with renewable resources. (5)

Q184 Sustainable products are usually more expensive.
o Strongly disagree (1)
o Disagree (2)
o Somewhat disagree (3)
o Neutral (4)
o Somewhat agree (5)
o Agree (6)
o Strongly agree (7)

ENV4 Given a choice between a regular product vs a product that is certified as sustainable, how much more are you willing to pay for the sustainable product?
o I am not willing to pay extra . (1)
o 5-10% of the price of the regular product (2)
o 10-15% of the price of the regular product (3)
o 15-20% of the price of the regular product (4)
o 20-25% of the price of the regular product (5)
o 25% or more of the price of the regular product (6)

Promoting local-businesses

QBehPub02 How often do you make an effort to support local and small businesses?
o Often (2)
o Sometimes (3)
o Rarely (4)
o Never (5)

Q198 Products from locally-owned businesses are usually....
..better quality than chain stores.

o True (1)
o False (2)
o Don't know. (3)

Q199 Products from locally owned business are usually...
... more expensive than chain stores.
o True (1)
o False (2)
o Don't know (3)

QBehPub05 Products from locally owned business are usually..
more sustainable than chain stores.
o True (2)
o False (3)
o Don't know (6)

Participation in Follow-Up

In an effort to understand how students grow and change in their perspectives during their time at MSU, we will contact a few selected students with some follow-up questions in the future.

Would you agree to be contacted again at the end of the semester?
o Yes (4)
o No (5)

Other Demographics

Q383 Finally, we would like to know a little bit more about you as a person. Please answer the the following questions to the best of your ability.
Qdad_ed What is the highest level of education your father completed?
o Less than high school (1)
o High school/GED (2)
o Vocational/technical degree or some college (3)
o Bachelor's degree (4)
o Master's degree (5)
o PhD or equivalent degree (6)
o Don't know/Not applicable (7)

Qmom_ed What is the highest level of education your mother completed?
o Less than high school (1)
o High school/GED (2)
o Vocational/technical degree or some college (3)
o Bachelor's degree (4)

o Master's degree (5)
o PhD or equivalent degree (6)
o Don't know/Not applicable (7)

Qfinances When it comes to paying for university tuition and living costs, which of the following are true.
Yes (1) No (2)
My parents pay most of the costs (1)
I need to have a part-time job during the school year (2)
I need financial aid (4)
I need to take out loans (5)

Qtownsize Which of the following describes the area you come from?
o Large urban (over 100,000 residents) (1)
o Medium urban (25,000 -- 100,000 residents) (2)
o Small urban (2,500 - 24,999 residents) (3)
o Rural town (< 2,500 residents) (4)

Qage In what year were you born?
_____

Qgender To which gender identity do you most identify?
o Male (1)
o Female (2)
o Not listed (3)

Qborn Were you born in the United States?
o Yes (1)
o No (2)

Display This Question:
If Were you born in the United States? = No

Qcountry In what country were you born?
_____

Display This Question:
If If In what country were you born? Text Response Is Displayed

Qcountry2 How long have you been in the United States (In years)?
o Years (1) _____

Qhispanic Do you consider yourself Latino or Hispanic?
o Yes (1)
o No (2)
Qrace Which of the following describes your race? You may select as many as apply.

- ▢ White (1)
- ▢ Black or African American (2)
- ▢ American Indian or Alaska Native (4)
- ▢ Asian Indian (6)
- ▢ Japanese (8)
- ▢ Chinese (9)
- ▢ Filipino (10)
- ▢ Korean (11)
- ▢ Vietnamese (12)
- ▢ Guamanian or Chamorro (13)
- ▢ Samoan (14)
- ▢ Native Hawaiian (15)
- ▢ Other Asian (16) _____
- ▢ Other Pacific Islander (17) _____
- ▢ Other (18) _____

Q302 What is your present religion, if any?

- o Protestant (1)
- o Roman Catholic (2)
- o Mormon (4)
- o Orthodox, such as Greek or Russian Orthodox (6)
- o Jewish (8)
- o Muslim (9)
- o Buddhist (10)
- o Hindu (11)
- o Atheist (12)
- o Agnostic (13)
- o Spiritual, but not religious (14)
- o Something else (16) _____

Debrief

Thank you for participating, and...

GO GREEN!

2018 Sustainability Survey

Start of Block: Introduction and Informed consent ...

consent Consent Form: Economic Sustainability Survey

Hello Spartans! We need your help in understanding students' views about economic sustainability, residential choices, and knowledge of environment issues and sustainability, . This is an annual survey and you were randomly selected from MSU's student body to participate in this survey .We would love to hear from you. Thank you for your help.

As university-based research, we are obligated to inform you of the following:

1. Your participation in this study is voluntary. You **MUST** be 18 years old or older in order to participate. You may choose not to participate at all, or you may refuse to answer certain questions or discontinue your participation at any time without consequences.
2. Your participation in this study is not expected to cause you any risk greater than those encountered in everyday life. Your answers will not harm you in any way. If you feel any discomfort in answering any question, you can withdraw from the study without any consequences.
3. If you have any questions about your rights as a participant, please contact Dr. Adam Zwickle by email at zwicklea@msu.edu. Further, if you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 5173552180, Fax 5174324503, or email irb@msu.edu or regular mail at 4000 Collins Road, Suite 136, Lansing MI 48910.

By clicking next at the bottom of this screen, you indicate that you have voluntarily agreed to participate in this study.

End of Block: Introduction and Informed consent ...

Start of Block: Student Demographics

demo First, please tell us a bit about yourself. We want to make sure we are hearing from all parts of Spartan Nation!

Q2.2 What is your current academic status?

- O Freshman (1)
- O Sophomore (2)
- O Junior (3)
- O Senior (4)

Page Break

Q2.3 Are you a full- or part-time student?

- O Full-time student (1)
- O Part-time student (2)

Page Break

Q2.4 Did you enter into MSU as a first-time or transfer student?

- O First-time student (1)
- O Transfer student (2)

Page Break

*

Q2.5 What is your current GPA, to the best of your recollection?

_____

Page Break

Q2.6 What is your college?

- O College of Agriculture and Natural Resources (1)
- O College of Arts and Letters (2)
- O Eli Broad College of Business (3)
- O College of Communication Arts and Sciences (4)
- O College of Education (5)
- O College of Engineering (6)
- O James Madison College (7)
- O Lyman Briggs College (8)
- O College of Music (9)
- O College of Natural Science (10)
- O College of Nursing (11)
- O Residential College in the Arts and Humanities (12)
- O College of Social Science (13)
- O College of Veterinary Medicine (14)
- O Don't know (15)

Page Break

Display This Question:
If What is your college? = College of Agriculture and Natural Resources

Q2.7 What is your major?

▼ Agribusiness Management (1) ... Other (23)

Page Break

Display This Question:
If What is your college? = College of Arts and Letters

Q2.8 What is your major?

▼ Apparel and Textile Design (1) ... Other (29)

Display This Question:
If What is your college? = Eli Broad College of Business

Q2.9 What is your major?

▼ Accounting (1) ... Other (8)

Display This Question:
If What is your college? = College of Communication Arts and Sciences

Q2.10 What is your major?

▼ Advertising (1) ... Other (8)

Display This Question:
If What is your college? = College of Education

Q2.11 What is your major?

▼ Athletic Training (1) ... Other (5)

Display This Question:
If What is your college? = College of Engineering

Q2.12 What is your major?

▼ Applied Engineering Sciences (1) ... Other (12)

Display This Question:
If What is your college? = James Madison College

Q2.13 What is your major?

▼ Comparative Cultures and Politics (1) ... Other (5)

Display This Question:
If What is your college? = Lyman Briggs College

Q2.14 What is your major?

▼ Biology (1) ... Other (7)

Display This Question:
If What is your college? = College of Music

Q2.15 What is your major?

▼ Composition (1) ... Other (6)

Display This Question:
If What is your college? = College of Natural Science

Q2.16 What is your major?

▼ Actuarial Science (1) ... Other (42)

Display This Question:
If What is your college? = College of Nursing

Q2.17 What is your major?

▼ Nursing (1) ... Other (5)

Display This Question:
If What is your college? = Residential College in the Arts and Humanities

Q2.18 What is your major?

O Arts and Humanities (1)

O Other (Please specify) (2) _____

Display This Question:
If What is your college? = College of Social Science

Q2.19 What is your major?

▼ Anthropology - Bachelor of Arts (1) ... Other (32)

Display This Question:
If What is your college? = College of Veterinary Medicine

Q2.20 What is your major?

▼ Preveterinary (1) ... Other (3)

Display This Question:
If What is your college? = Don't know

Q2.21 Please select your major from the list.

▼ Agribusiness Management (1) ... Other (174)

Page Break

End of Block: Student Demographics

Start of Block: Assessment of Sustainability Knowledge

ASK The first group of questions is meant to assess what people know about science and environmental issues. Please answer to the best of your ability.

Page Break

Q5.2 What is the most common cause of pollution of streams and rivers in the U.S.?

- O Dumping of garbage by cities (1)
- O Surface water running off of yards, city streets, paved lots, and farm fields (2)
- O Litter near streams and rivers (3)
- O Waste dumped by factories (4)
- O Don't know (5)

Page Break

Q5.3 Ozone forms a protective layer in the earth's upper atmosphere. What does ozone protect us from?

- O Acid rain (1)
- O Climate change (2)
- O Sudden changes in temperature (3)
- O Harmful UV rays (4)
- O Don't know (5)

Page Break

Q5.4 Which of the following is an example of sustainable forest management?

- O Setting aside forests to be off limits to the public (1)
- O Never harvesting more than what the forest produces in new growth (2)
- O Producing lumber for nearby communities to build affordable housing (3)
- O Putting local communities in charge of forest resources (4)
- O Don't know (5)

Page Break

Q5.5 Which of the following is the most commonly used definition of sustainable development?

- O Creating a government welfare system that ensures universal access to education, health care, and social services (1)
- O Building a neighborhood that is both socio-demographically and economically diverse (2)
- O Meeting the needs of the present without compromising the ability of future generations to meet their own needs (3)
- O Setting aside resources for preservation, never to be used (4)
- O Don't know (5)

Page Break

Q5.6 Over the past 3 decades, what has happened to the difference between the wealth of the richest and poorest Americans?

- O The difference has increased (1)
- O The difference has stayed about the same (2)
- O The difference has decreased (3)
- O Don't know (4)

Page Break

Q5.7 Which of the following countries passed the U.S. to become the largest emitter of the greenhouse gas carbon dioxide?

- O China (1)
- O Sweden (2)
- O Brazil (3)
- O Japan (4)
- O Don't know (5)

Page Break

Q5.8 Many economists argue that electricity prices in the U.S. are too low because…

- O They do not reflect the costs of pollution from generating the electricity (1)
- O Too many suppliers go out of business (2)
- O Electric companies have a monopoly in their service area (3)
- O Consumers spend only a small part of their income on energy (4)
- O Don't know (5)

Page Break

Q5.9 Which of the following is the most commonly used definition of economic sustainability?

- O Maximizing the share price of a company's stock (1)
- O Long term profitability (2)
- O When costs equal revenue (3)
- O Continually expanding market share (4)
- O Don't know (5)

Page Break

Q5.10 Which of the following is a leading cause of depletion of fish stocks in the Atlantic Ocean?

- O Fishermen seeking to maximize their catch (1)
- O Reduced fish fertility due to genetic hybridization (2)
- O Ocean pollution (3)
- O Global climate change (4)
- O Don't know (5)

Page Break

Q5.11 Which of the following is the best example of environmental justice?

- O Urban citizens win a bill to have toxic waste taken to rural communities (1)
- O Government dams a river, flooding Native American tribal lands to create hydro-power for large cities (2)
- O All stakeholders from an indigenous community are involved in setting a quota for the amount of wood they can take from a protected forest next to their village (3)
- O Multi-national corporations build factories in developing countries where environmental laws are less strict (4)
- O Don't know (5)

Page Break

Q5.12 Of the following, which would be considered living in the most environmentally sustainable way?

- O Recycling all recyclable packaging (1)
- O Reducing consumption of all products (2)
- O Buying products labeled "eco" or "green" (3)
- O Buying the newest products available (4)
- O Don't know (5)

Page Break

Q5.13 Put the following list in order of the activities with the largest environmental impact to those with the smallest environmental impact:

A. Keeping a cell phone charger plugged into an electrical outlet for 12 hours
B. Eating one McDonald's quarter-pound hamburger
C. Eating one McDonald's chicken sandwich
D. Flying in a commercial airplane from Washington D.C. to China

- O A, C, B, D (1)
- O D, A, B, C (2)
- O D, C, B, A (3)
- O D, B, C, A (4)
- O Don't know (5)

Page Break

End of Block: Assessment of Sustainability Knowledge

Start of Block: Sustainability Attitudes

SAS For the next group of questions on sustainability attitudes, please indicate how much you agree or disagree with each statement.

Page Break

Q6.2 Equal rights for all people strengthen a community.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Somewhat agree (4)
- O Agree (5)
- O Strongly agree (6)

Page Break

Q6.3 Generally speaking consumerism is not sustainable.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Somewhat agree (4)
- O Agree (5)
- O Strongly agree (6)

Page Break

Q6.4 Community cooperation is necessary to solve social problems.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Somewhat agree (4)
- O Agree (5)
- O Strongly agree (6)

Page Break

Q6.5 Access to clean water is a universal human right.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Somewhat agree (4)
- O Agree (5)
- O Strongly agree (6)

Page Break

Q6.6 I am willing to put forth a little more effort in my daily life to reduce my environmental impact.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Somewhat agree (4)
- O Agree (5)
- O Strongly agree (6)

Page Break

Q6.7 An unsustainable economy values personal wealth at the cost of others.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Somewhat agree (4)
- O Agree (5)
- O Strongly agree (6)

Page Break

Q6.8 I believe that many people can work together to solve global problems.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Somewhat agree (4)
- O Agree (5)
- O Strongly agree (6)

Page Break

Q6.9 Clean air is part of a good life.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Somewhat agree (4)
- O Agree (5)
- O Strongly agree (6)

Page Break

Q6.10 Our present consumption of natural resources will result in serious environmental challenges for generations.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Somewhat agree (4)
- O Agree (5)
- O Strongly agree (6)

Page Break

Q6.11 The well-being of others affects me.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Somewhat agree (4)
- O Agree (5)
- O Strongly agree (6)

Page Break

Q6.12 Biological diversity in itself is good.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Somewhat agree (4)
- O Agree (5)
- O Strongly agree (6)

Page Break

End of Block: Sustainability Attitudes

Start of Block: Perceptions of economic sustainability

EconSus The next group of questions are related to your perceptions of economic sustainability. Please indicate how much you agree or disagree with each statement.

Page Break

Q8.2 Consumerism promotes the national economy.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Neutral (4)
- O Somewhat agree (5)
- O Agree (6)
- O Strongly agree (7)

Page Break

Q8.3 The present level of consumption in the United States will lead to problems for future generations.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Somewhat agree (4)
- O Agree (5)
- O Strongly agree (6)

Page Break

Q8.4 The use of environmental resources is a cost we must pay to maintain our economy

- O Strongly disagree (2)
- O Disagree (4)
- O Somewhat disagree (5)
- O Neutral (6)
- O Somewhat agree (7)
- O Agree (8)
- O Strongly agree (9)

Page Break

Q8.5 An economy is sustainable when there is.....

limitless economic growth and development.

- O Strongly disagree (2)
- O Disagree (4)
- O Somewhat disagree (5)
- O Neutral (6)
- O Somewhat agree (7)
- O Agree (8)
- O Strongly agree (9)

Page Break

Q8.6 An economy is sustainable when there is.....

preservation of non-renewable resources

- O Strongly disagree (2)
- O Disagree (4)
- O Somewhat disagree (5)
- O Neutral (6)
- O Somewhat agree (7)
- O Agree (8)
- O Strongly agree (9)

Page Break

Q8.7 An economy is sustainable when there is.....

creation of more jobs

- O Strongly disagree (2)
- O Disagree (4)
- O Somewhat disagree (5)
- O Neutral (6)
- O Somewhat agree (7)
- O Agree (8)
- O Strongly agree (9)

Page Break

Q8.8 An economy is sustainable when there is...

support and promotion of local businesses.

- O Strongly disagree (2)
- O Disagree (4)
- O Somewhat disagree (5)
- O Neutral (6)
- O Somewhat agree (7)
- O Agree (8)
- O Strongly agree (9)

Page Break

Q8.9 An economy is sustainable when there is...

support and promotion of local businesses.

- O Strongly disagree (2)
- O Disagree (4)
- O Somewhat disagree (5)
- O Neutral (6)
- O Somewhat agree (7)
- O Agree (8)
- O Strongly agree (9)

Page Break

End of Block: Perceptions of economic sustainability

Start of Block: Residential choices

Reschoice We want to learn more about where Spartans choose to live, work and play! Please answer the following questions about your living situation.

Page Break

Q3.2 What is your current living arrangement?

- O I live on campus (1)
- O I live off campus (2)
- O I live in a sorority or fraternity house (3)

Skip To: Q3.10 If What is your current living arrangement? = I live off campus
Skip To: Q3.10 If What is your current living arrangement? = I live in a sorority or fraternity house

Page Break

Q3.3 Which neighborhood do you live in?

- O Brody (1)
- O North (2)
- O East (3)
- O River Trail (4)
- O South (5)

Page Break

Display This Question:
If Which neighborhood do you live in? = Brody

Q3.4 Which hall in the Brody neighborhood do you reside in ?

- O Armstrong Hall (1)
- O Bailey Hall (11)
- O Bryan Hall (12)
- O Butterfield Hall (13)
- O Emmons Hall (14)
- O Rather Hall (15)

Page Break

Display This Question:
If Which neighborhood do you live in? = North

Q3.5 Which hall in the North neighborhood do you reside in?

- O Abbot Hall (1)
- O Campbell Hall (4)
- O Gilchrist Hall (5)
- O Landon Hall (6)
- O Mason Hall (7)
- O Mayo Hall (8)
- O Phillips Hall (9)
- O Snyder Hall (10)
- O Williams Hall (11)
- O Yakeley Hall (12)

Page Break

Display This Question:
If Which neighborhood do you live in? = East

Q3.6 Which hall in the East neighborhood do you reside in?

- O Holmes Hall (1)
- O Hubbard Hall (4)
- O Akers Hall (5)

Page Break

Display This Question:
If Which neighborhood do you live in? = River Trail

Q3.7 Which hall in the River Trail neighborhood do you reside in?

- O McDonel Hall (1)
- O Owen Hall (4)
- O Shaw Hall (5)
- O Van Hoosen Hall (6)

Page Break

Display This Question:
If Which neighborhood do you live in? = South

Q3.8 Which hall in the South neighborhood do you reside in?

- O Case Hall (1)
- O Holden Hall (4)
- O Wilson Hall (5)
- O Wonders Hall (6)

Page Break

Q3.9 Did you live in the same residential hall last year ?

- O Yes (1)
- O No (2)

Page Break

Q270 Have you participated in any sustainability related practices in your dorm?

- O Yes (1)
- O No (2)
- O Don't know (3)

Q3.10 How important was access to public transportation in your choice of residence?

- O Not important (1)
- O Slightly Important (3)
- O Important (4)
- O Very important (5)

Q268 How important was availability of recycling facilities in your choice of residence?

- O Not important (1)
- O Slightly Important (4)
- O Important (5)
- O Very important (6)

Q267 How important was availability of environment and nature based co-curricular activities (for example community gardens etc.) in your choice of residence?

- O Not important (1)
- O Slightly Important (4)
- O Important (5)
- O Very important (6)

Page Break

Q271 How important is MSU's efforts to make our campus more sustainable to you?

- O Not important (1)
- O Slightly Important (4)
- O Important (5)
- O Very important (6)

Endof Block: Residential choices

Start of Block: Sustainable actions on campus

CampusSUS The following questions are related to sustainable actions that you take on campus. Please answer to the best of your ability.

Page Break

Q7.2 I ride my bike on campus.

- O Never (1)
- O Sometimes (2)
- O Most often (3)
- O Always (4)

Page Break

Q7.3 I use public transportation to get around campus.

- O Never (1)
- O Sometimes (4)
- O Most often (5)
- O Always (6)

Page Break

Q7.4 I reuse and recycle whenever possible

- O Never (1)
- O Sometimes (4)
- O Most often (5)
- O Always (6)

Page Break

Q7.5 I try to conserve energy by actions such as switching lights when not in use.

- O Never (1)
- O Sometimes (4)
- O Most often (5)
- O Always (6)

Page Break

Q7.6 I try to limit food waste.

- O Never (1)
- O Sometimes (4)
- O Most often (5)
- O Always (6)

Page Break

Q7.7 I avoid using plastic bags/material whenever possible

- O Never (2)
- O Sometimes (4)
- O Most often (5)
- O Always (6)

Page Break

Q7.8 I engage in sustainability events and practices on campus.

- O Never (1)
- O Sometimes (4)
- O Most often (5)
- O Always (6)

Page Break

End of Block: Sustainable actions on campus

Start of Block: Sustainable economic behavior

Page Break

EconSusBeh The following questions relate to your sustainable economic behavior. Please answer to the best of your ability.

Page Break

Q9.2 How important is it to you to buy products that are sustainable?

- O Not at all important (8)
- O Somewhat important (9)
- O Important (10)
- O Very important (11)

Page Break

Q9.3 What, according to you, does it mean when companies sell their products as 'sustainable'?

	True (1)	False (2)
The product is durable and will last longer. (1)	O	O
The product is environmentally friendly (2)	O	O
The product can be recycled and reused. (3)	O	O
The product was manufactured using ethical practices. (4)	O	O
The product was made with renewable resources. (5)	O	O

Page Break

Q9.4 Sustainable products are usually more expensive.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (3)
- O Neutral (4)
- O Somewhat agree (5)
- O Agree (6)
- O Strongly agree (7)

Page Break

Q9.5 Given a choice between a regular product vs a product that is certified as sustainable, how much more are you willing to pay for the sustainable product?

- O I am not willing to pay extra (7)
- O 5-10% of the regular price (8)
- O 10-15% of the regular price (9)
- O 15-20% of the regular price (10)
- O 20-25% of the regular price (11)
- O More than 25% of the regular price (12)

Page Break

Q9.6 How often do you make an effort to support local and small businesses ?

- O Often (2)
- O Sometimes (3)
- O Rarely (4)
- O Never (5)

Page Break

Q9.7 Products from locally-owned businesses are usually....
..better quality than chain stores.

- O Strongly disagree (1)
- O Disagree (8)
- O Somewhat disagree (9)
- O Neutral (10)
- O Somewhat agree (11)
- O Agree (12)
- O Strongly agree (13)

Page Break

Q9.8 Products from locally-owned businesses are usually....
..better quality than chain stores.

- O Strongly disagree (1)
- O Disagree (2)
- O Somewhat disagree (4)
- O Neutral (5)
- O Somewhat agree (6)
- O Agree (7)
- O Strongly agree (8)

Page Break

Q9.9 Products from locally owned business are usually..... more expensive than chain stores.

- O Strongly disagree (1)
- O Disagree (5)
- O Somewhat disagree (6)
- O Neutral (7)
- O Somewhat agree (8)
- O Agree (9)
- O Strongly agree (10)

Page Break

Q9.10 Products from locally owned business are usually.....more sustainable than chain stores.

- O Strongly disagree (2)
- O Disagree (7)
- O Somewhat disagree (8)
- O Neutral (9)
- O Somewhat agree (10)
- O Agree (11)
- O Strongly agree (12)

Page Break

End of Block: Sustainable economic behavior

Start of Block: Source of sustainability knowledge

Source The following questions relate to your source of sustainability knowledge. Think about where you have learned about sustainability and indicate your level of agreement or disagreement with the following sentences.

Page Break

Q4.2 I learnt about sustainability from high school course work related to sustainability (such as natural science, geography etc.)

- O • Strongly Disagree (1)
- O • Disagree (4)
- O • Neither Agree nor Disagree (5)
- O • Somewhat Agree (6)
- O • Strongly Agree (7)

Page Break

Q4.3 I learnt about sustainability from high school course work not related to sustainability (like humanities, literature, social studies, etc.)

- O • Strongly Disagree (1)
- O • Disagree (4)
- O • Neither Agree nor Disagree (5)
- O • Somewhat Agree (6)
- O • Strongly Agree (7)

Page Break

Q4.4 I learnt about sustainability from high school clubs or organizations (like student government, athletics, community service group, etc.)

- Strongly Disagree (1)
- Disagree (4)
- Neither Agree nor Disagree (5)
- Somewhat Agree (6)
- Strongly Agree (7)

Page Break

Q4.5 I learnt about sustainability from college course work related to sustainability (such as natural science, geography etc.)

- Strongly Disagree (1)
- Disagree (4)
- Neither Agree nor Disagree (5)
- Somewhat Agree (6)
- Strongly Agree (7)

Page Break

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- Strongly Disagree (1)
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Page reak

Q4.7 I learnt about sustainability from college clubs or organizations (like student government, athletics. community service groups etc.)

- Strongly Disagree (1)
- Disagree (4)
- Neither Agree nor Disagree (5)
- Somewhat Agree (6)
- Strongly Agree (7)

Page Break

Q4.8 I learnt about sustainability from family members (like parents, siblings, grandparents etc.) and friends .

- Strongly Disagree (4)
- Disagree (5)
- Neither Agree nor Disagree (6)
- Somewhat Agree (7)
- Strongly Agree (8)

Page Break

Q4.9 I learnt about sustainability from social media (like Facebook, Snapchat, Twitter, Instagram, etc.)

- Strongly Disagree (1)
- Disagree (4)
- Neither Agree nor Disagree (5)
- Somewhat Agree (6)
- Strongly Agree (7)

Page Break

Q4.10 I learnt about sustainability from campus communications (like signs hanging up around campus, university websites, etc.)

- O Strongly Disagree (1)
- O • Disagree (4)
- O • Neither Agree nor Disagree (5)
- O • Somewhat Agree (6)
- O • Strongly Agree (7)

Page Break

Q4.11 I learnt about sustainability from previous experiences (like experiencing a flood, living with water pollution, etc.)

- O Strongly Disagree (1)
- O • Disagree (4)
- O • Neither Agree nor Disagree (5)
- O • Somewhat Agree (6)
- O • Strongly Agree (7)

Page Break

Q4.12 I learnt about sustainability from other sources like

_____

Page Break

End of Block: Source of sustainability knowledge

Start of Block: Other Demographics

OtherDemo Finally, we would like to know a little bit more about you as a person. Please answer the the following questions to the best of your ability.

Page Break

Q10.2 What is the highest level of education your father completed?

- O Less than high school (1)
- O High school/GED (2)
- O Vocational/technical degree or some college (3)
- O Bachelor's degree (4)
- O Master's degree (5)
- O PhD or equivalent degree (6)
- O Don't know/Not applicable (7)

Page Break

Q10.3 What is the highest level of education your mother completed?

- O Less than high school (1)
- O High school/GED (2)
- O Vocational/technical degree or some college (3)
- O Bachelor's degree (4)
- O Master's degree (5)
- O PhD or equivalent degree (6)
- O Don't know/Not applicable (7)

Page Break

Q10.4 When it comes to paying for university tuition and living costs, which of the following are true.

	Yes (1)	No (2)
My parents pay most of the costs (1)	O	O
I need to have a part-time job during the school year (2)	O	O
I need financial aid (4)	O	O
I need to take out loans (5)	O	O

Page Break

Q10.5 Which of the following describes the area you come from?

- O Large urban (over 100,000 residents) (1)
- O Medium urban (25,000 -- 100,000 residents) (2)
- O Small urban (2,500 - 24,999 residents) (3)
- O Rural town (< 2,500 residents) (4)

Page Break

Q10.6 In what year were you born?

_____

Page Break

Q10.7 To which gender identity do you most identify?

- O Male (1)
- O Female (2)
- O Not listed (3)

Page Break

Q10.8 Were you born in the United States?

- O Yes (1)
- O No (2)

Page Break

Display This Question:
If Were you born in the United States? = No

Q10.9 In what country were you born?

_____

Page Break

Display This Question:
If If In what country were you born? Text Response Is Displayed

Q10.10 How long have you been in the United States (In years)?

- O Years (1) _____

Page Break

Q10.11 Do you consider yourself Latino or Hispanic?

- O Yes (1)
- O No (2) _____

Page Break

Q10.12 Which of the following describes your race? You may select as many as apply.

- ☐ White (1)
- ☐ Black or African American (2)
- ☐ American Indian or Alaska Native (4)
- ☐ Asian Indian (6)
- ☐ Japanese (8)
- ☐ Chinese (9)
- ☐ Filipino (10)
- ☐ Korean (11)
- ☐ Vietnamese (12)
- ☐ Guamanian or Chamorro (13)
- ☐ Samoan (14)
- ☐ Native Hawaiian (15)
- ☐ Other Asian (16) _____
- ☐ Other Pacific Islander (17) _____
- ☐ Other (18) _____

Page Break

Q10.13 What is your present religion, if any?

- O Protestant (1)
- O Roman Catholic (2)
- O Mormon (4)
- O Orthodox, such as Greek or Russian Orthodox (6)
- O Jewish (8)
- O Muslim (9)
- O Buddhist (10)
- O Hindu (11)
- O Atheist (12)
- O Agnostic (13)
- O Spiritual, but not religious (14)
- O Something else (16) _____

End of Block: Other Demographics

Start of Block: Conclusion Block

Concl **Thank you for participating, and...**

GO GREEN!

End of Block: Conclusion Block

Linking Teaching Practices to Students' Pro-Sustainability Behaviors

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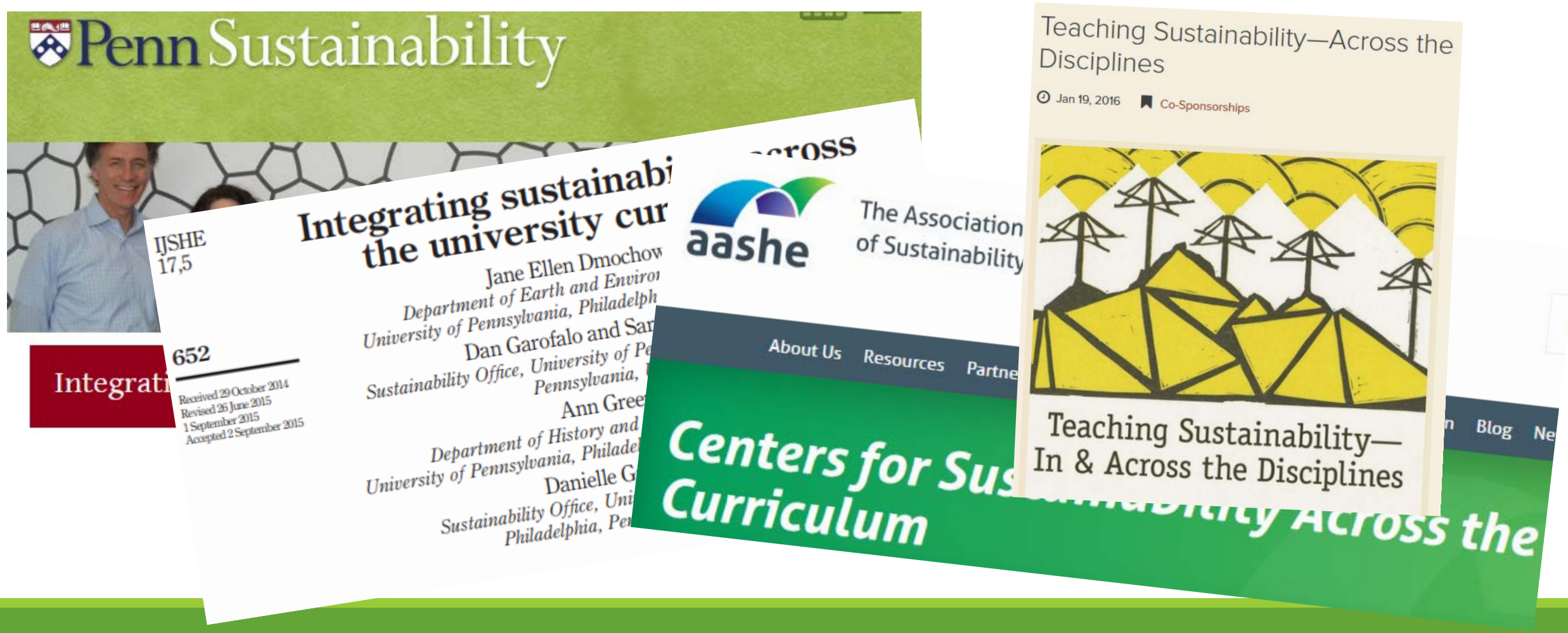
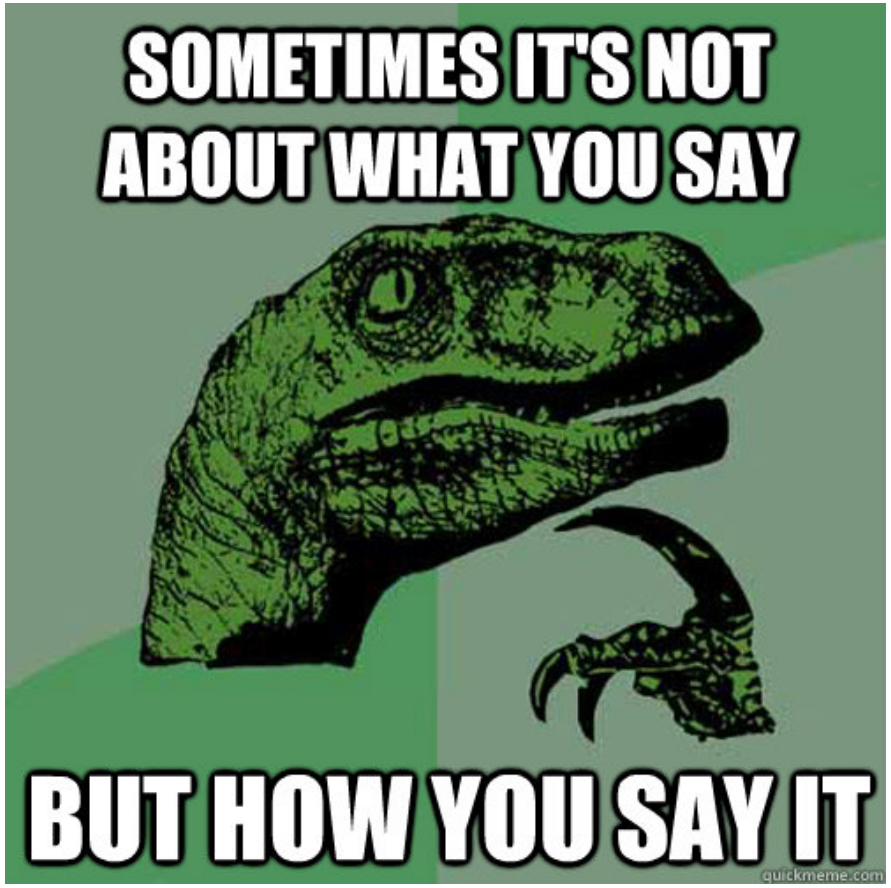
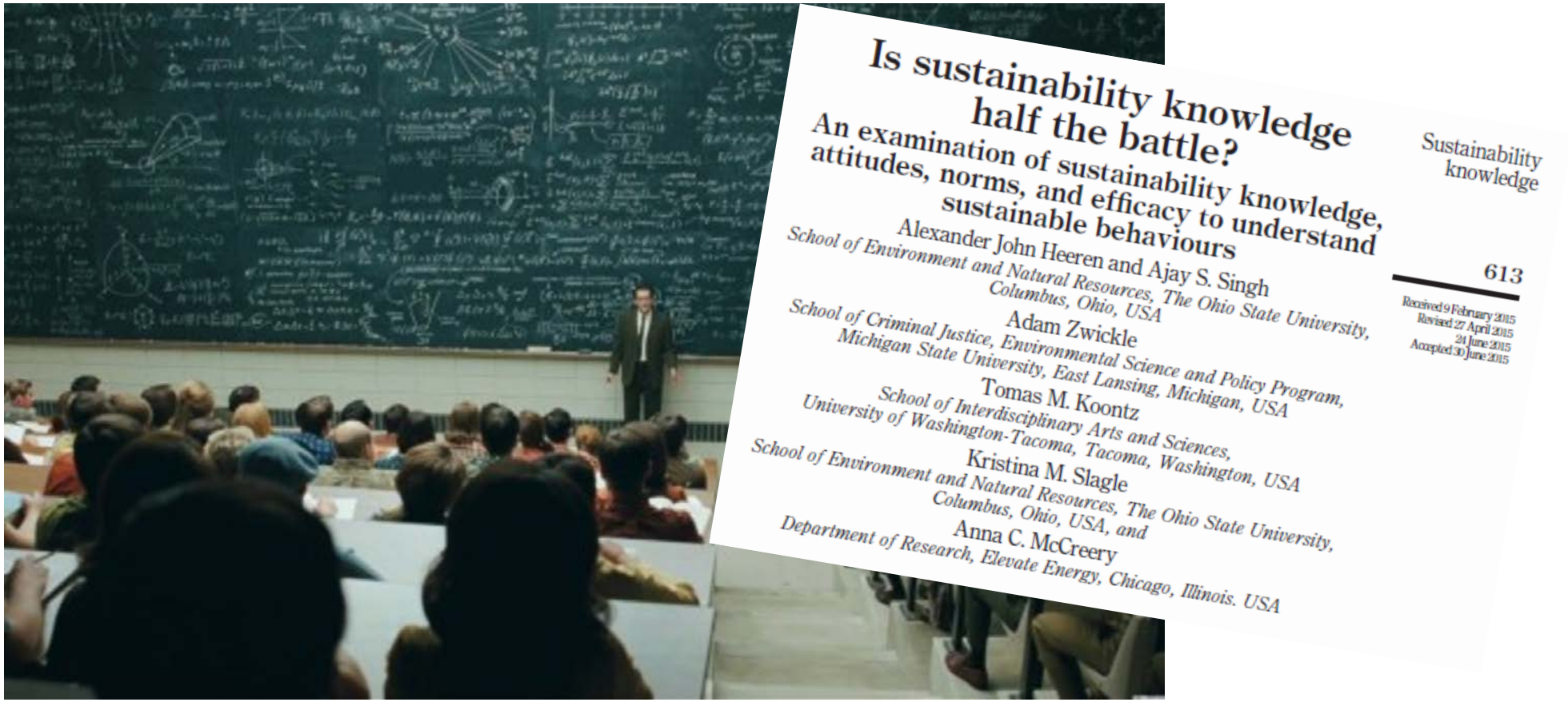
Introduction



Introduction



“Just teach them sustainability!”



Is sustainability knowledge half the battle?
An examination of sustainability knowledge, attitudes, norms, and efficacy to understand sustainable behaviours

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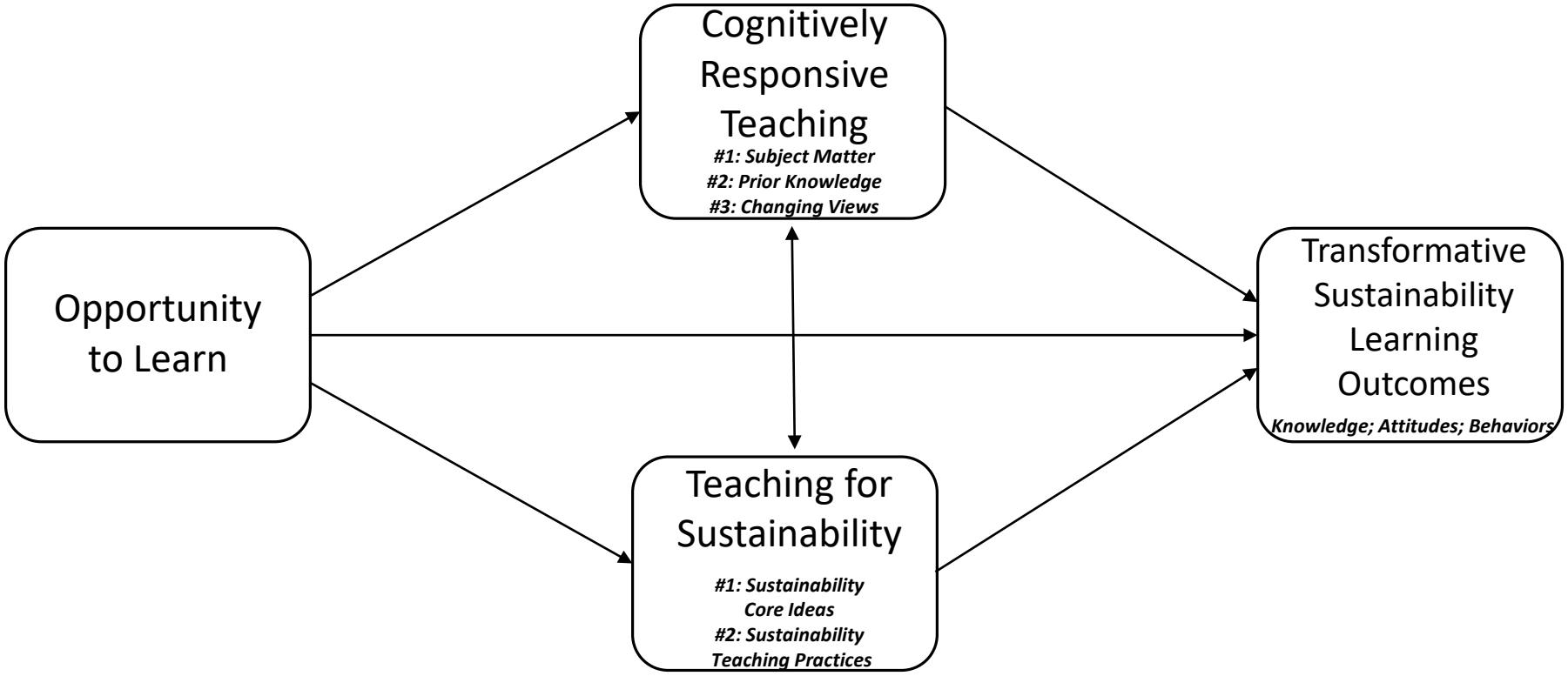
Received 9 February 2015
Revised 27 April 2015
24 June 2015
Accepted 30 June 2015

Teaching Practices

Research Question

Does *how* one teaches a class influence student sustainability behaviors?

Conceptual Framework



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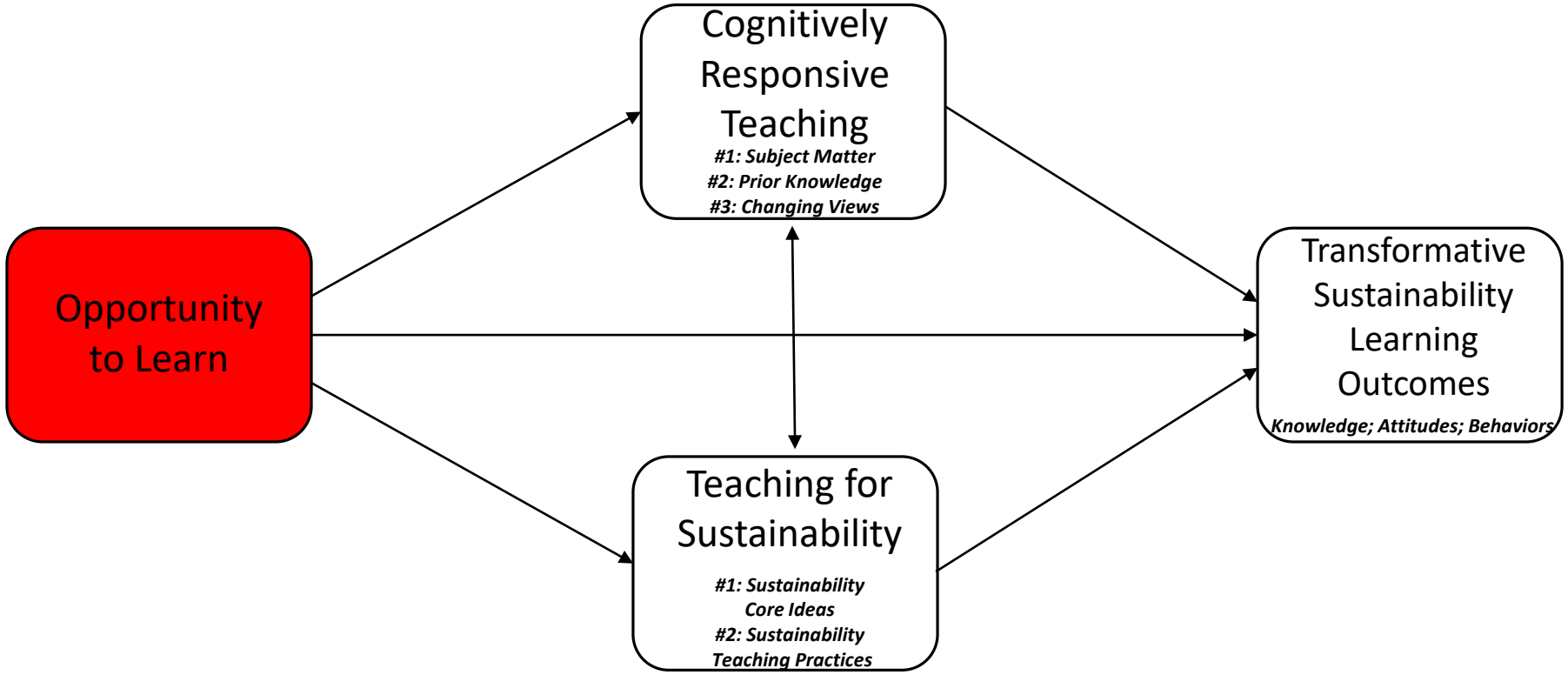

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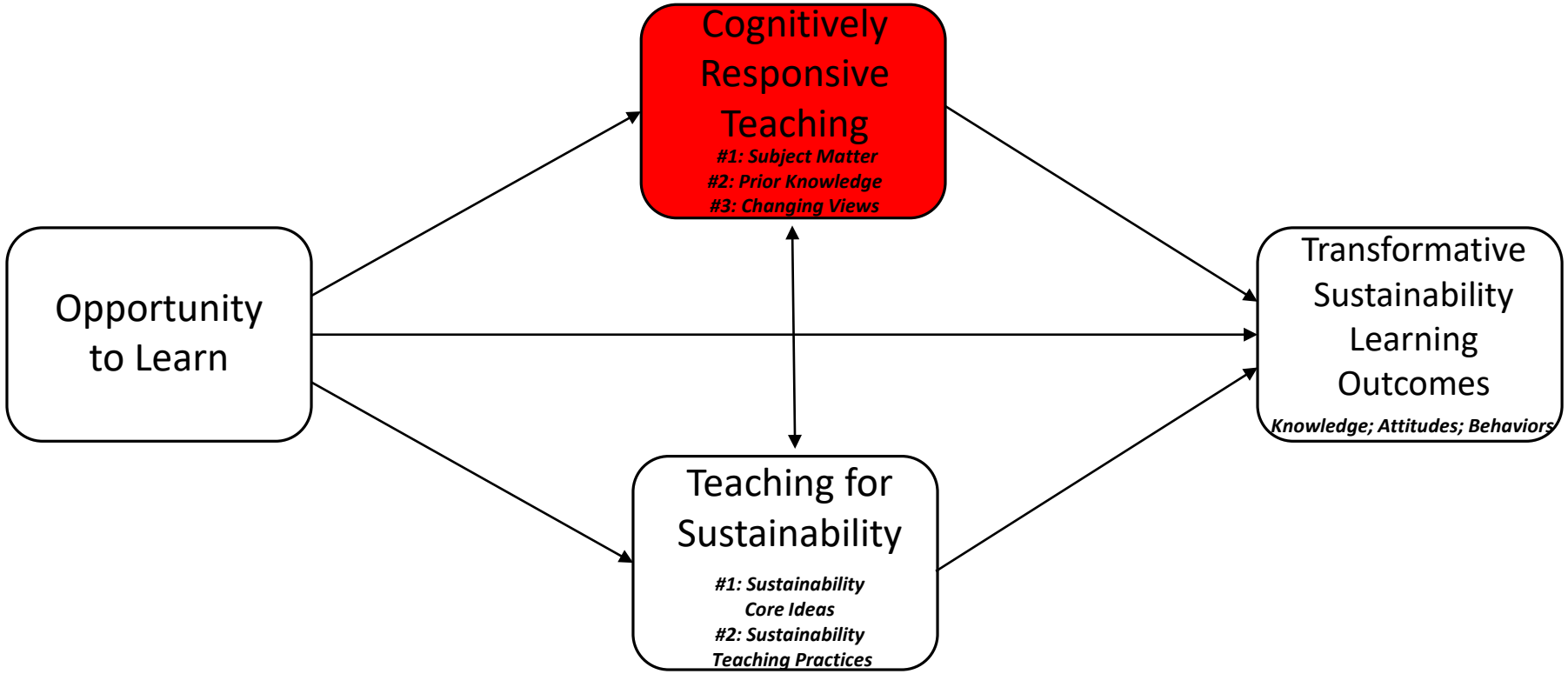

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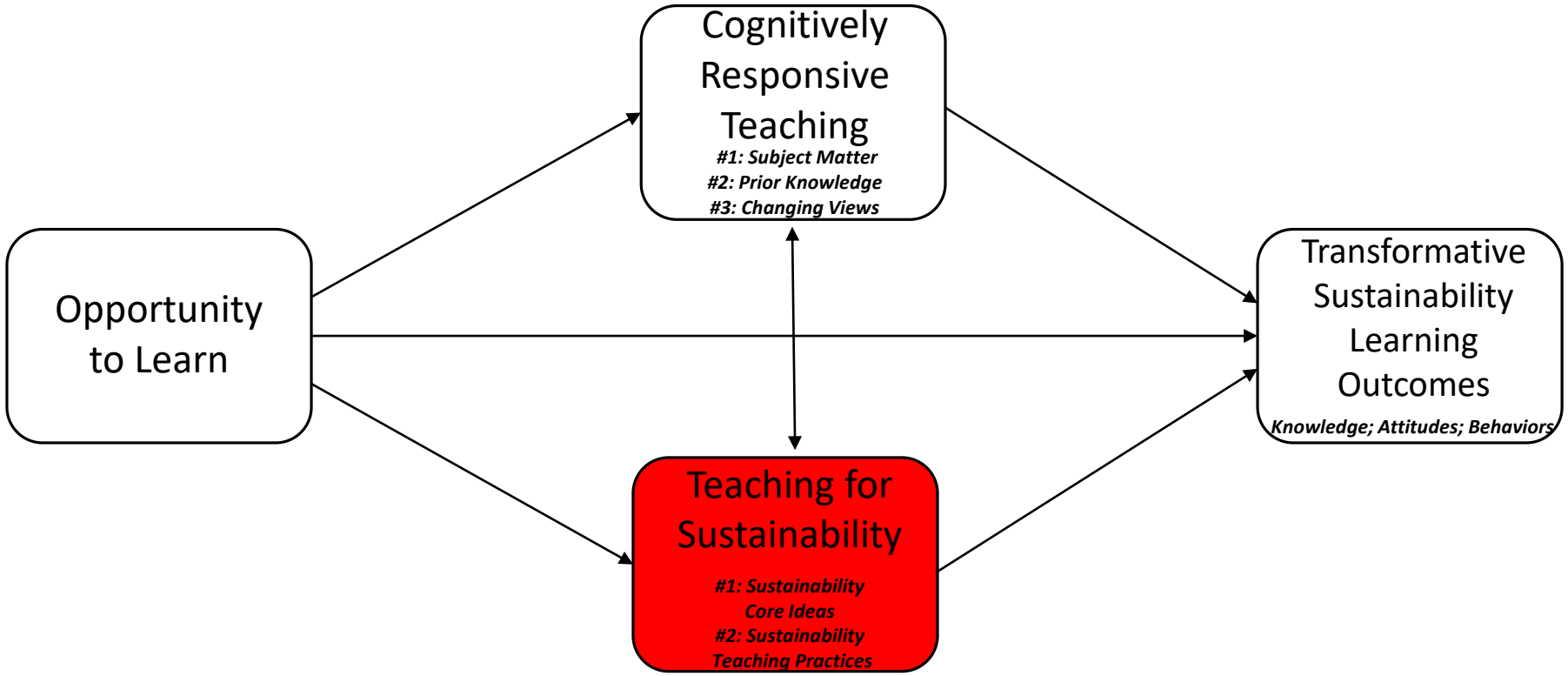

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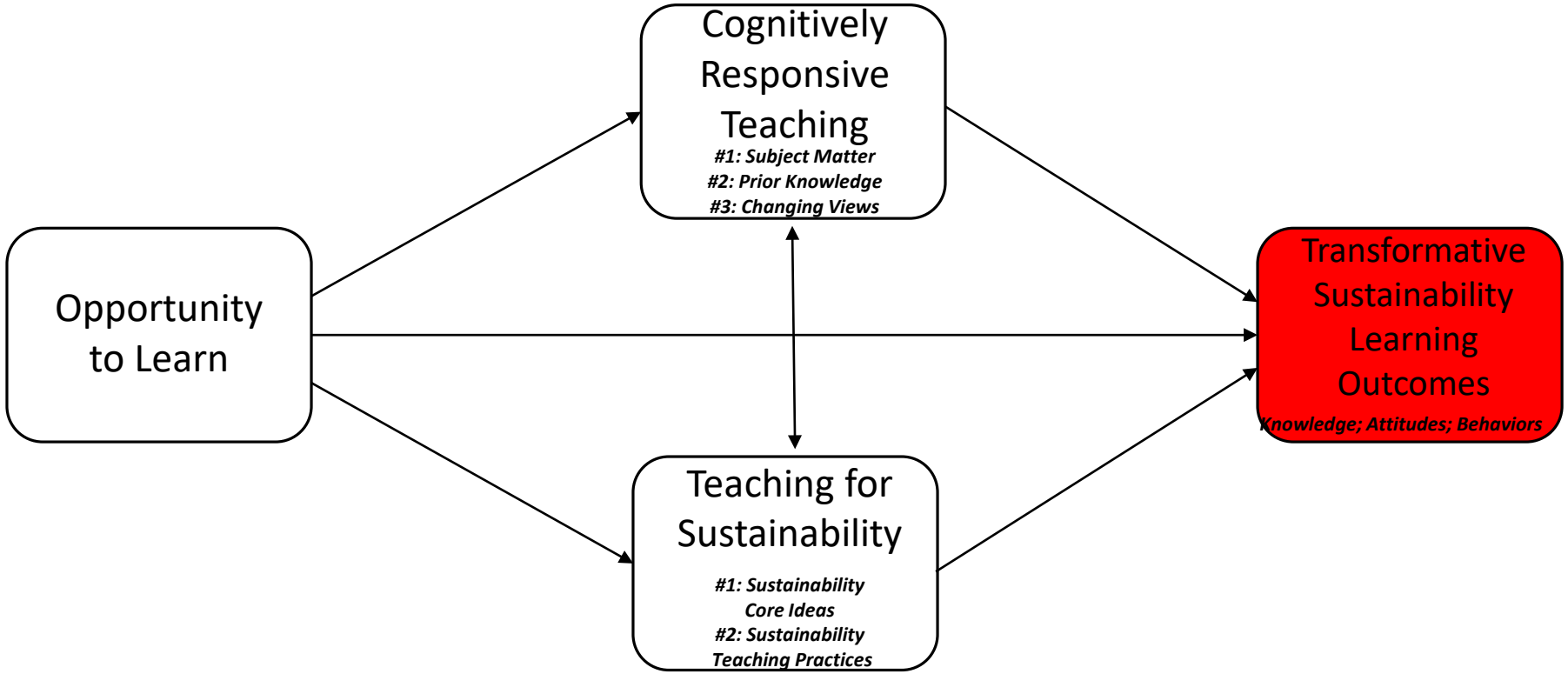


Data Collection

MICHIGAN STATE UNIVERSITY

5th Annual Sustainability Survey

qualtrics

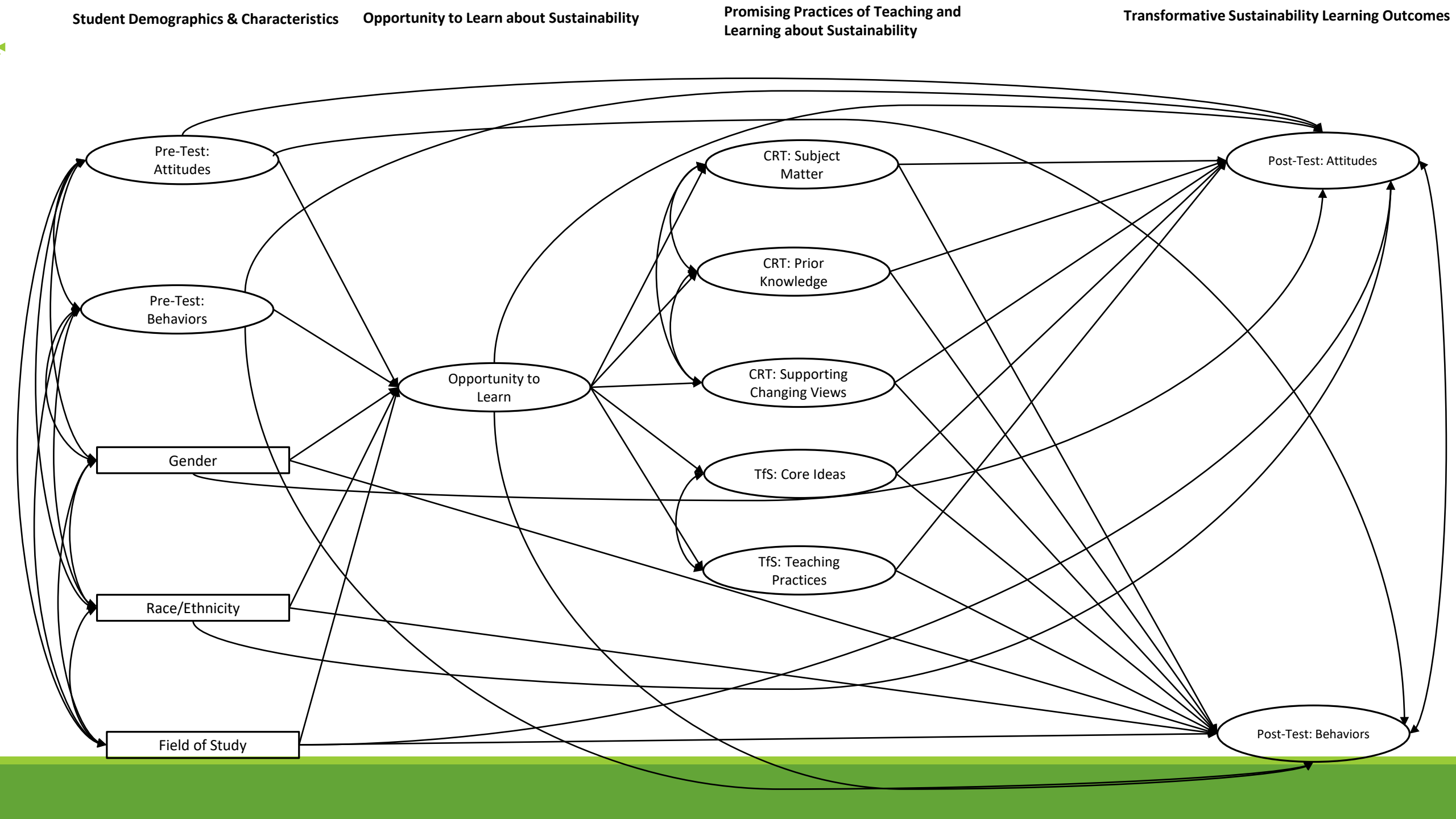
Data Collection

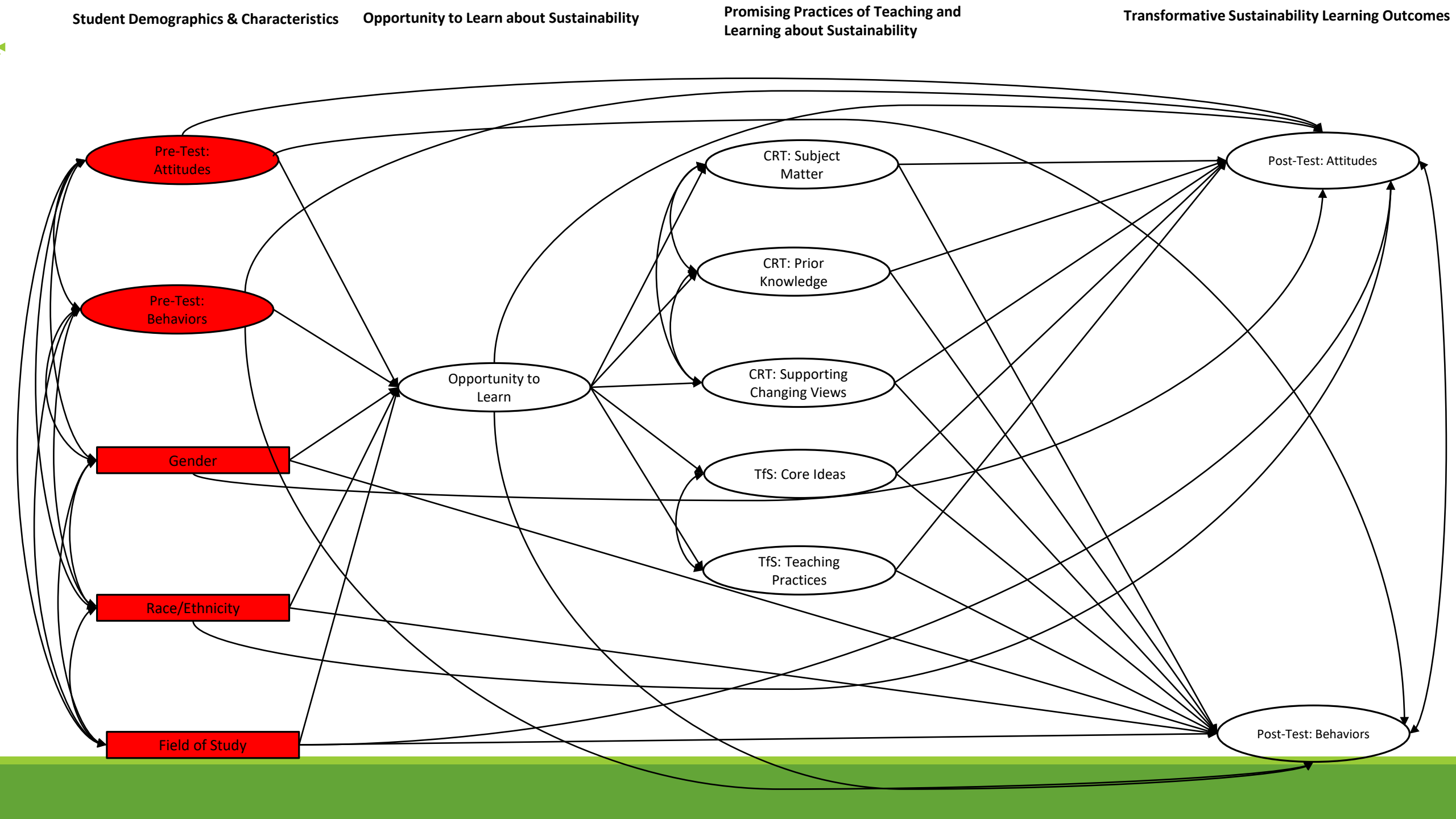
Final Sample: 748 student participants

- Pre-Test: 3,164
- Volunteered to be contacted for Post-Test: 1,366
- Post-Test: 748

Data Collection

- Attitudes
- Behaviors
- Teaching Practices


Student Demographics & Characteristics
Opportunity to Learn about Sustainability
Promising Practices of Teaching and Learning about Sustainability
Transformative Sustainability Learning Outcomes
Pre-Test: Attitudes
Pre-Test: Behaviors
Gender
Race/Ethnicity
Field of Study
Opportunity to Learn
CRT: Subject Matter
CRT: Prior Knowledge
CRT: Supporting Changing Views
TfS: Core Ideas
TfS: Teaching Practices
Post-Test: Attitudes
Post-Test: Behaviors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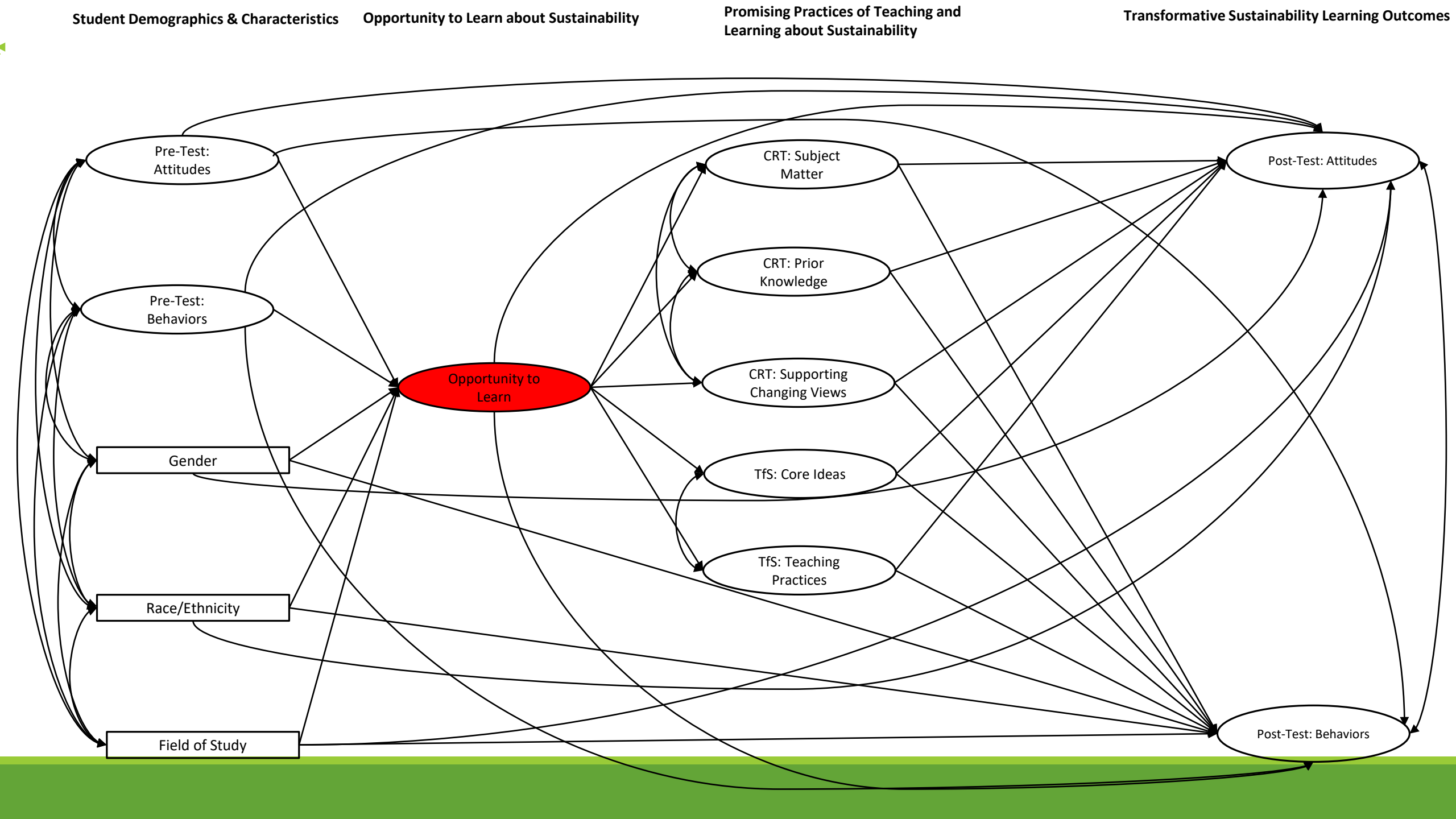
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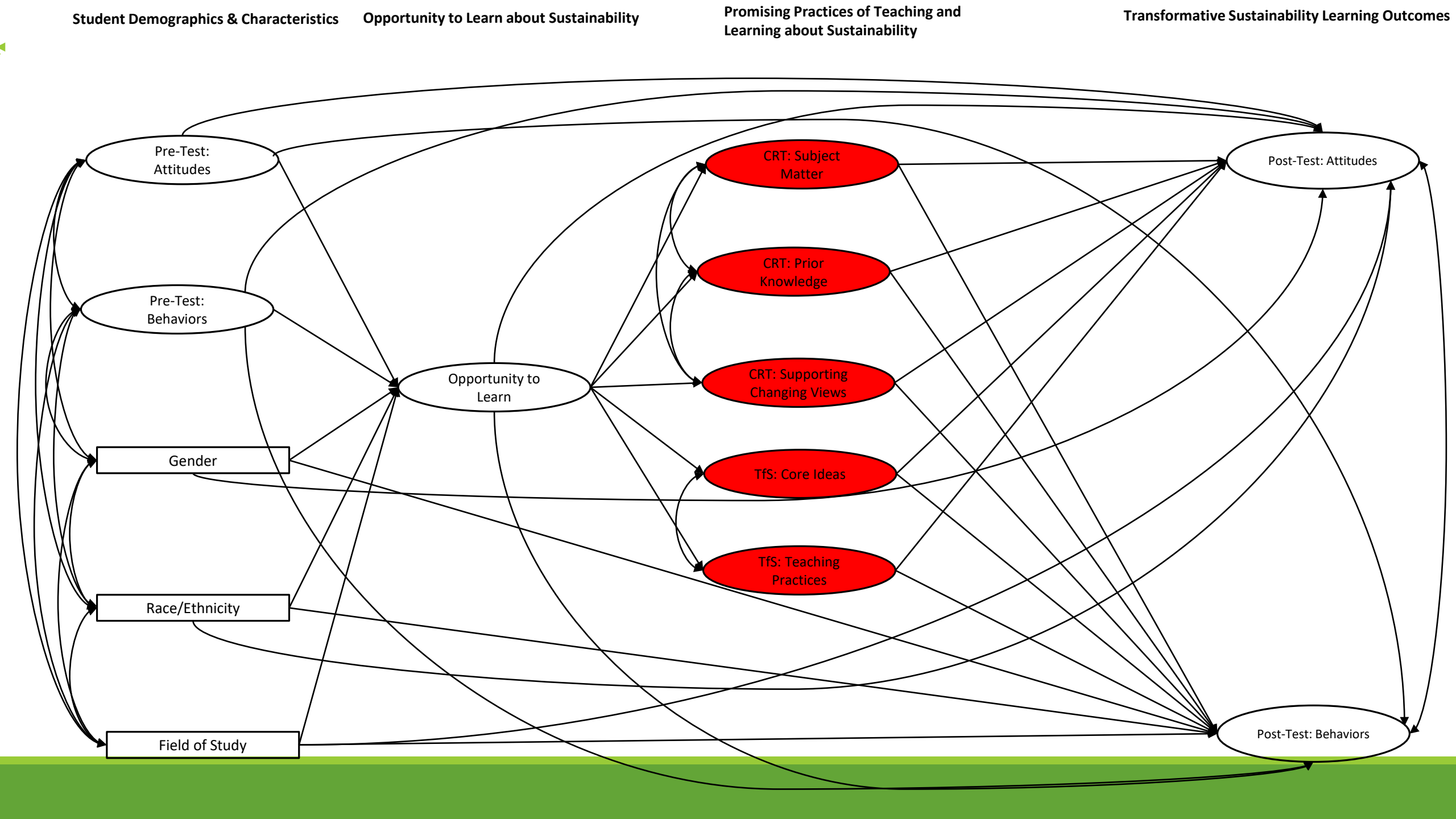
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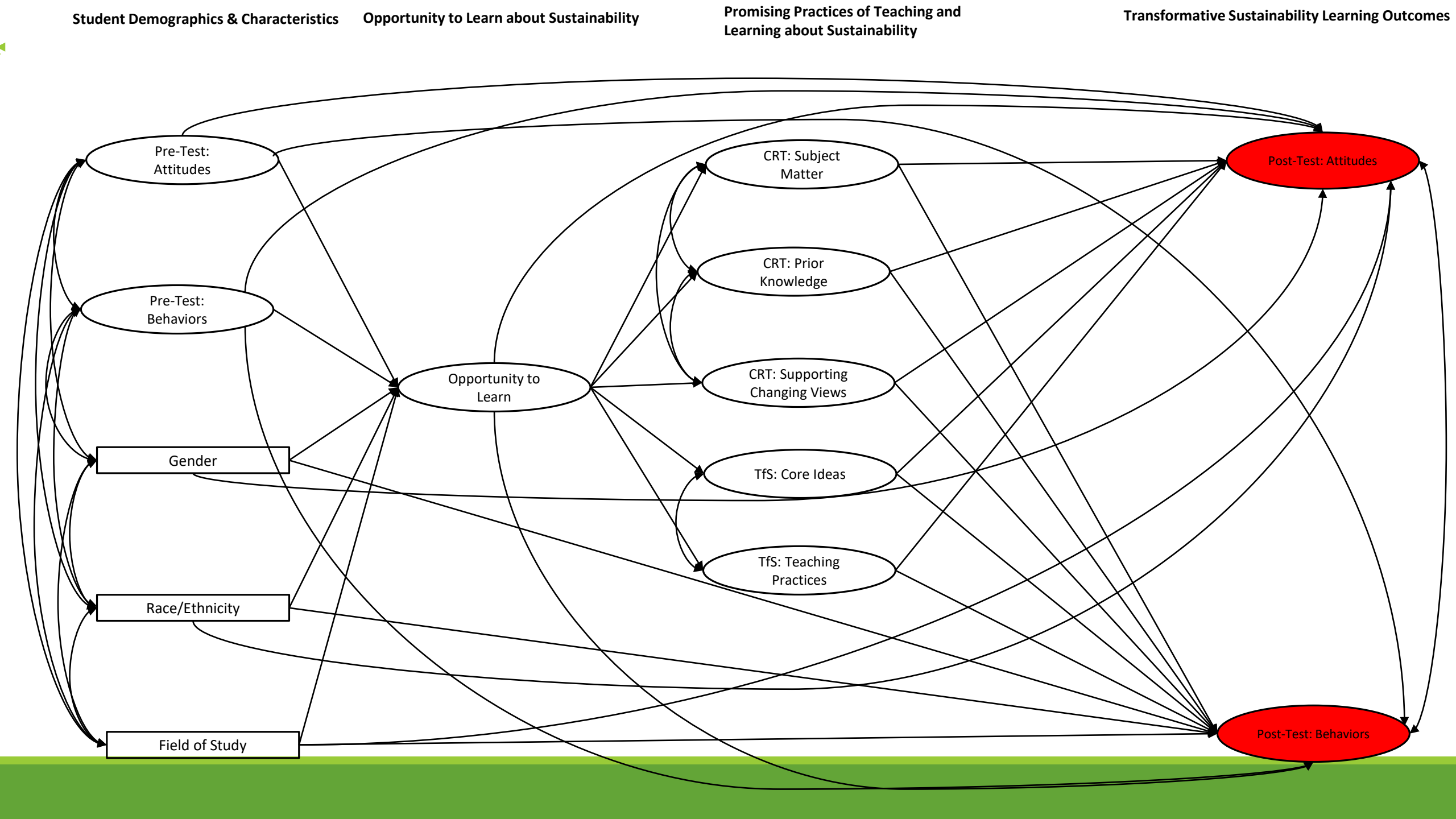
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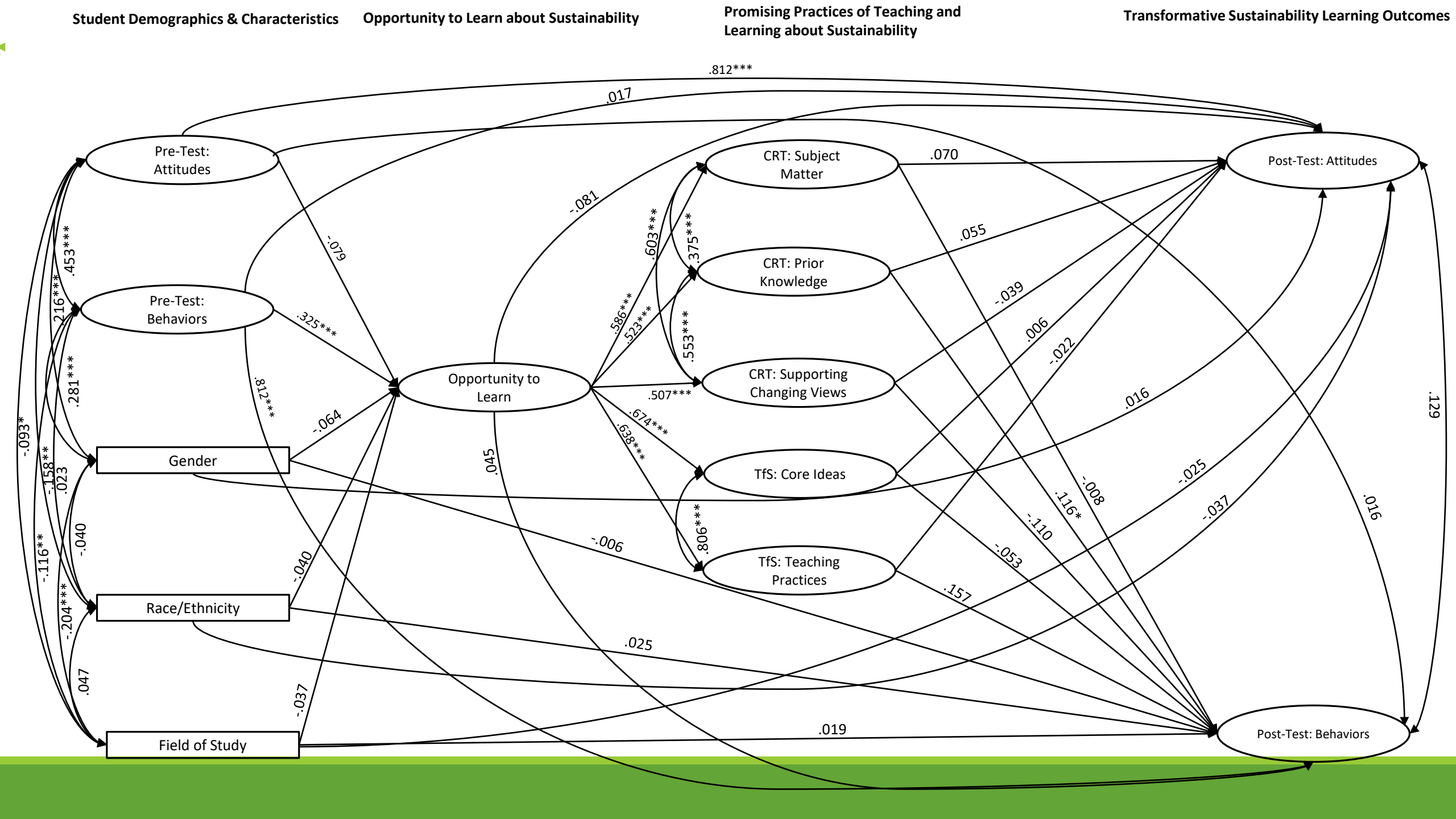
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.216***
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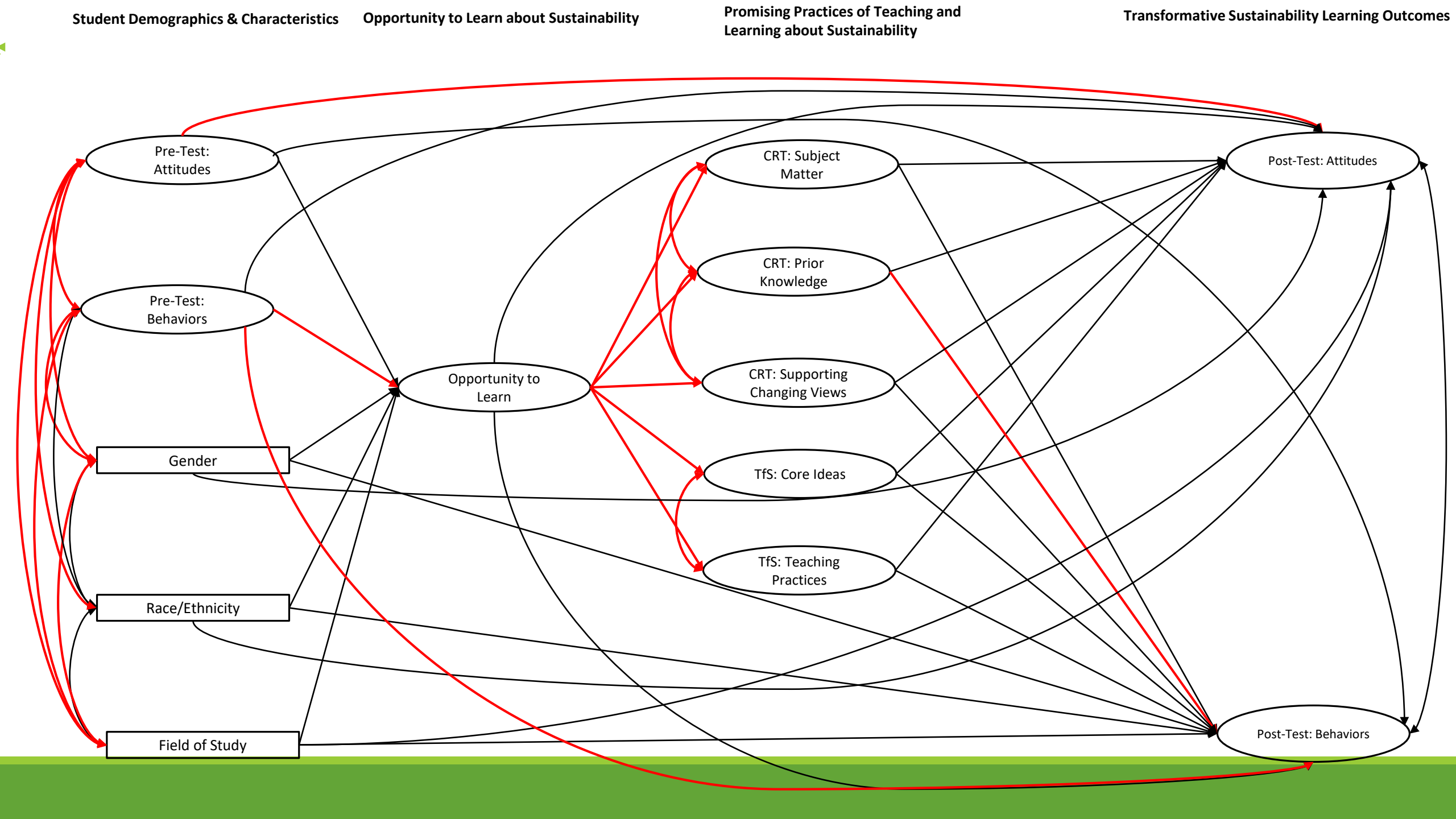
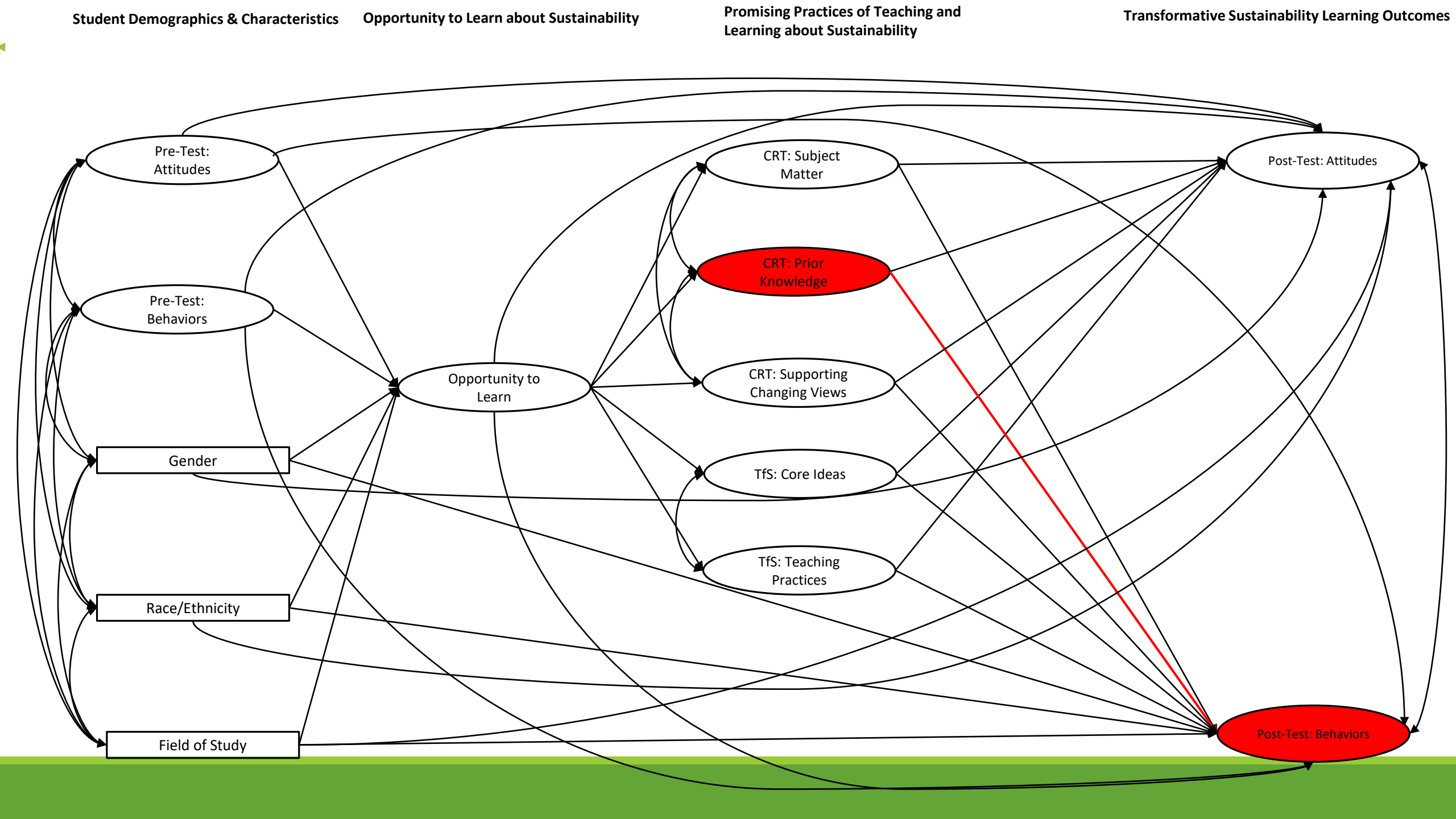

Student Demographics & Characteristics
Opportunity to Learn about Sustainability
Promising Practices of Teaching and Learning about Sustainability
Transformative Sustainability Learning Outcomes
Pre-Test: Attitudes
Pre-Test: Behaviors
Gender
Race/Ethnicity
Field of Study
Opportunity to Learn
CRT: Subject Matter
CRT: Prior Knowledge
CRT: Supporting Changing Views
TfS: Core Ideas
TfS: Teaching Practices
Post-Test: Attitudes
Post-Test: Behaviors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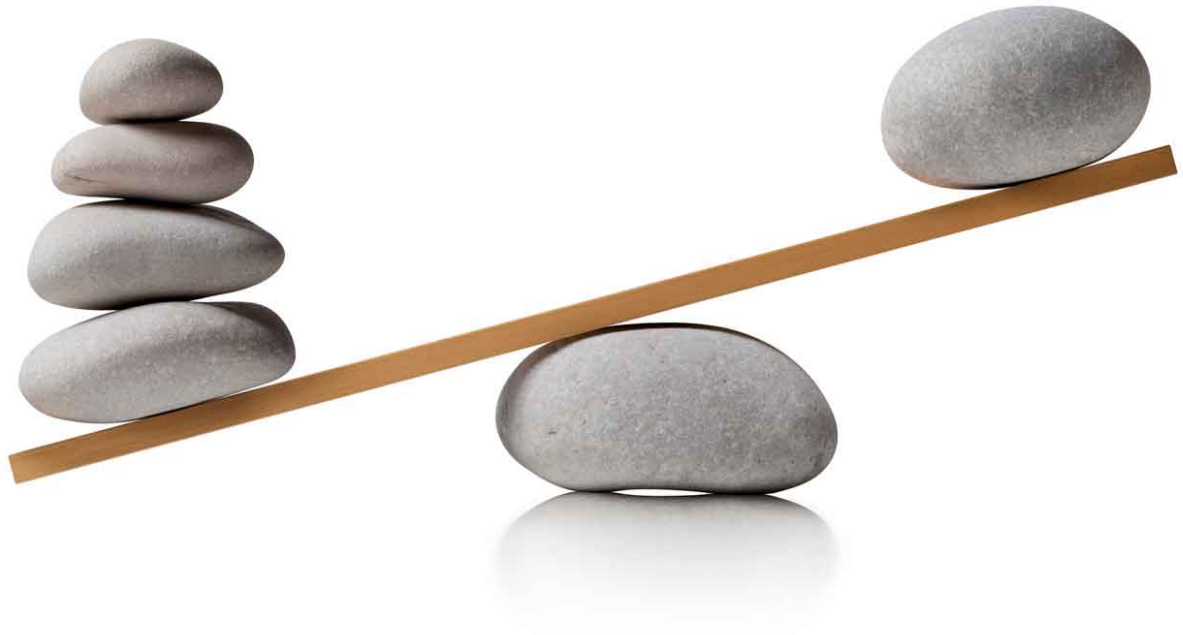
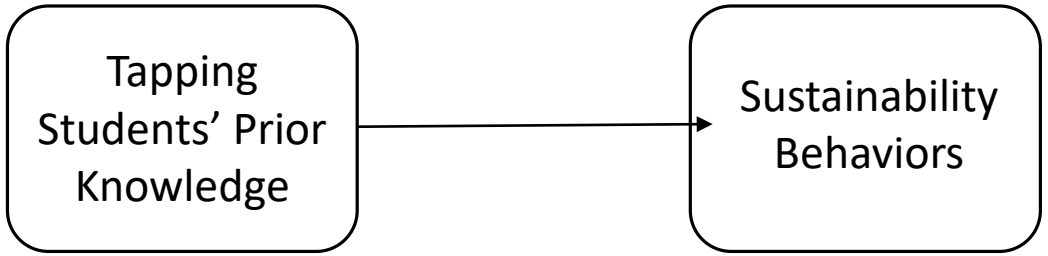
Post-Test: Behaviors

“Not all Teaching Practices are Equal”

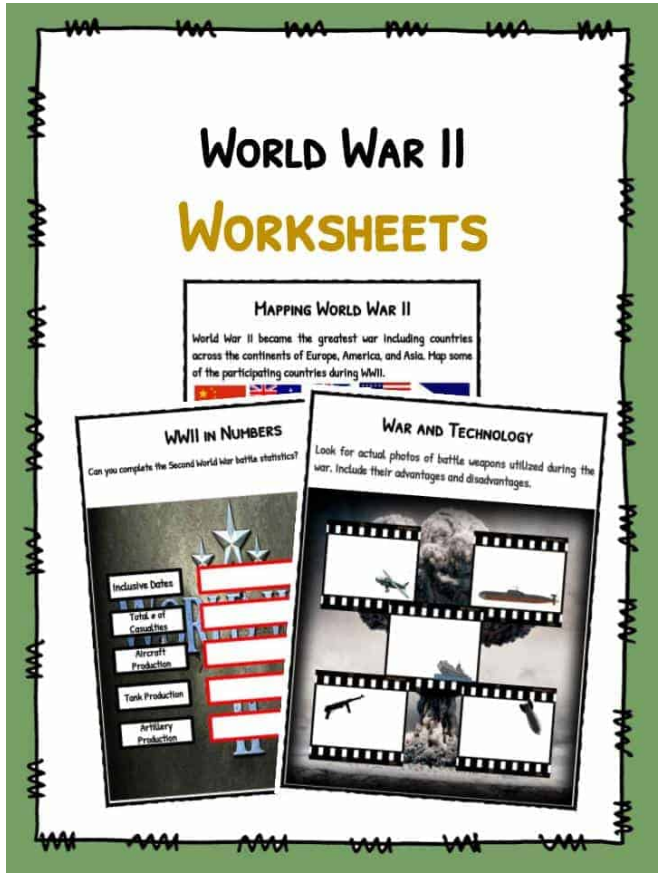


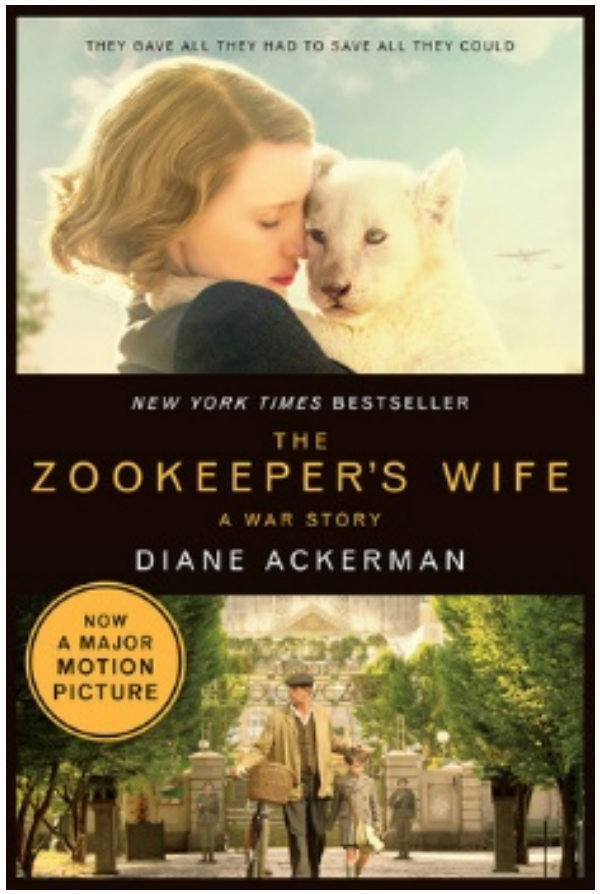
Prior Knowledge Influences Behaviors



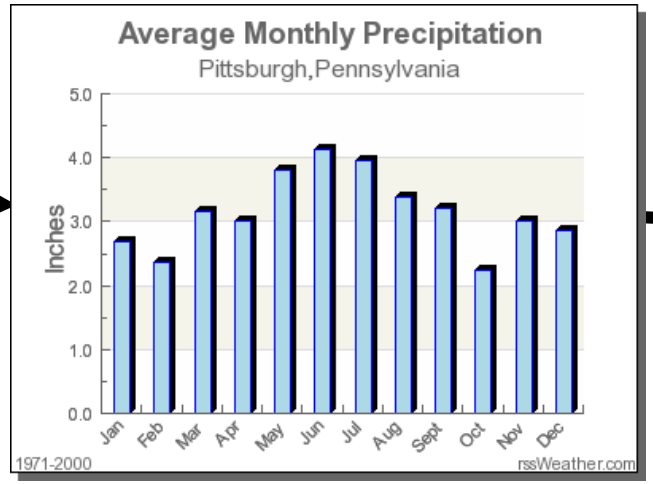
Prior Knowledge

Examples of Tapping Students' Prior Knowledge to Teach them about Sustainability



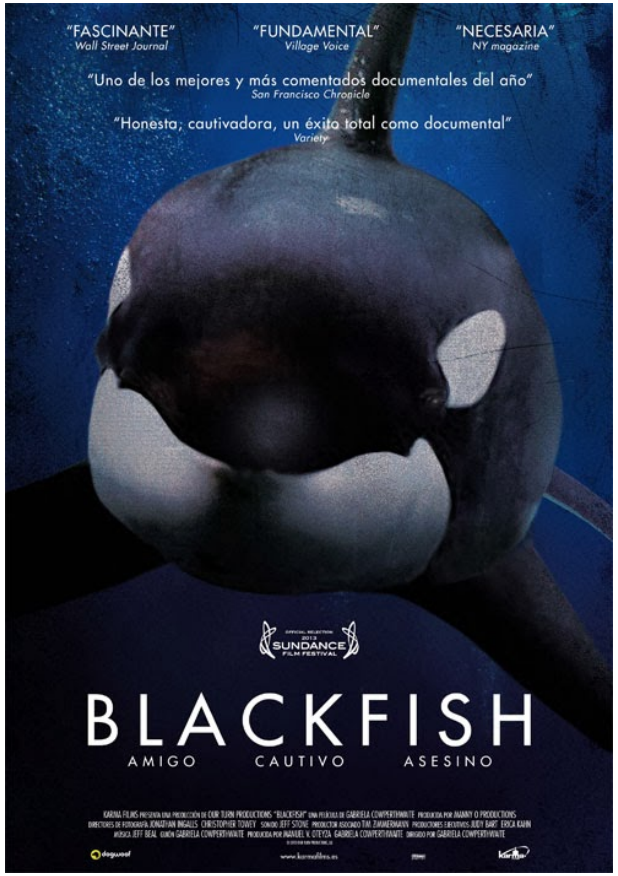


Examples of Tapping Students' Prior Knowledge to Teach them about Sustainability



Examples of Tapping Students' Prior Knowledge to Teach them about Sustainability

Examples of Tapping Students' Prior Knowledge to Teach them about Sustainability



Application to Practice!


SPREAD THE WORD

Linking Teaching Practices to Students' Pro-Sustainability Behaviors

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&

Adam Zwickle

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Campus Sustainability Survey Procedure

1. Prepare The Survey on Qualtrics

1.1 Account Information

- XXX
- XXX

1.2 Prepare the Survey

Copy the original survey and collaborate people who need access to the survey. Check all boxes in the collaboration options so everyone can make changes, activate/deactivate, and distribute the survey and view results.

1.3 Pretest (Optional)

- Once the survey is ready for a pretest, copy the survey and rename the copied version to pretest.
- To launch a pretest, go into the survey then click 'Launch Survey'. Click 'Activate your survey to collect responses' then copy the link provided.
- Email the pretest survey link to the pretest pool.

If you need to make some changes to the survey, make sure to make changes on both the pretest and the main survey.

1.4 Create Panels for Survey Distribution

- Prepare a .cvs file(s) for the panel. Make sure that the file contains two columns for email and first name. (You can include an additional column for last names but normally the information we get from the office of registrar only has emails and first names).

Email	First Name
aaaa@msu.edu	John
bbbb@msu.edu	Jane
cccc@msu.edu	Sam

If there are multiple mailing conditions, a separate .cvs file must be created for each condition.

- Go to Qualtrics, click 'Panels' tab.
- Click 'Create New Panel'.
- Name the panel to include the year of the survey. Include mailing condition if there is more than one condition. Click 'Create'.
- Click 'Import From a File' then select the prepared .cvs file.
- Verify Firleds: Make sure the field options are correct then click import.

[NOTE: It would give a pop-up warning if the file does not have a column for last names. This will not affect the distribution.]

- Repeat the steps to create more panels if there are multiple mailing conditions. A panel must be created for each different condition.

1.5 Set Up Survey Distribution Schedule

- In order to set up the email schedule, the survey must be activated.
- To activate the main survey, go into the survey then click 'Launch Survey'. Click 'Activate your survey to collect responses'.
- Click 'Distribute Survey' tab
    - To: click the drop down box → My Library → Select the panel → 'Select Entire Panel'

    - When: click the drop down box then click 'Custom…'. Schedule the date and time.
    - From Address: change the email address to 'skastudy@msu.edu'.
    - From Name: [Add the name you wish to appear as the sender here. Last year we used Ann's name]
    - Reply-To Email: skastudy@msu.edu
    - Subject: [Add email subject]
- Click 'Advance Options' at the bottom. Make sure 'Link Type' is set to 'Individual Link'. This would allow Qualtrics to keep a recode of people who have already completed the survey so they will not receive reminder emails. Survey Link Expires: [The preset is 60 days. Change the number if the survey will be opened for longer than 60 days]. Check the box for 'Do not mark responses as "In Progress" until survey is started.'
- Copy everything in the message box and paste them to the prepared message. Paste you prepared message to the message box.
- Click 'Save As…' and properly name the message (remember to include year and mail condition in the name). The message must be saved before it can be scheduled.
- Click 'Schedule Mailing'

1.6 Set Up Reminder Schedule

- Go to 'Distribute Survey' then click 'Email History'
- Click the 'Action' drop down box for the desired panel then click 'Send Reminder or Thank You'.
    - Type of email to send: Send Reminder
    - When: click the drop down box then click 'Custom…'. Schedule the date and time.
    - From Address: change the email address to 'skastudy@msu.edu'.
    - From Name: [Add the name you wish to appear as the sender here. Last year we used Ann's name]
    - Reply-To Email: skastudy@msu.edu
    - Subject: [Add email subject]
- Save as the message and give a proper name (e.g. '2015 Reminder 1 condition 1')
- Click 'Schedule Mailing'.

You can only schedule one reminder at a time so you must wait until the first reminder is sent out before you can set up the second reminder.

[NOTE: To view reminder schedule, go to 'Distribute Survey' → 'Email History' then click the alert icon under 'Recipients' column.]

IMPORTANT NOTE

- Once the survey is activated, you will need to unlock the survey to make any changes to the survey. However, some changes will NOT be applied to responses recorded prior to the change so try to avoid making changes to the survey after it's activated if possible.
- Any collaborators can close the survey from their own accounts. To close the survey, log in to your Qualtrics account then deselect the box in front of the survey. A pop-up window will ask you to type 'close' in order to close the survey.

2. Prepare and file IRB application

UPDATE: **MSU has converted to a new IRB-management system. The procedures for this system will need to be reviewed. The following instructions relate to the prior system.**

Before you can complete the IRB application, you must have the following information ready:

- PID for the PI and all additional investigators who will have access to the survey and data
- ALL investigators must have a valid IRB certification. Go to http://hrpp.msu.edu/required-training to get certified or renew you certification
- Consent form (see 'i000000 Consent Form [Example]' for an example). Your consent form must be the same as shown in the actual survey.
- Survey instruments ← you can go to your survey on Qualtrics then click 'Print Survey'

Consent form and survey can be adjusted after the IRB application is approved. If you make any adjustments, you MUST email the final version to the IRB again

2.1 IRB Procedure

- Go to IRB website: http://hrpp.msu.edu
- Log in as 'Researcher'
- Once logged in, go to 'New Initial Application'
- Have you ever received a 45 CFR 46.118 determination for this project? Select: 'No, Start Brand New Application'
- To continue, please click on the type of application you'd like to complete. Select: 'Exempt application'
- See 'IRB Application Example' file for an example on how to answer each question.
- Download and complete 'Exempt Appendix 1' (see 'i000000 Exempt Application Appendix' for an example).
    - Check 'EDUCATIONAL TESTS/SURVEY/INTERVIEW/OBSERVTION PUBLIC BEHAVIOR'
    - Answer (2) in section B
- Attach all additional documents
    - i000000 Exempt appendix 1
    - i000000 Consent form
    - i000000 Survey/instrument

IMPORTANT NOTE

a) For guideline on how to write a consent form, see consent form guideline and example
b) You can download the whole survey in PDF format from Qualtrics website. Go to the survey on Qualtrics, click 'Print Survey' then select 'Save as PDF…'.
c) ALL additional documents must have file names begin with the application number (e.g., i000000 Consent Form). You can find your application number by logging in to the IRB website then go to 'VIEW EXISTING APPLICATIONS**'.** The IRB application number is the number after 'APP#'**

- Click submit application
- **Print out the signature page, have the PI sign and submit (or fax) to the IRB**

i000000 IRB Application [Example]

Instruction or comments are highlighted in yellow. All answers (especially related to project description) can be adjusted based on the survey.

IRB#: xxx-xxxx
ID# ixxxxx

1a.	**Responsible Project Investigator: [Insert PI information]** Name: ID#: Department: College: Academic Rank: Mailing Address: Phone: Fax: Email:
1b.	**Secondary Investigator: [Insert secondary PI information, if there is one]** Name: ID#: Department: College: Academic Rank: Mailing Address: Phone: Fax: Email:
1c.	**Additional Investigators: [Insert Z-PID or A-PID for additional investigators. List ALL professors and students who will have access to the survey and data. Every investigator must have a valid IRB training.]**
1d.	**Other Personnel: [List any additional personnel who will be involved in data collection procedure.] ←Most likely blank for this project since we only collect data from online survey.**
1e.	**Study Coordinator: [Insert contact information for a coordinator, generally the same person listed in the consent form]** Name: ID#: Department: College: Academic Rank: Mailing Address: Phone: Fax: Email:

2.	**Title of Project:** Sustainability Knowledge Assessment Make adjustment if necessary	
3.	**Have you ever received preliminary approval or a 45 CFR 46.118 designation for this project?**	NO
4a.	**Please describe why your project is minimal risk. For example, "My research includes an anonymous survey about...explain what your survey is about" or "my subjects are identifiable, but the questions are not in any way harmful."** This is an anonymous online survey about environmental issues on campus. Students will be contacted via emails from the office of registrar and their identities will not be collected.	
4b.	**Indicate Exempt sub-category(ies). NOTE: Appendix 1 (exempt categories) must be submitted with the Exempt Application. An application cannot be reviewed without Appendix 1.** ☐ 45 CFR 46.101(b)(1) ☑ 45 CFR 46.101(b)(2) ☐ 45 CFR 46.101(b)(3) ☐ 45 CFR 46.101(b)(4) ☐ 45 CFR 46.101(b)(5) ☐ 45 CFR 46.101(b)(6) ☐ Demonstration Project Category 7	
5.	**Is this project being conducted to fulfill the requirements of an education/training program?**	Project Is Not Primarily An Education/Training Activity
6a.	**Funding:** **(1) Select appropriate funding source(s). Multiple funding sources may be selected. If a funding source is selected, list the name(s) of the funding source(s) and the CGA number.**	YES

	Funding Source Type	If funding source is selected, list the name(s) of the funding source	OSP/CGA Number
NO	**U.S. Federal Government (e.g. Department, Agency)**		
NO	**U.S. State Government (e.g. Department, Agency)**		
NO	**Foreign Government**		
NO	**Industry Sponsored**		
NO	**Foundation or Non-Profit**		

	YES | **Internal Funds (e.g. MSU department)** | MSU Office of Sustainability | **(2) Are any of the funding sources pending?** NO **(i) Describe pending funding source(s):** **(ii) If the project is not funded will you do the research?**	
6b.	**The protection of human subjects often requires resources be dedicated for things such as the consent process (space, personnel), the performance of the research (trained personnel interacting with subjects, time, access to subjects, access to facilities) care of subject issues or injuries (counseling, medical care), confidentiality of data (space, equipment) and other monetary and non-monetary resources. Describe the resources that are available for this project for the protection of human subjects.** All personnel are IRB certified. The PI has an office and computer dedicated to research. The study is conducted online and consent is offered to the subjects on their own computers in their own personal space.	
7a.	**List all sites where this research will be conducted.** Michigan State University	
7b.	**Do any of these sites have their own IRB?**	YES
7c.	**Have you or will you submit this to any non-MSU IRBs?**	NO
8a.	**Describe the purpose, hypotheses and objectives of the research project.** The study examines students' knowledge, attitudes and behaviors about environmental issues on campus and how message containing social norm information influence students' attitudes and behavioral intentions to engage in environmental behaviors. The study also examines the role of science learning in sustainable behaviors. Participants will answer questions about basic science and environmental knowledge, and attitudes toward environmental issues. Then participants will receive a message about what MSU students do when it comes to energy use. The study has three conditions: MSU wants more students to lower their energy consumption; most students at MSU lower their energy consumption and a control condition with no message. Participants will read the message then answer questions about their attitudes toward and behavioral intentions to engage in environmental behaviors. Lastly, participants will answers questions about their psychological well-being, and demographic information. Make adjustments if necessary	
8b.	**Describe all procedures, measures and analyses you will use in collecting data from human subjects. This pertains to both prospective and retrospective (i.e. pre-existing) research procedures.** Students will receive an invitation to participate in an online survey and a link to Qualtrics survey via emails from the office of registrar. Students will begin by indicating their consent to participate before continuing to the survey. Participants will answer questions about sustainability and environmental knowledge, science literacy, and their living arrangement (on/off campus). Participants will receive a randomly assigned message about what other MSU students do when it come to energy use. The participants will answer questions about their environmental behaviors, well-beings, environmental values, environmental information search behaviors, science and math attitude, and demographics. After completing all questions, participants will receive a debrief which clearly states that they may have received some information about other MSU students' behaviors which have not yet been supported by any research. Participant will indicate that they understand the debrief before being directed to MSU sustainability website after completing the survey. Make adjustments if necessary. List all measures included in the survey.	
8c.	**Are any procedures done for non-research purposes?**	NO
8d.	**Summarize the project in one paragraph in completely lay terms.** The project aims to understand students' attitudes and behaviors toward environmental issues on campus,	

	and how information about what other students do to conserve energy influence students' environmental attitude and behaviors. The study also examines the role of science learning in sustainable behaviors. Make adjustments if necessary	
8e.	**Are you obtaining consent (telling subjects ahead of time that they are in a research study)?**	YES
9a.	**Describe your subject population (e.g., high school athletes, small business owners, children with ADHD).** MSU students	
9b.	**Age range of subjects**	18 to no maximum
9c.	**The study populations includes:** **Purposeful Inclusion** ☐ Children ☐ Women of Childbearing Age ☑ College Students ☐ Minorities ☐ Psychiatric patients ☐ Wards of State ☐ Pregnant Women ☐ Institutionalized Persons ☐ Low Income Persons ☐ Prisoners ☐ Persons with diminished capacity ☐ None of These	
9d.	**Total expected number of subjects (including controls) for the entire project period**	2000 ← Feel free to adjust the number
9e(1).	**will the subjects be identified and recruited? Include who will make initial contact with the subjects.** Students will be recruited via emails from the office of registrar and will receive a link to the online survey in the email. Make adjustments if the recruitment method is changed	
9e(2).	**Will subjects be recruited using a student research pool?**	NO
9f.	**Will subjects be compensated?**	NO
9g.	**Will the subjects incur additional financial costs as a result of their participation in this study?**	NO
9h.	**Are you associated with the subjects (e.g., your students, employees, colleagues, patients)?**	NO
9i.	**Will this research be conducted with subjects in another country?**	NO
9j.	**Will this research be conducted with subjects in the U.S. from an ethnic group of sub-group or other non-mainstream minorities (including non-English**	NO

	speakers)?	
10a.	**Describe and assess any potential risks (physical, psychological, social, legal, economic) and assess the likelihood and seriousness of such risks.** There are no known risks for participation. This is an anonymous online survey about attitudes and behaviors toward environmental issues.	
10b.	**Describe the procedures for protecting against or minimizing potential risks and an assessment of their likely effectiveness.** The survey is anonymous, consent form will not be signed since the data collection will be online. Participants' identities will not be collected.	
11a.	**How will subjects' privacy be protected?** Individuals will be asked to complete an online informed consent form prior to completing the survey. No personal identification will be collected. No individuals who are not associated with the study will be involved in the process of the study. Data will be collected from subjects at their own discretion, in their own chosen setting on their own computers or computers of their choosing.	
11b.	**Explain how you will ensure the confidentiality and/or anonymity of the raw research data (e.g. completed survey, interview notes, signed consent). Include in your description where the data will be stored (e.g., locked filing cabinet), who will have access to the data, and how long the data will be stored. If this is question is not applicable, please explain. Please note per the universities best practices the responsible project investigator must maintain the data for a minimum of three years after closing the project.** All data will be collected and stored electronically. There will be no hard copy raw data of the study.	
11c.	**Explain how you will ensure the confidentiality and/or anonymity of the electronic research data (e.g. data entered into database, spreadsheet, stored on a computer, data collected via the web). Include in your description where the data will be stored (e.g. password protected computer), who will have access to the data, and how long the data will be stored. If this is question is not applicable, please explain. Include electronic security measures (e.g., password protected files, data encryption, and other protective measures for computer and/or network storage devices such as jump drives and CDs).** All electronic research data will be stored on in a password protected file. Only the investigators will have access to the data and there will be no identifications of the participants. The data will remain stored for three years.	
12.	**Does this project involve protected health information as defined by HIPAA?**	NO
13a.	**Does any person responsible for the design, conduct, or reporting of findings of this protocol have a Significant Financial Interest (as defined for the MSU Faculty Conflict of Interest Policy) or other opportunity for tangible personal benefit related to the conduct of the research that might compromise, or reasonably appear to compromise, the independence of judgment with which their responsibilities would be completed under this research protocol? A reportable financial interest includes, but is not limited to, a financial interest in the sponsor, product, or service being tested, or in a competitor of the sponsor or product or service being tested.**	NO
13b.	**Has any financial arrangement, including compensation, ownership interest, stock options, or other ownership interest, (e.g., compensation that is: explicitly greater for a favorable result; in the form of an equity interest in the sponsor of a covered study; or in the form of compensation tied to sales of the product, such as a royalty interest) been established whereby the value of compensation or ownership interest to investigators conducting the study**	NO

	could be influenced by the outcome of the study?	
13c.	**Is this a clinical study where the results may be used to support marketing applications for new human drugs and biological products and marketing applications and reclassification petitions for medical devices to the FDA, as required by law?**	NO
13d.	**Have you or will you submit an FDA form 3454 or 3455 (Conflict of Interest)?**	NO
14a.	**When would you prefer to begin this project?**	xx/xx/20xx
14b.	**Estimated end date of project:**	xx/xx/20xx

i000000 Exempt Application Appendix [Example]

Principal Investigator:	***ENTER PI NAME***
Project Title:	***Sustainability Knowledge Assessment***

INSTRUCTIONS: ***Based on the checkbox(es) you select in Section A, complete the corresponding question number listed in Section B. You ONLY need to complete the number in Section B that corresponds to the checkbox that you selected in Section A. For example, if your research may meet exempt category 4 (Existing Data, Documents, Specimens), complete question 4 (Existing Data, Documents, Specimens) in Section B.***

Section A. Exemption Categories

A. Select the appropriate exemption category(ies) for your research. ***For help, review regulatory text included.***

☐ ***If selected, complete (1) in Section B***	**EDUCATIONAL PRACTICES.** *Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods. 45 CFR 46.101(b)(1)*
☒ ***If selected, complete (2) in Section B***	**EDUCATIONAL TESTS/SURVEY/INTERVIEW/OBSERVTION PUBLIC BEHAVIOR.** *Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.[1] 45 CFR 46.101(b)(2)*
☐ ***If selected, complete (3) in Section B***	**PUBLIC OFFICIALS/FEDERAL STATUTE.** *Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if: (i) the human subjects are elected or appointed public officials or candidates for public office; or (ii) Federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter. 45 CFR 46.101(b)(3)*
☐ ***If selected, complete (4) in Section B***	**EXISTING DATA/DOCUMENTS/SPECIMENS.** *Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. 45 CFR 46.101(b)(4)*
☐ ***If selected, complete (5) in Section B***	**FEDERAL DEMONSTRATION PROJECTS.** *Research and demonstration projects which are conducted by or subject to the approval of Department or Agency heads, and which are designed to study, evaluate, or otherwise examine: (i) Public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs. 45 CFR 46.101(b)(5)*
☐ ***If selected, complete (6) in Section B***	**TASTE TEST/ FOOD EVALUATION.** *Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture. 45 CFR 46.101(b)(6)*
☐ ***If selected, complete (7) in Section B***	**IDENTIFIABLE DATA SOURCES.** *Research involving existing sets of identifiable data and pose no more than minimal risk to subjects and must not contain any of the following: federal funding or federal training grants, sponsor or other contractual restrictions, previous restrictions on data use, FDA regulated components, receipt of an NIH certificate of confidentiality to protect identifiable research data, subject interactions or interventions. MSU Demonstration Project Category 7*

[1] Research Involving Children: Exemptions at 45 CFR 46.101(b)(1) and (b)(3) through (b)(6) are applicable to this subpart [subpart D]. The exemption at §46.101(b)(2) regarding educational tests is also applicable to this subpart. However, the exemption at §46.101(b)(2) for research involving survey or interview procedures or observations of public behavior does not apply to research covered by this subpart, except for research involving observation of public behavior when the investigator(s) do not participate in the activities being observed. 45 CFR 46.401(b)

[2] OHRP Guidance for 45 CFR 46.101(b)(5): 1) The program under study must deliver a public benefit (e.g., financial or medical benefits as provided under the Social Security Act) or service (e.g., social, supportive, or nutrition services as provided under the Older Americans Act). 2) The research or demonstration project must be conducted pursuant to specific federal statutory authority. 3) There must be no statutory requirement that the project be reviewed by an Institutional Review Board (IRB). 4) The project must not involve significant physical invasions or intrusions upon the privacy of participants. 5) The exemption should have authorization or concurrence by the funding agency.

Section B. Exemption Criteria

For each exemption category box selected in Section A, complete the corresponding QUESTION(S) below.

(1) EDUCATIONAL PRACTICES

A. Describe how the research will be conducted in established or commonly accepted educational settings.

ANSWER QUESTION HERE

B. Describe how the research involves normal educational practices.

ANSWER QUESTION HERE

NOTE: INSTRUMENTS MUST BE SUBMITTED

(2) EDUCATIONAL TESTS/SURVEY/INTERVIEW/OBSERVTION PUBLIC BEHAVIOR

A. Research involves (**check all that apply**):

- ☒ Survey procedures * *(children 17 or younger cannot be included)*
- ☐ Interview procedures* *(children 17 or younger cannot be included)*
- ☐ Observation of public behavior where investigator will participate in activities being observed* *(children cannot be included)*
- ☐ Observation of public behavior where investigator will not participate in activities being observed
- ☐ Educational tests
- ☐ Other, please describe: ***ANSWER QUESTION HERE***

B. **Describe** whether information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects. *Individually identifiable means that the identity of the subject is or may readily be ascertained by the investigator or associated with the information.* ***NO INDIFICATION INFORMATION WILL BE COLLECTED. THE DATA WILL NOT BE IDENTIFIABLE.***

If information is identifiable, answer C.

C. Describe whether any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation? ***ANSWER QUESTION HERE***

NOTE: INSTRUMENTS MUST BE SUBMITTED

(3) PUBLIC OFFICIALS/FEDERAL STATUTE

A. Research involves (***CHECK ALL THAT APPLY***):
Use of educational tests (cognitive, diagnostic, aptitude, achievement),
Survey procedures
Interview procedures
Observation of public behavior
Other, please describe: ***ANSWER QUESTION HERE***
that is not exempt under 45 CFR 46.101 (b)(2)

B. Research involves (***CHECK ALL THAT APPLY***):
Subjects are elected or appointed public officials or candidates for public office
Federal statute(s) require(s) without exception that confidentiality of personally identifiable information will be maintained throughout research and thereafter

(4) EXISTING DATA/DOCUMENTS/SPECIMENS

A. Research involves collection or study of (***CHECK ALL THAT APPLY***):
Existing data
Existing documents
Existing records
Existing pathological specimens
Existing diagnostic specimens
Existing means existing as of today (when this application is submitted)

B. **Date ranges** of existing sources: ***ANSWER QUESTION HERE*** to ***ANSWER QUESTION HERE***

C. **Explain** whether the sources are publicly available or how the information will be recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. *Individually identifiable means that the identity of the subject is or may readily be ascertained by the investigator or associated with the information.* ***ANSWER QUESTION HERE***

NOTE: LIST OF VARIABLES MUST BE SUBMITTED

(5) FEDERAL DEMONSTRATION PROJECTS

A. **Explain** why the activity is a research and demonstration project which is conducted by or subject to the approval of Federal Department or Agency heads. ***ANSWER QUESTION HERE***

B. Research involves projects that are designed to study, evaluate, or otherwise examine (***CHECK ALL THAT APPLY***):
Public benefit or service programs
Procedures for obtaining benefits or services under those programs
Possible changes in or alternatives to those programs or procedures
Possible changes in methods or levels of payment for benefits or services under those programs

(6) TASTE TEST/ FOOD EVALUATION

A. **Describe** how the activity is a taste and food quality evaluation and consumer acceptance studies. ***ANSWER QUESTION HERE***

B. Research involves (***CHECK ALL THAT APPLY***):
Wholesome foods without additives are consumed
A food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by FDA or approved by EPA or Food Safety and Inspection Service of USDA.
NOTE: INSTRUMENTS MUST BE SUBMITTED

(7) IDENTIFIABLE DATA SOURCES

A. **Describe** how the data sets are existing as of today (when this application is being submitted). ***ANSWER QUESTION HERE***
B. **Date ranges** of existing sources: ***ANSWER QUESTION HERE*** to ***ANSWER QUESTION HERE***
C. **Explain** whether any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects standing, employability, or reputation. ***ANSWER QUESTION HERE***
D. Confirm (***BY CHECKING THE BOX***) that the research does not involve:
Federal funding or federal training grants
Sponsor or other contractual restrictions. NOTE – review of the contract is necessary.
Previous restrictions on data use
FDA regulated components
Receipt of an NIH certificate of confidentiality to protect identifiable research data
Subject interactions or interventions.

Consent Form Guideline

What to Include

1. A short description of what the survey is about
2. Indicate that their participation is voluntary. They may choose not to answer any questions or discontinue their participation at any time.
3. Minimum age to participate: Make sure to explicitly indicate that they MUST be 18 or older to participate.
4. Potential risk: Must state that the survey is not expected to cause any risk greater than those encountered in everyday life
5. Contact information of the PI: Make sure that the name and contact information in the consent form is the same as in the IRB application
6. Contact information of the IRB
7. Indication of their consent: Must include a statement of how they indicate their consent e.g. by clicking the next button, you indicate that you voluntarily agree to participate.

i000000 Consent Form [Example]
i000000 Consent Form: Sustainability Knowledge Assessment

We need your help understanding students' views about environmental issues on campus. We want to hear from you whether you consider have strong feelings about environmental issues or not. This is an annual survey and you were randomly selected from MSU's student body so we need to hear from you. Thank you for your help.

As university based research, we are obligated to inform you of the following:

1. Your participation in this study is voluntary. You must be 18 years old or older in order to participate. You may choose not to participate at all, or you may refuse to answer certain questions or discontinue your participation at any time without consequences.

2. Your participation in this study is not expected to cause you any risk greater than those encountered in everyday life. Your answers will not harm you in any way. If you feel any discomfort in answering any question, you can withdraw from the study without any consequences.

3. If you have any questions about your rights as a participant, please contact Dr. John Besley by email at jbesley@msu.edu. Further, if you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 5173552180, Fax 5174324503, or email irb@msu.edu or regular mail at 408 W. Circle, 207 Olds Hall, MSU, East Lansing, MI 48824.

By clicking next at the bottom of this screen, you indicate that you have voluntarily agreed to participate in this study.

3. Contact Office of Registrar to Obtain Student Emails

3.1 Office of Registrar

- Contact Person: Traci Gulick - Associate Registrar for Academic Records (Gulickt2@msu.edu)
- She waived their policy to give us email addresses in an email on 4/9/2015, most likely based on the fact that I said Qualtrics will allow us to not repeatedly email those who have taken the survey or opted out.
  https://reg.msu.edu/StuInfoGen/DataRequest.asp
  The Office of the Registrar supports MSU research through our data request process by sending email messages on your behalf.

3.2 In order to process this request, please provide the following:

- Send a copy of BOTH your IRB application and IRB approval documentation to reg@msu.edu.
- Send the email information you would like sent. Please provide the following:
  - Email Subject
  - Email Text
  - Email Sent From Address (skastudy@msu.edu)
- Provide the number of students you need to contact based on your expected response rate and required response quantity.
- Provide the criteria for the target population (e.g., students with a residency address of X or students with ethnicity of Y).

  Description and Purpose:

  This survey is to be the first of an annual survey sponsored by the Office of Sustainability to better understand student attitudes, knowledge, and behavior in regards to on-campus sustainability issues. It is to be sent to 25,000 randomly selected undergraduate students only, to initially be sent out the week of April 27th with reminder emails to follow. As this is the first year of a multi-year project, we are over sampling students to gain a more accurate understanding of students' thoughts, attitudes, and knowledge regarding on-campus sustainability. In the following years we will be requesting a much smaller sample size.

  We are requesting the students email addresses in order to limit the total number of emails sent by utilizing Qualtrics survey software. We are also requesting the first name of the students, in order to personalize the recruitment and reminder emails sent to them. Past research has shown that personalizing the email increases survey response rates.

3.3 Double check IP address ranges with Qualtrics: (BECAUSE OF MSU'S CONTRACT WITH QUALTRICS YOU CAN SKIP THIS AND THE NEXT)

- 162.247.217.50
- 162.247.216.0/22

3.4 IT Services

- Contact Person: Joe Besko – Guy in charge of bulk emails – IT Services: jbesko@msu.edu 2-5335 (his direct line, don't abuse it).
  Whitelisting IP addresses. Make sure you send initial hello email from the MSU email account, or just call. You are looking to prevent "throttling" whereby they limit messages per minute from an organization (~rate of 125 per 30 min). ALSO, ask for them to put in place protections to prevent them going to spam folders. "Rate limit exemption" and "spam filter exemption"

Capital Area Transportation Authority

Michigan State University

Fall Semester 2018

Routes Serving MSU

Campus Fixed Route - Weekday

- 30 South and East Neighborhoods via Shaw Lane
- 31 Brody and East Neighborhoods via Vet Med
- 32 Commuter Lot – Clinical Center
- 33 Union – South Neighborhood
- 38 Spartan Village
- 39 University Village

Campus Fixed Route - Weekend

- 34 Brody Neighborhood/University Village
- 35 South Neighborhood/Spartan Village
- 36 East Neighborhood

Campus Paratransit

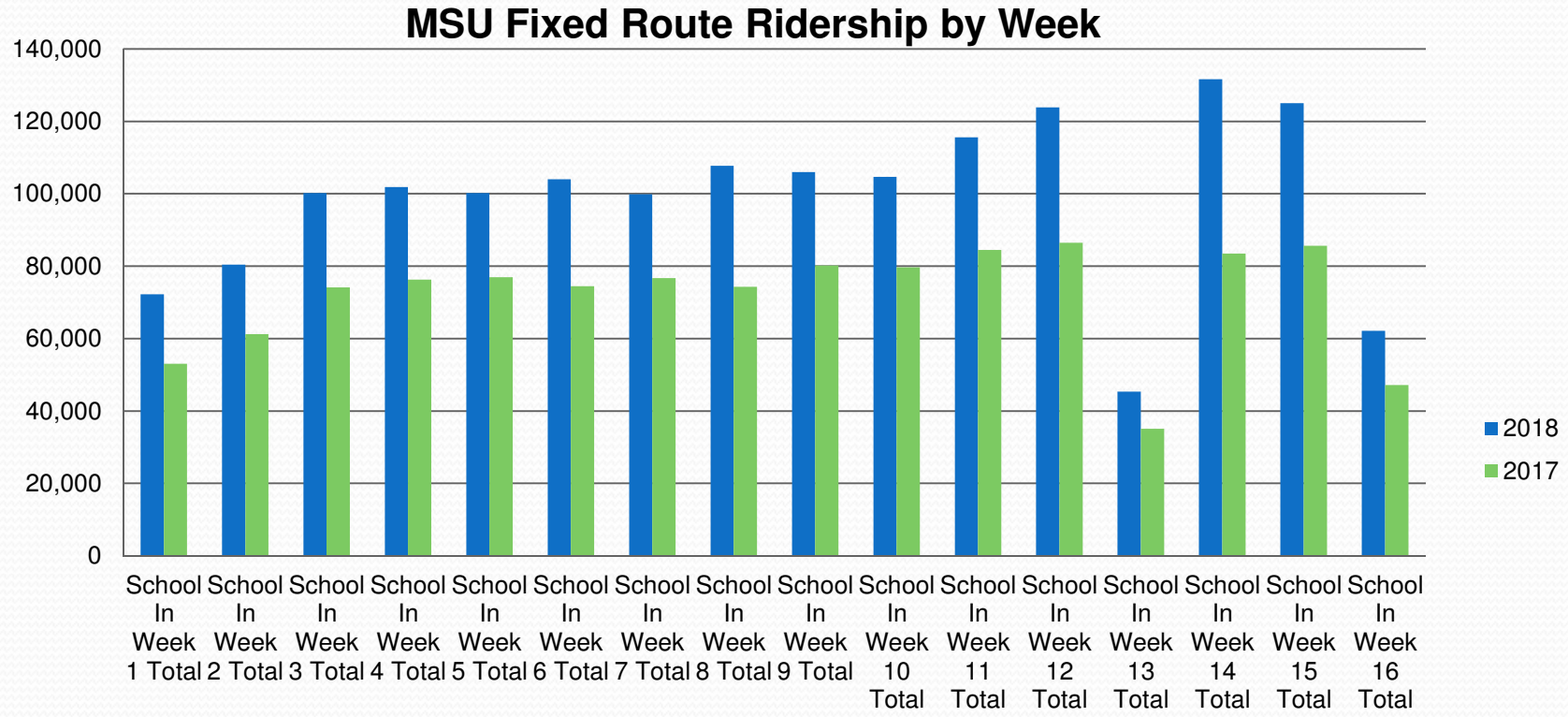
- Lot Link
- Night Owl

East Lansing

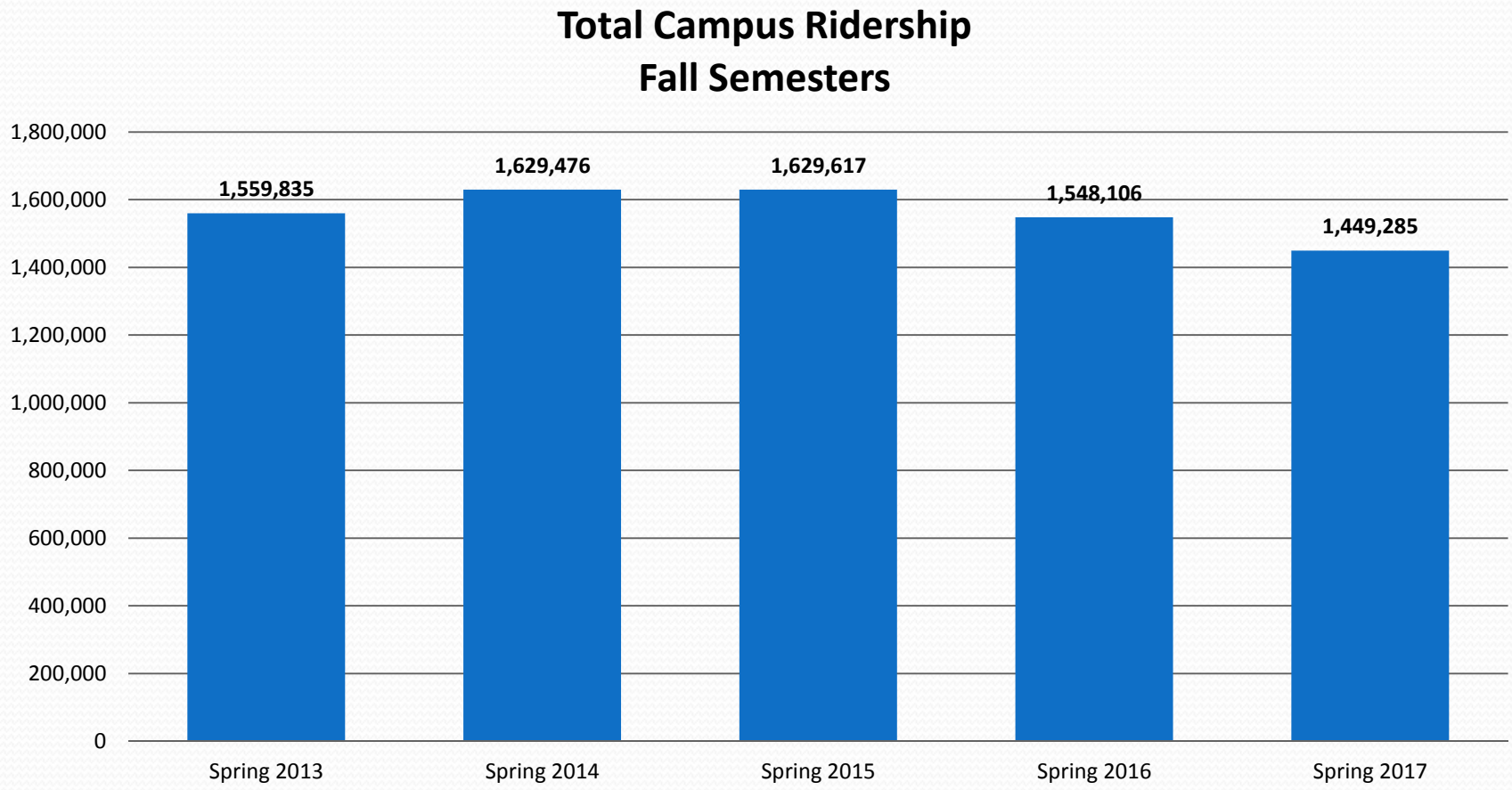
- 20 South Harrison/Jolly/Dunckel
- 22 MSU/Haslett/Meridian Mall
- 23 MSU/Okemos/Meridian Mall
- 24 E. Lansing/E Lake Lansing Rd.
- 25 North Harrison
- 26 Abbot-Chandler

Fall Semester 2018

Fall Semester Weekly Ridership: 2017-2018



Fall Semester Ridership: 2014-2018



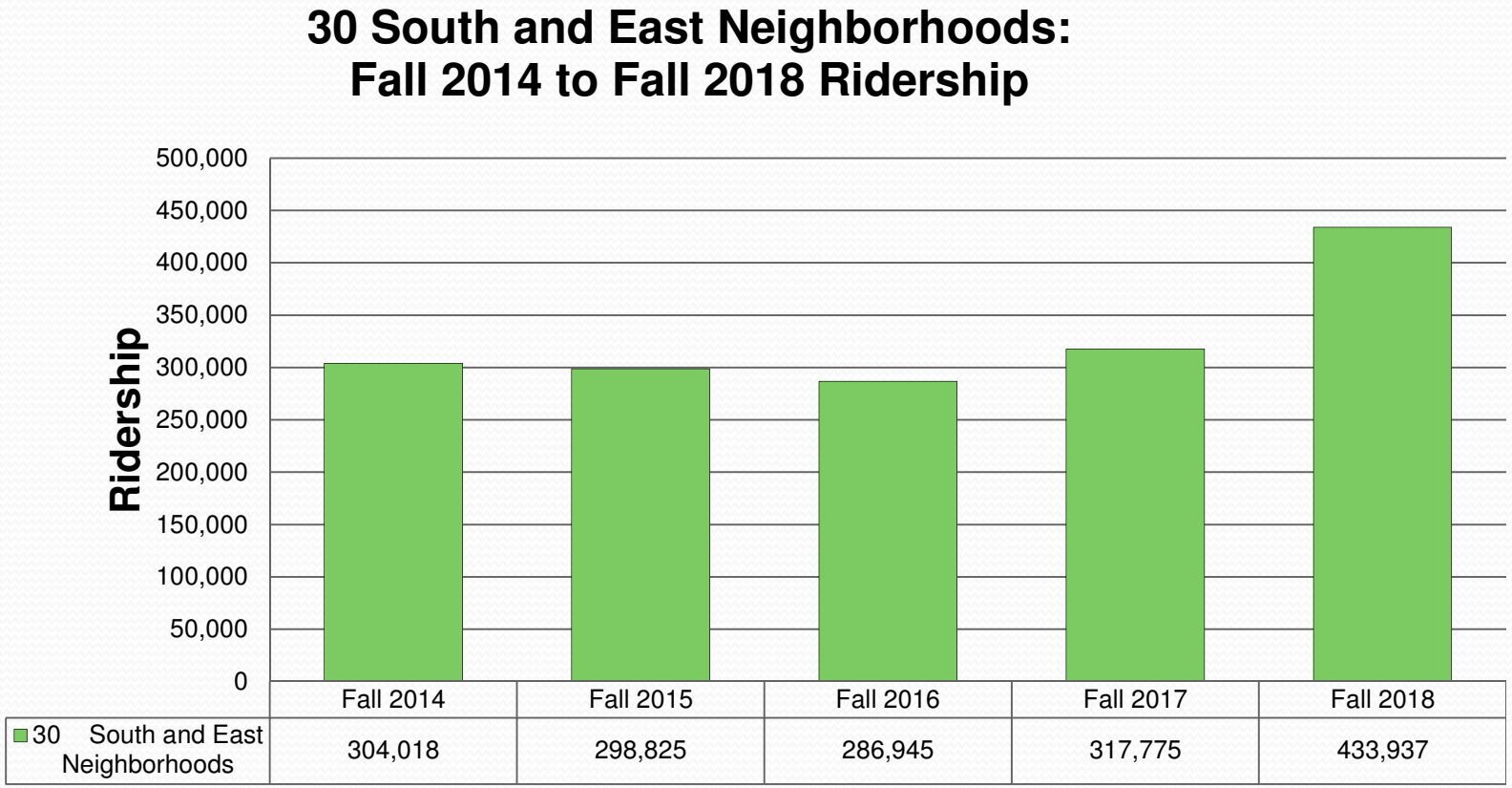
Ridership Trends by Route

	Fall 2017	Fall 2018
Campus Fixed Route - Weekday		
30 South and East Neighborhoods	317,775	433,937
31 Brody and East Neighborhoods	428,924	582,578
32 Commuter Lot/Audit'm/Clinical Ctr	90,232	103,160
33 Union/South Neighborhood	233,581	335,260
38 Spartan Village	NA	23,714
39 University Village	57,679	67,268
Campus Fixed Route - Weekend		
34 Brody Neighborhood - Univ. Vill.	8,806	16,427
35 South Neighborhood - Spart.Vill.	6,587	10,259
36 East Neighborhood	5,596	8,997
MSU Fixed Route Total	**1,149,180**	**1,581,600**
Campus Paratransit		
Night Owl	3,194	1,284
Lot Link	3,917	2,589
Spec-Tran (Directly Operated Only)	199	14
MSU Paratransit Total	**7,310**	**3,887**

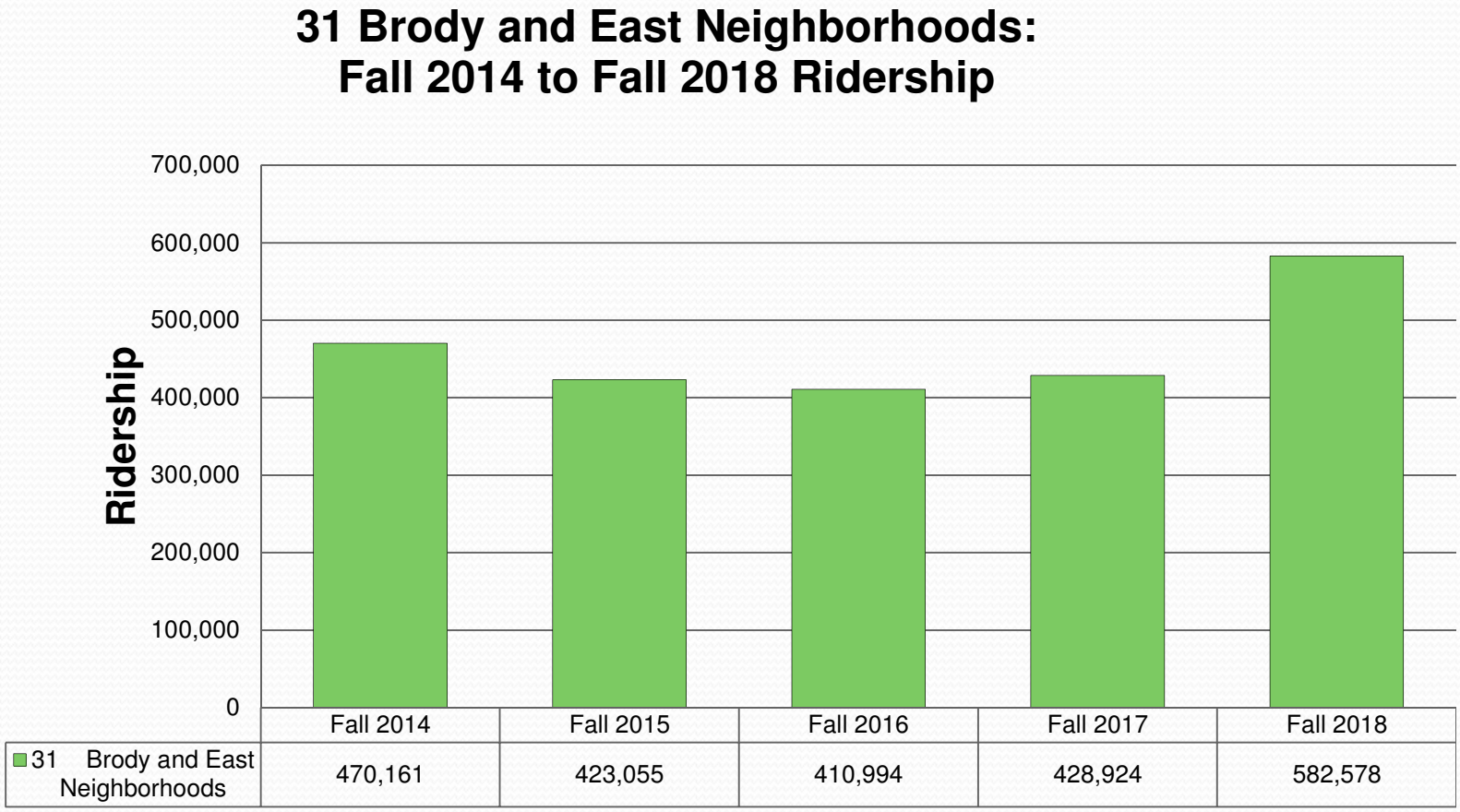
Weekday Route Trends

- 30 South and East Neighborhoods
- 31 Brody and East Neighborhoods
- 32 Commuter Lot/Auditorium/Clinical Center
- 33 Union/South Neighborhood
- 38 Spartan Village
- 39 University Village

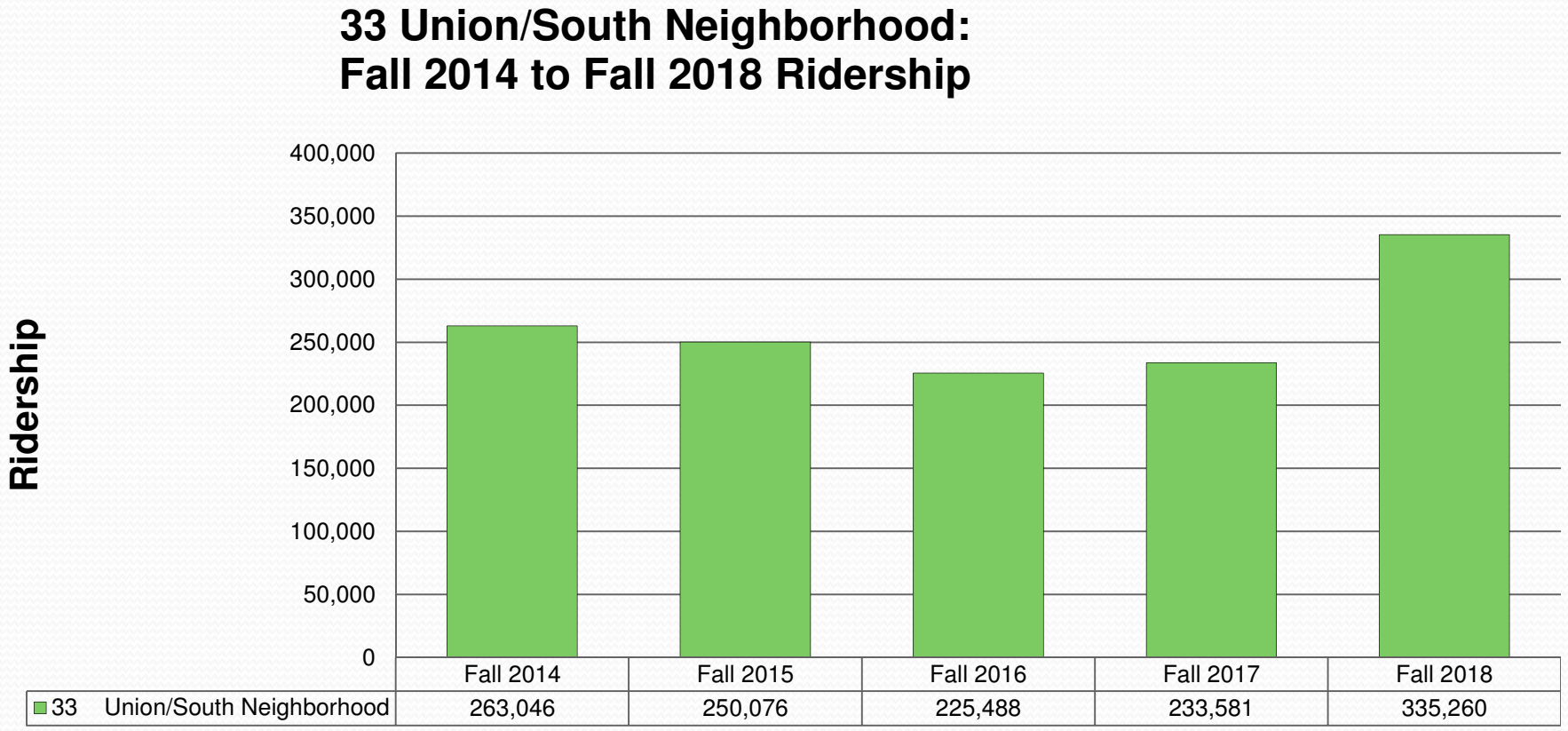
Fall Semester Ridership by Route: 2014-2018



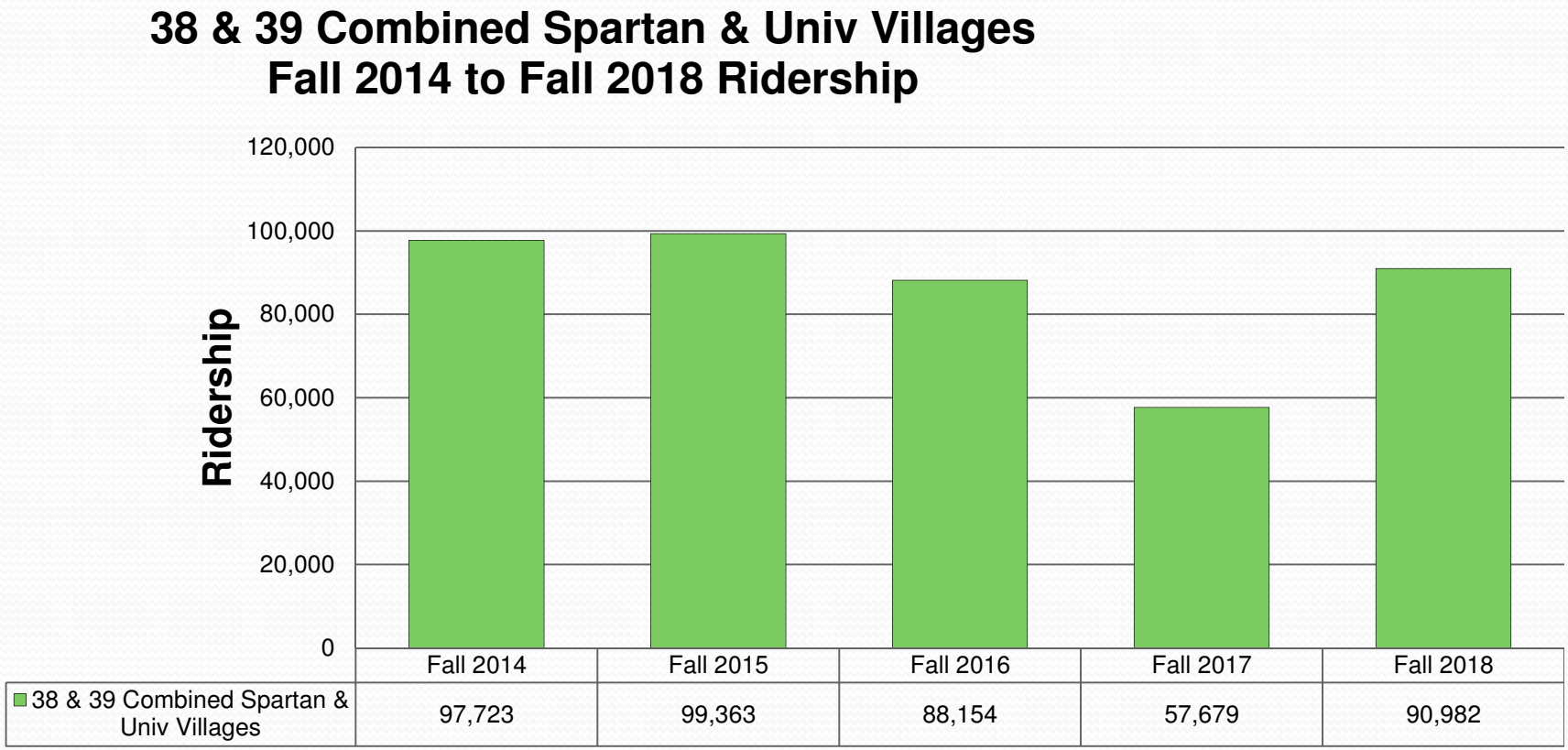
Fall Semester Ridership by Route: 2014-2018



Fall Semester Ridership by Route: 2014-2018



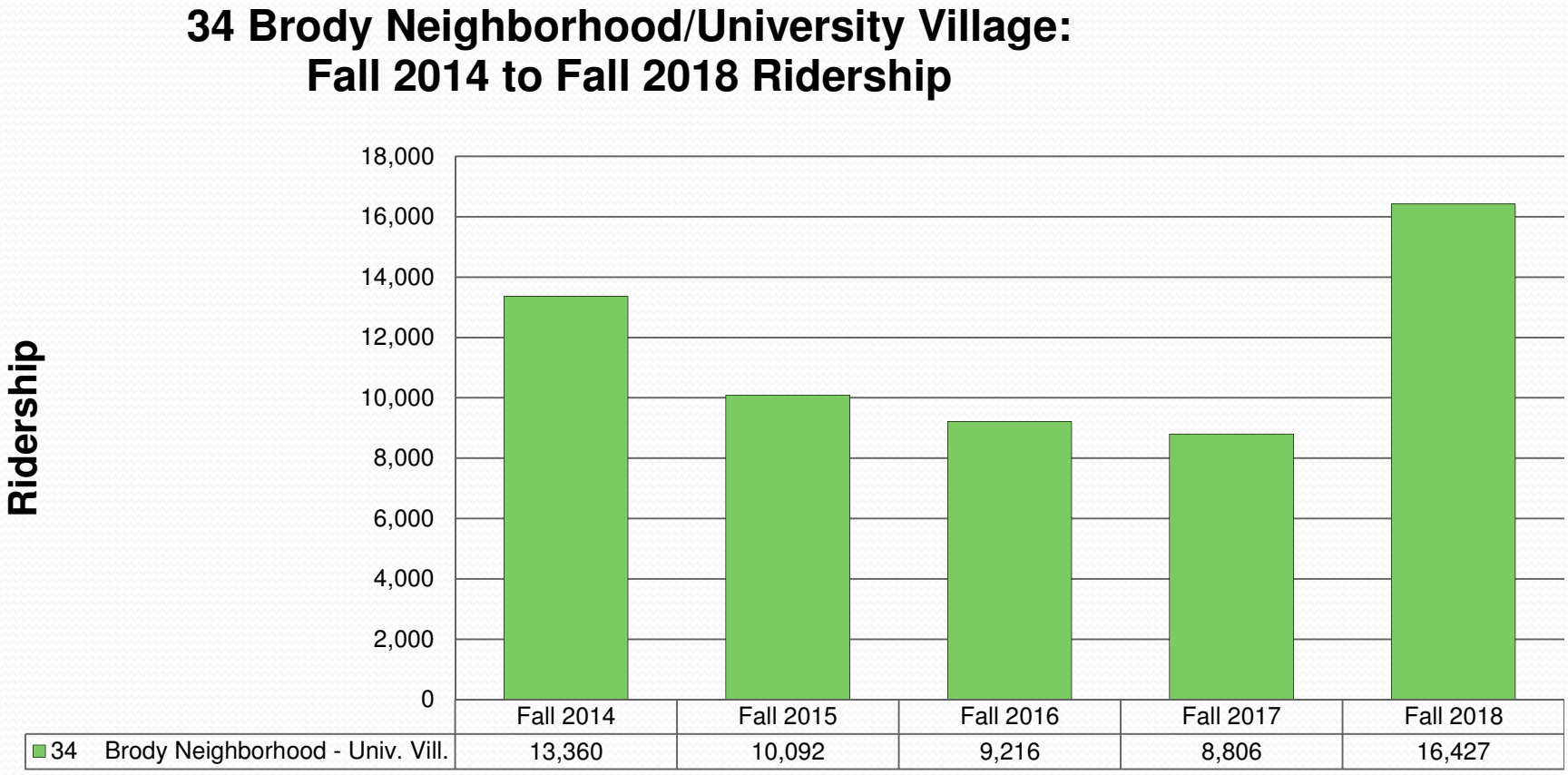
Fall Semester Ridership by Route: 2014-2018



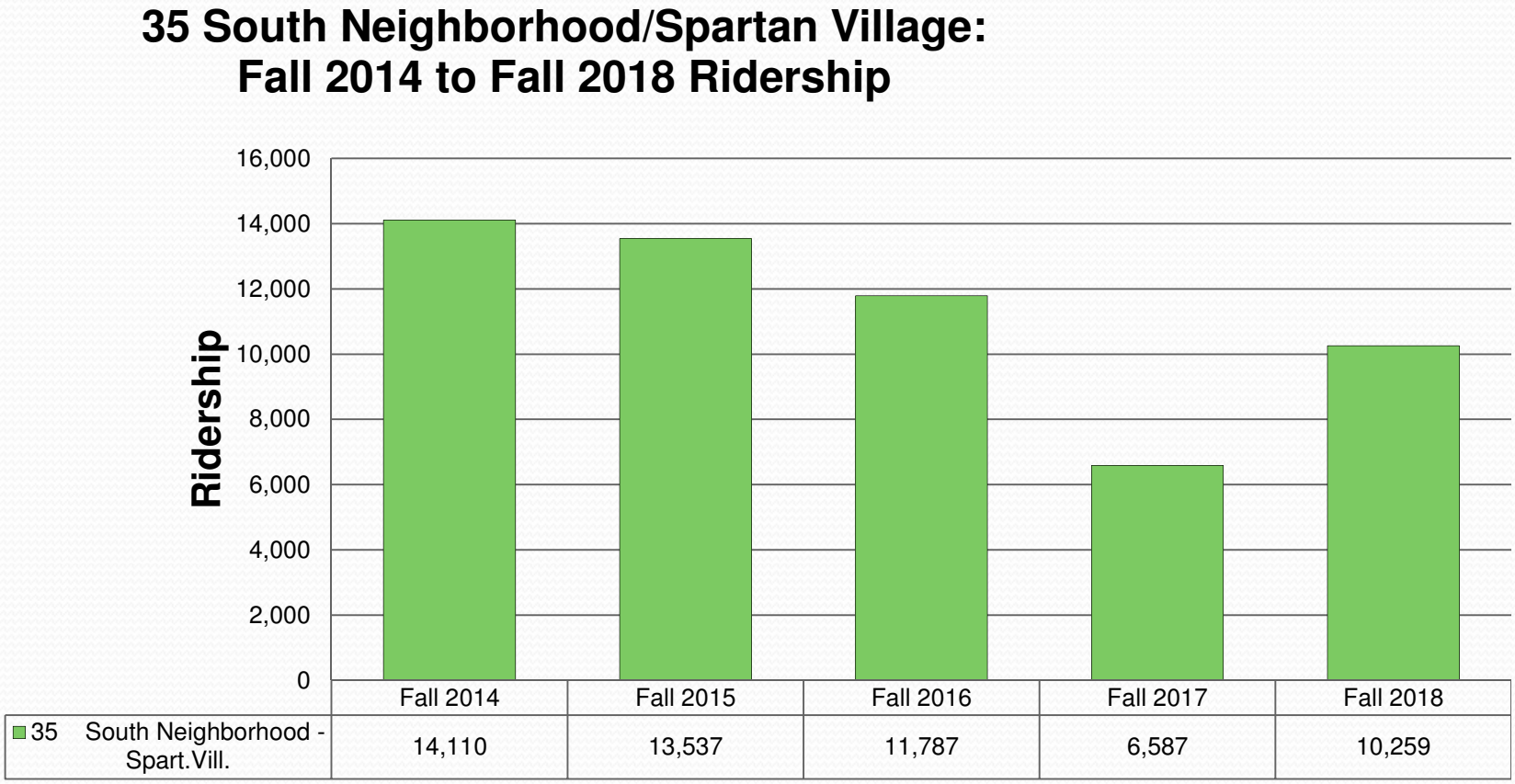
Weekend Route Ridership Trends

- 34 Brody Neighborhood - University Village
- 35 South Neighborhood – Spartan Village
- 36 East Neighborhood

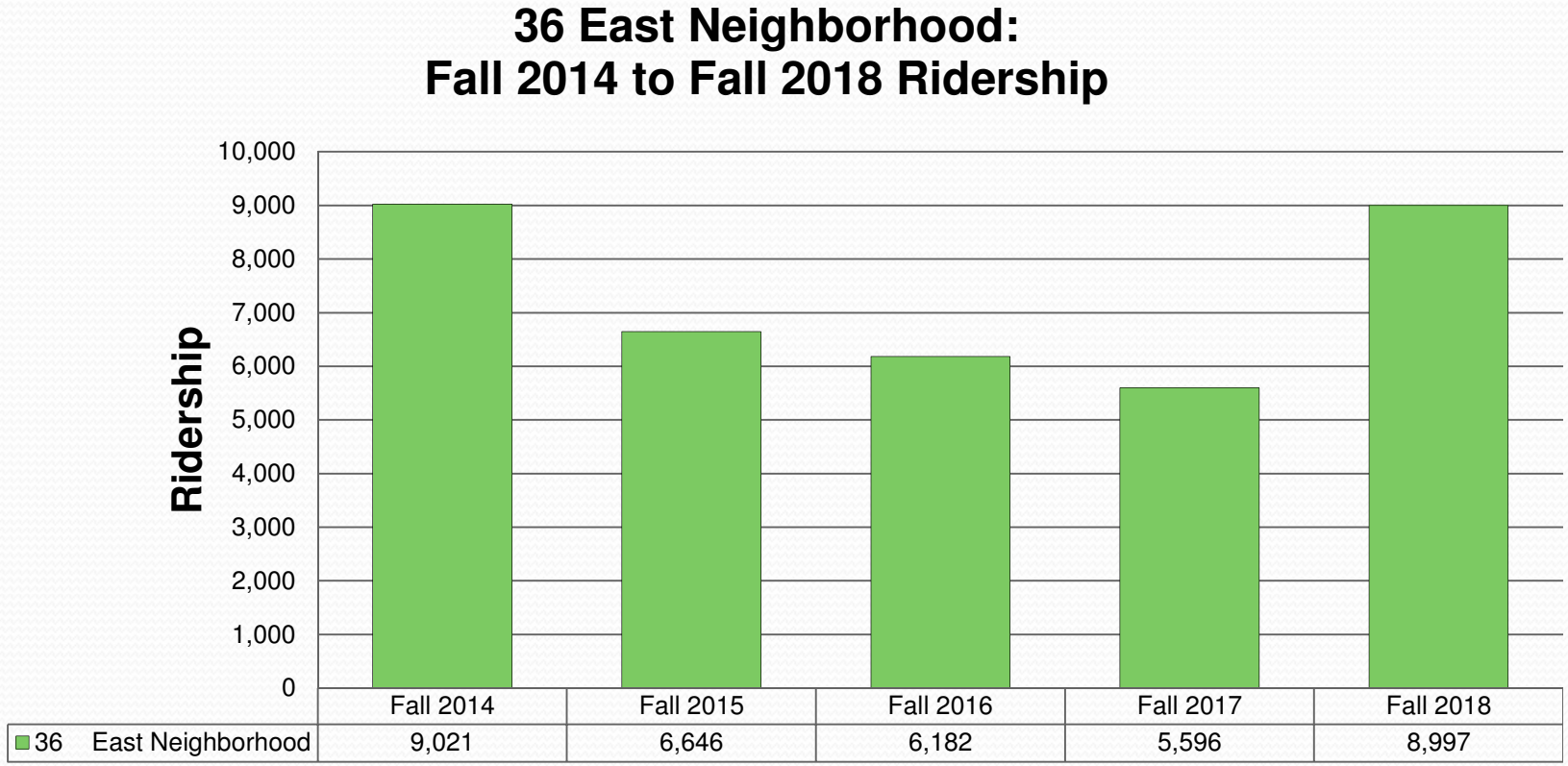
Fall Semester Ridership by Route: 2014-2018



Fall Semester Ridership by Route: 2014-2018



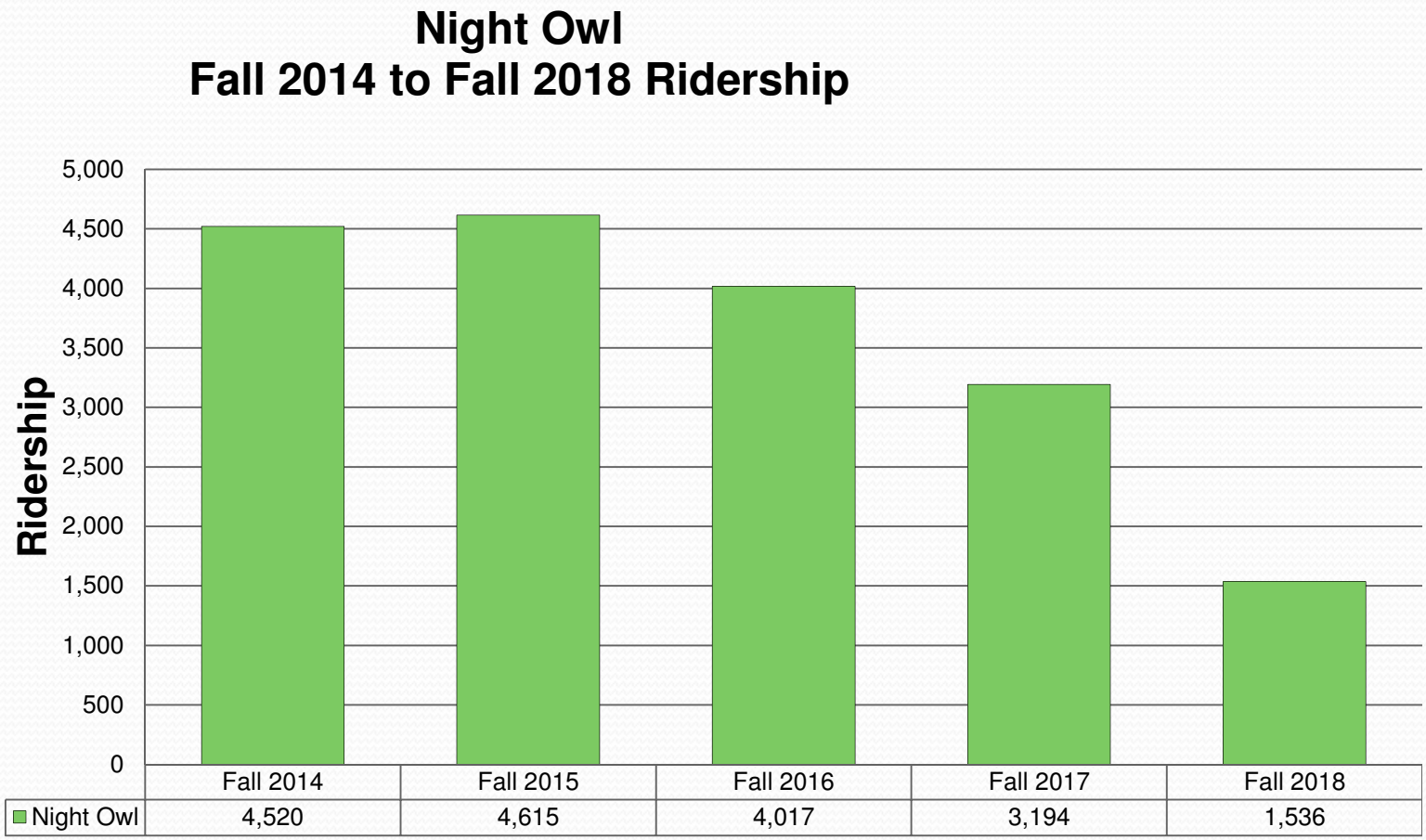
Fall Semester Ridership by Route: 2014-2018



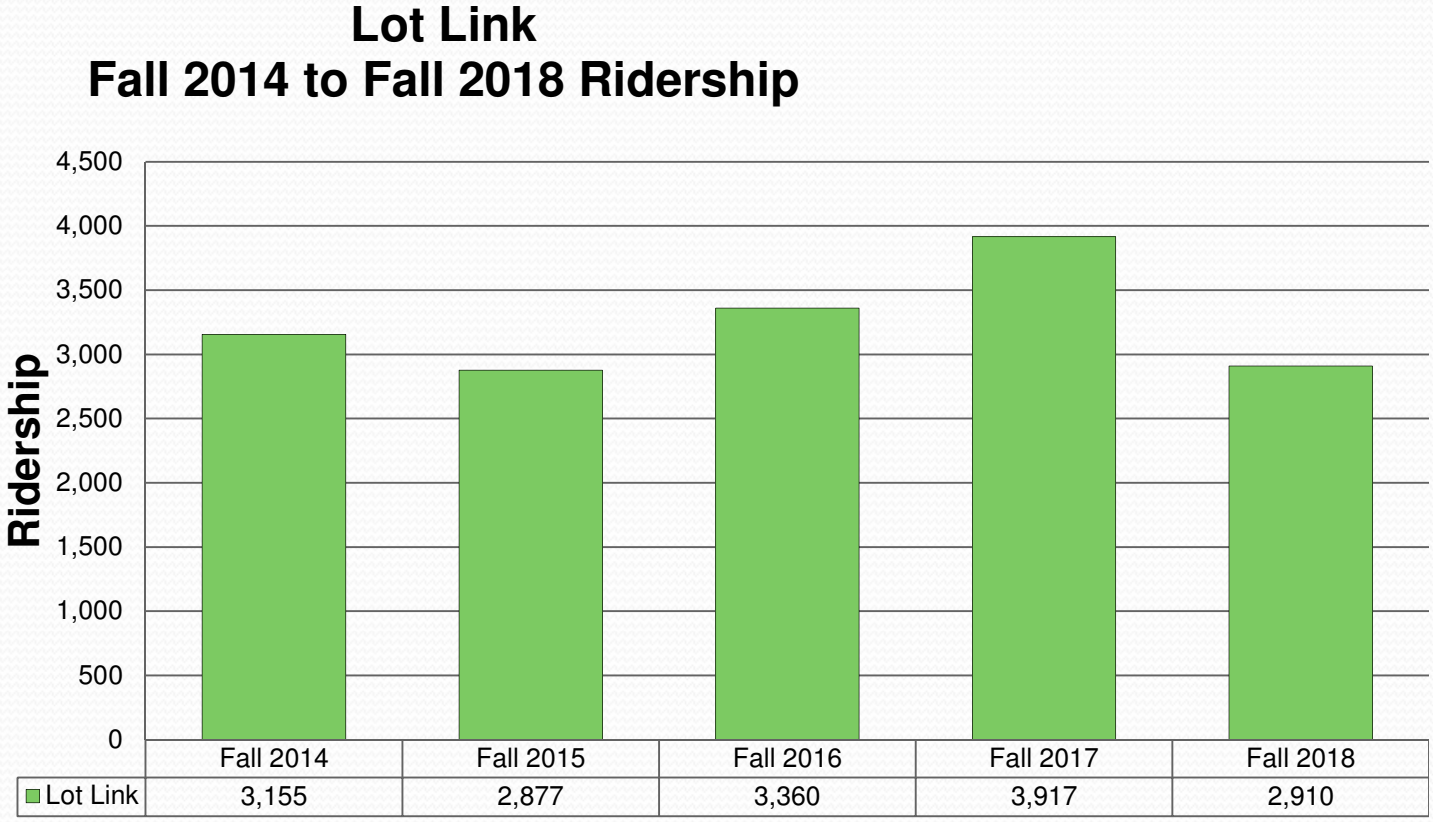
MSU Paratransit Ridership Trends

- Night Owl
- Lot Link

Fall Semester Ridership by Route: 2014-2018



Fall Semester Ridership by Route: 2014-2018



Fall Semester 2018

Route 30: East Neighborhood / South Neighborhood

Route 30: East Neighborhood to South Neighborhood
Fall Semester: Mon-Thu

MON-FRI

7 AM - 7 PM

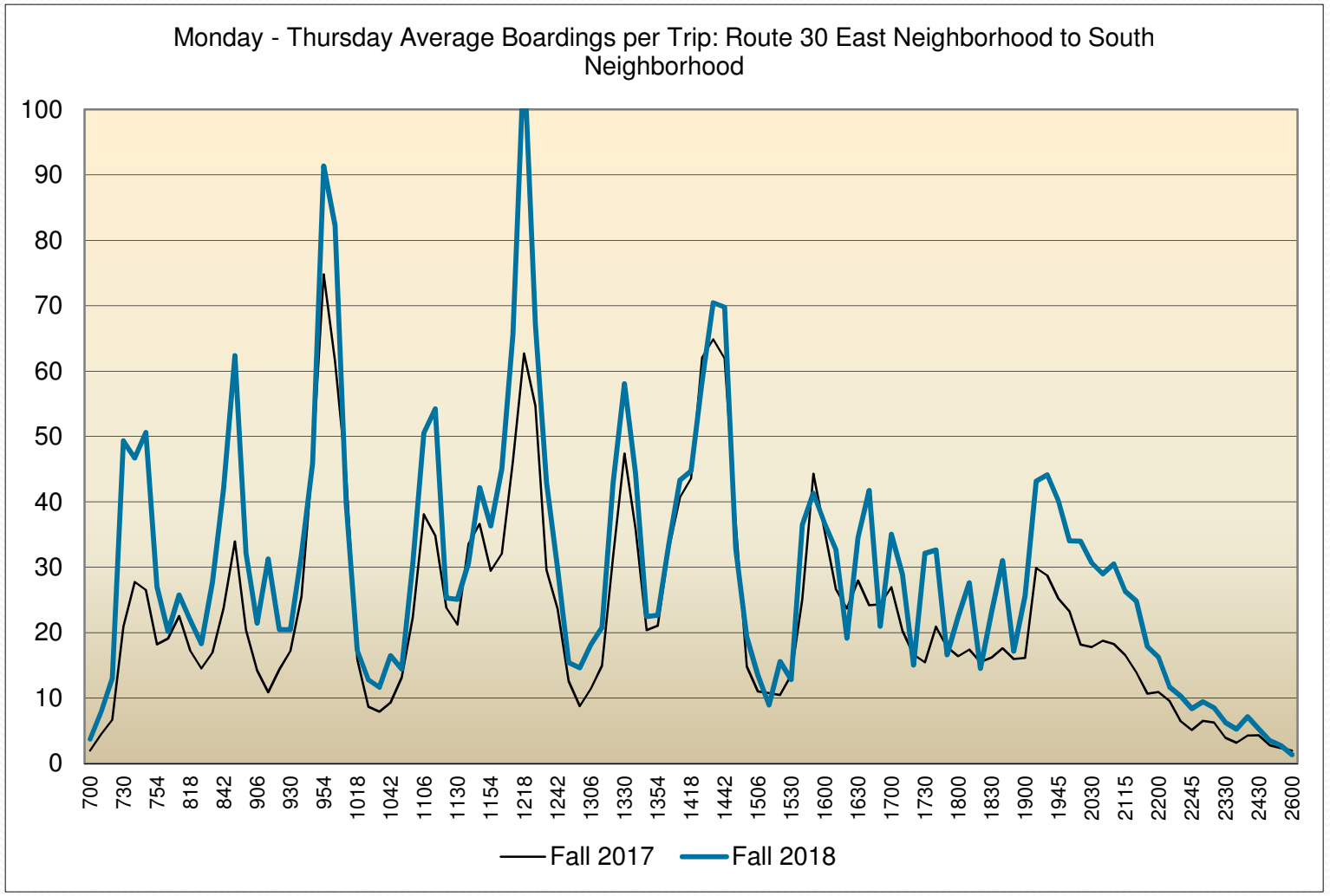
Frequency 8-10 minutes

7 PM – 12 AM

Frequency 15 minutes

12 AM - 2 AM

30 minutes



Route 30: South Neighborhood to East Neighborhood
Fall Semester: Mon-Thu

MON-FRI

7 AM - 7 PM

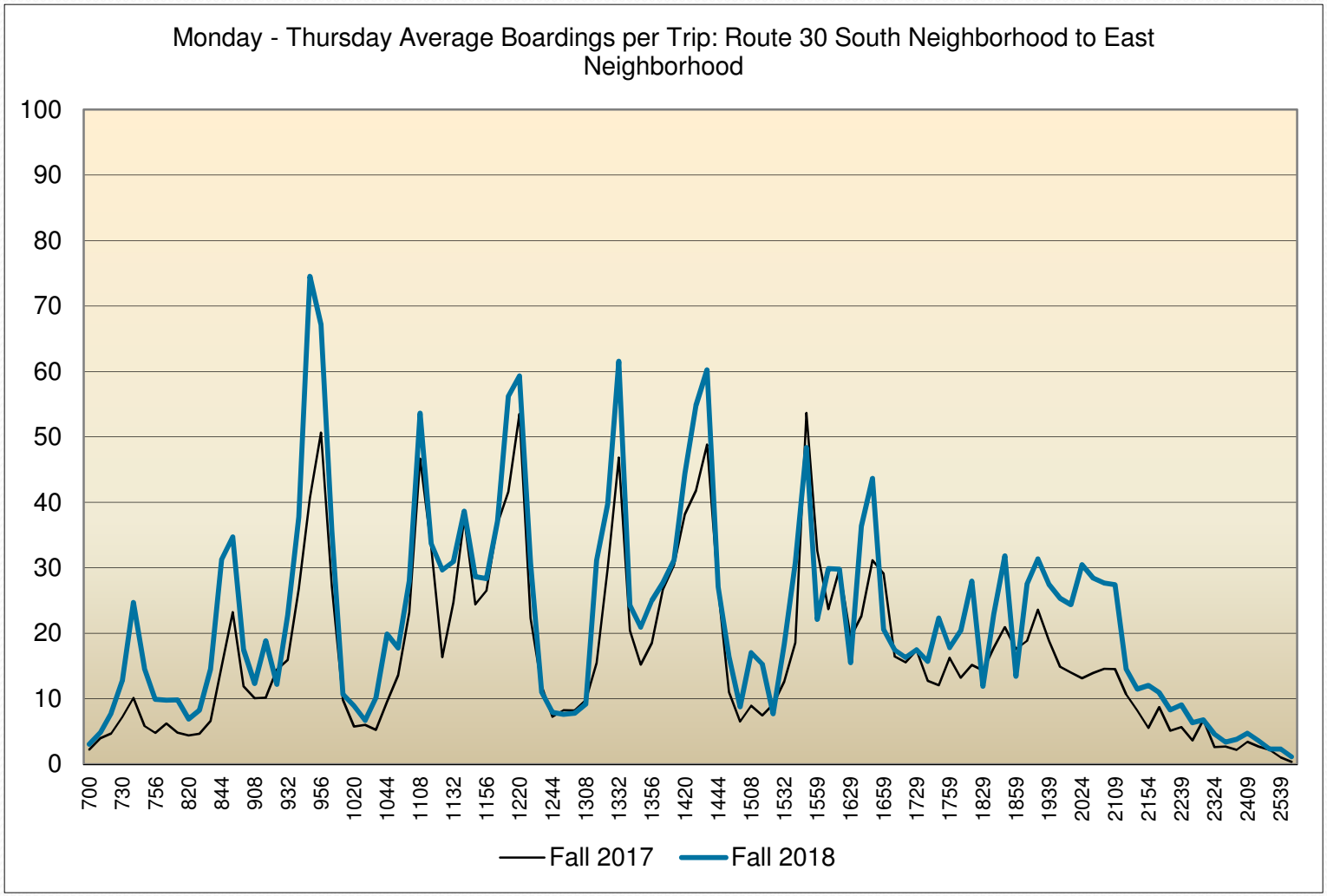
Frequency
8-10 minutes

7 PM – 12 AM

Frequency
15 minutes

12 AM - 2 AM

30 minutes



Fall Semester 2018

Route 31: Brody Neighborhood / South Neighborhood

Route 31: East Neighborhood to Brody Neighborhood
Fall Semester: Mon-Thu

MON-FRI

7 AM - 7 PM

Frequency 8-10 minutes

7 PM – 10 PM

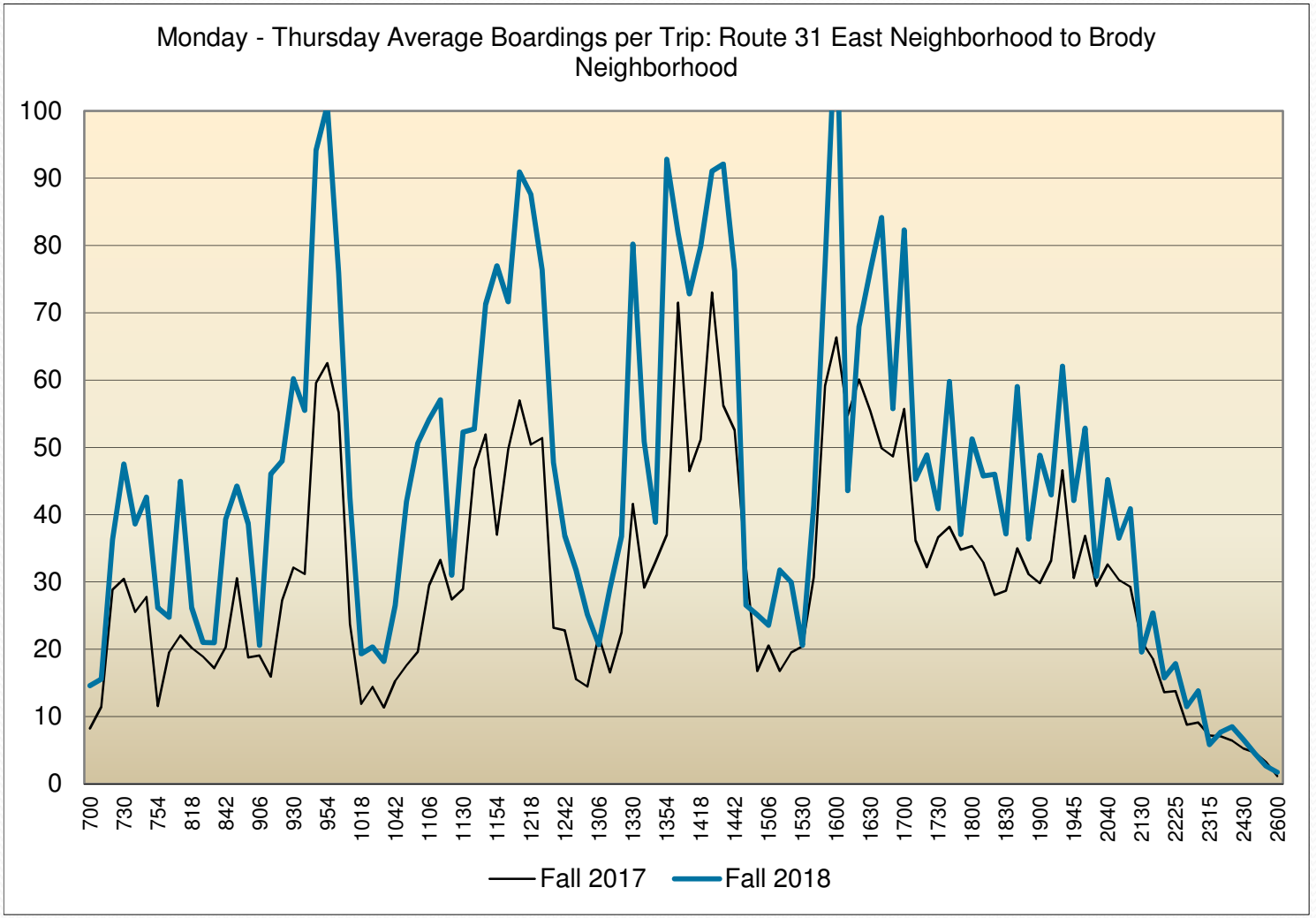
Frequency 10-15 minutes

10 PM - 12 AM

20 minutes

12 AM - 2 AM

30 minutes



Route 31: Brody Neighborhood to East Neighborhood
Fall Semester: Mon-Thu

MON-FRI

7 AM - 7 PM

Frequency 8-10 minutes

7 PM – 10 PM

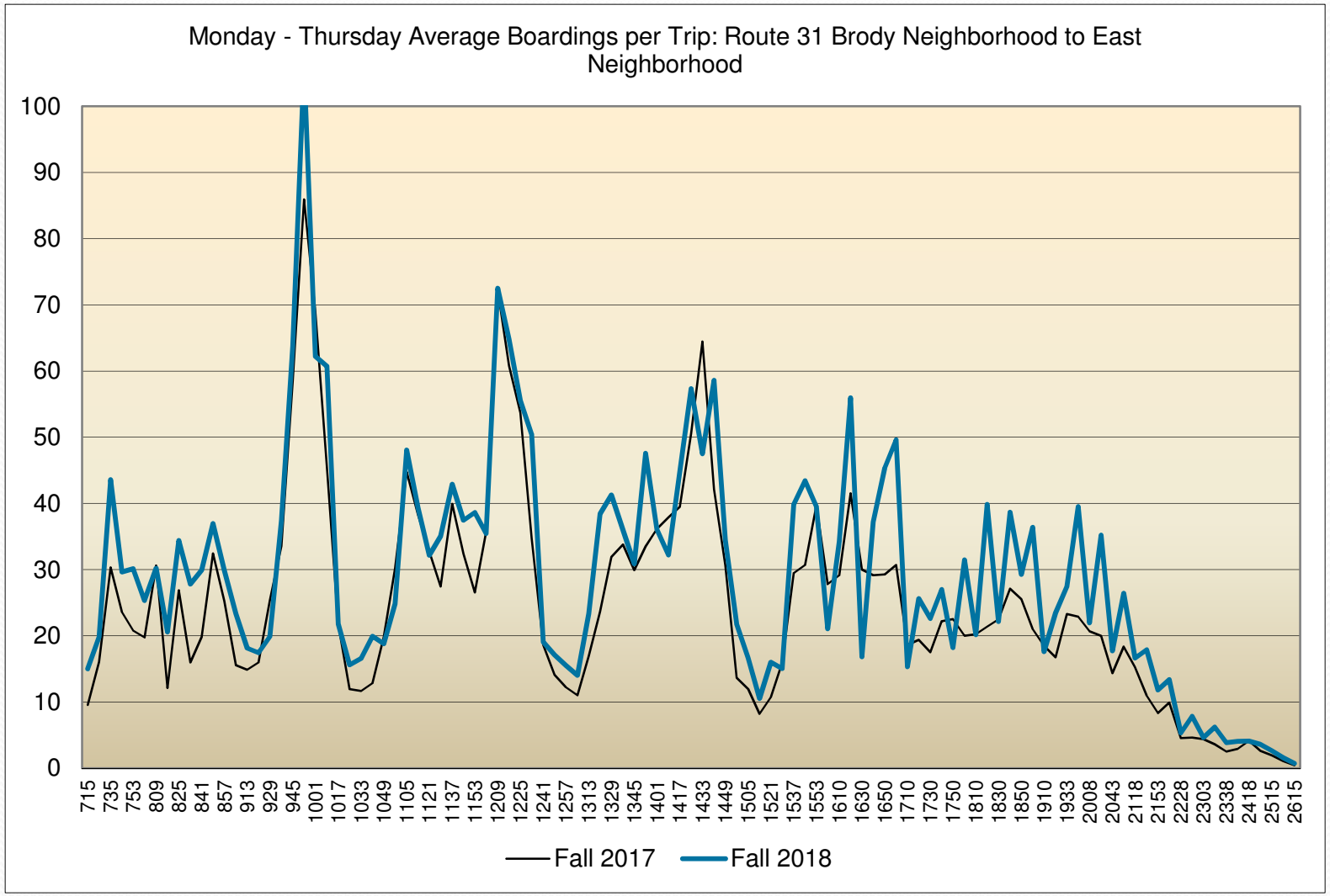
Frequency 10-15 minutes

10 PM - 12 AM

20 minutes

12 AM - 2 AM

30 minutes



Fall Semester 2018

Route 33:
Union / South Neighborhood

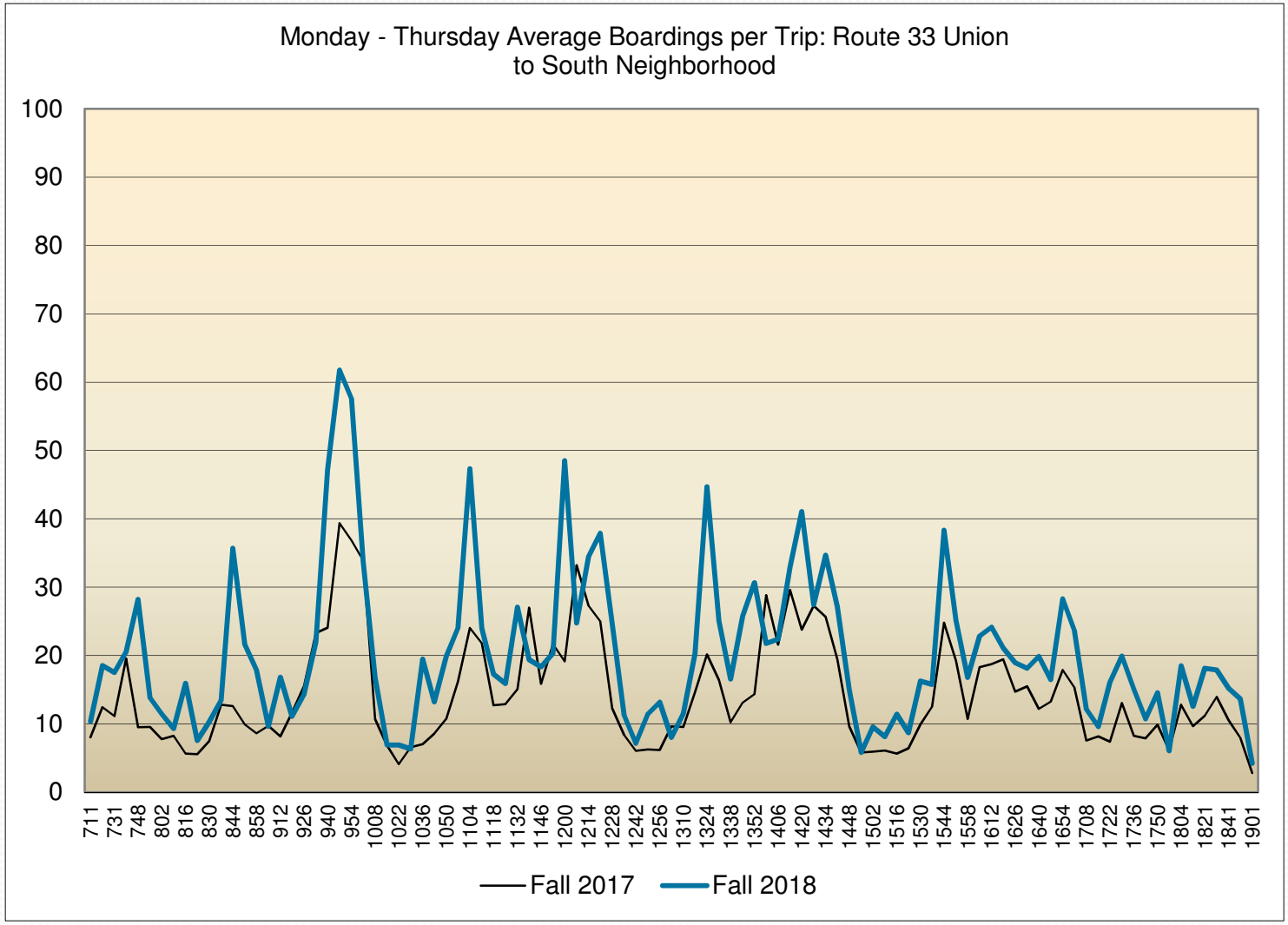
Route 33: Union to South Neighborhood
Fall Semester: Mon-Thu

MON-FRI

7 AM – 7:30 AM
Frequency
10 minutes

7:30 AM – 6PM
Frequency
7 minutes

6PM – 7PM
Frequency
10 minutes



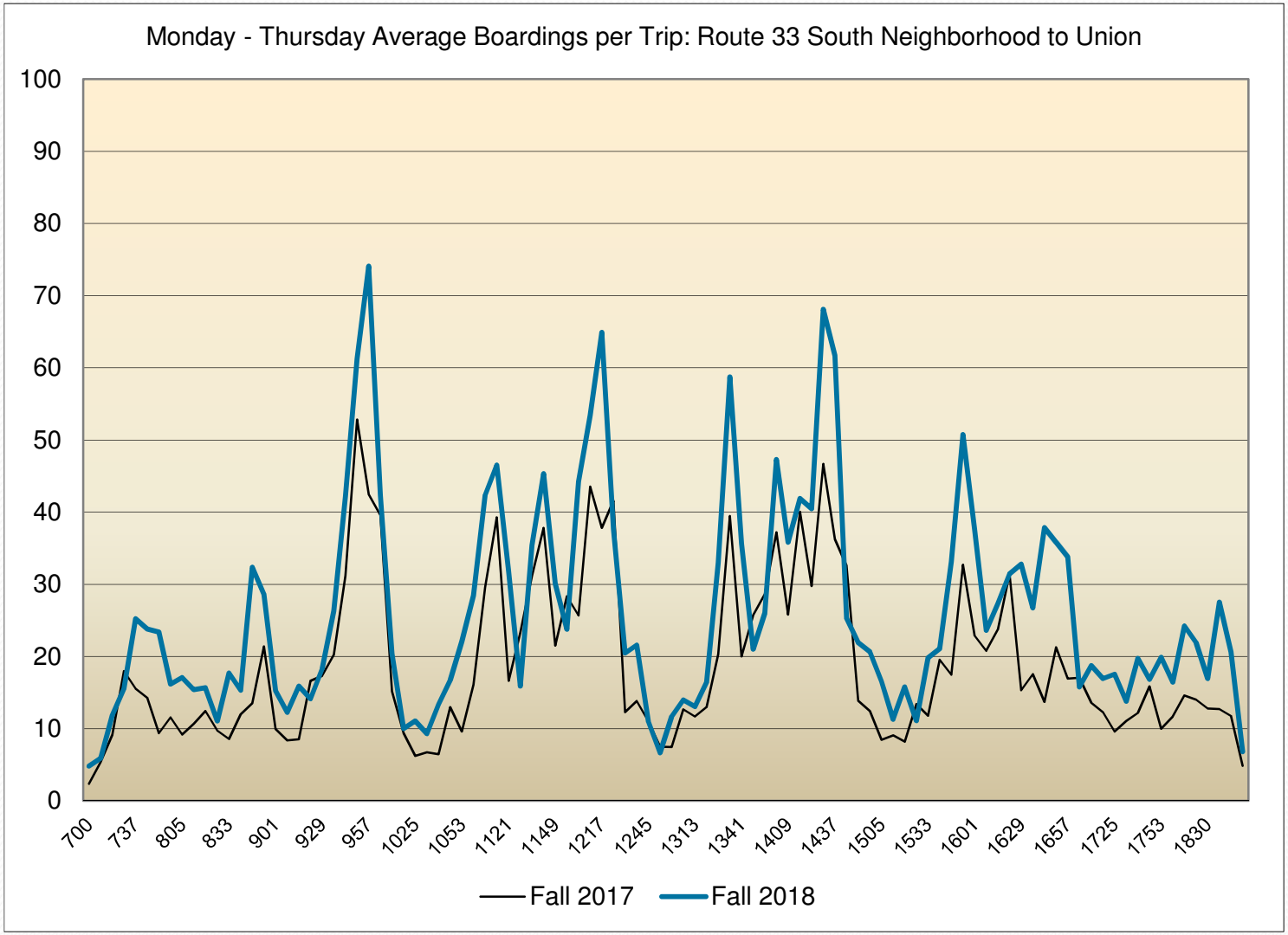
Route 33: South Neighborhood to Union
Fall Semester: Mon-Thu

MON-FRI

7 AM – 7:30 AM
Frequency
10 minutes

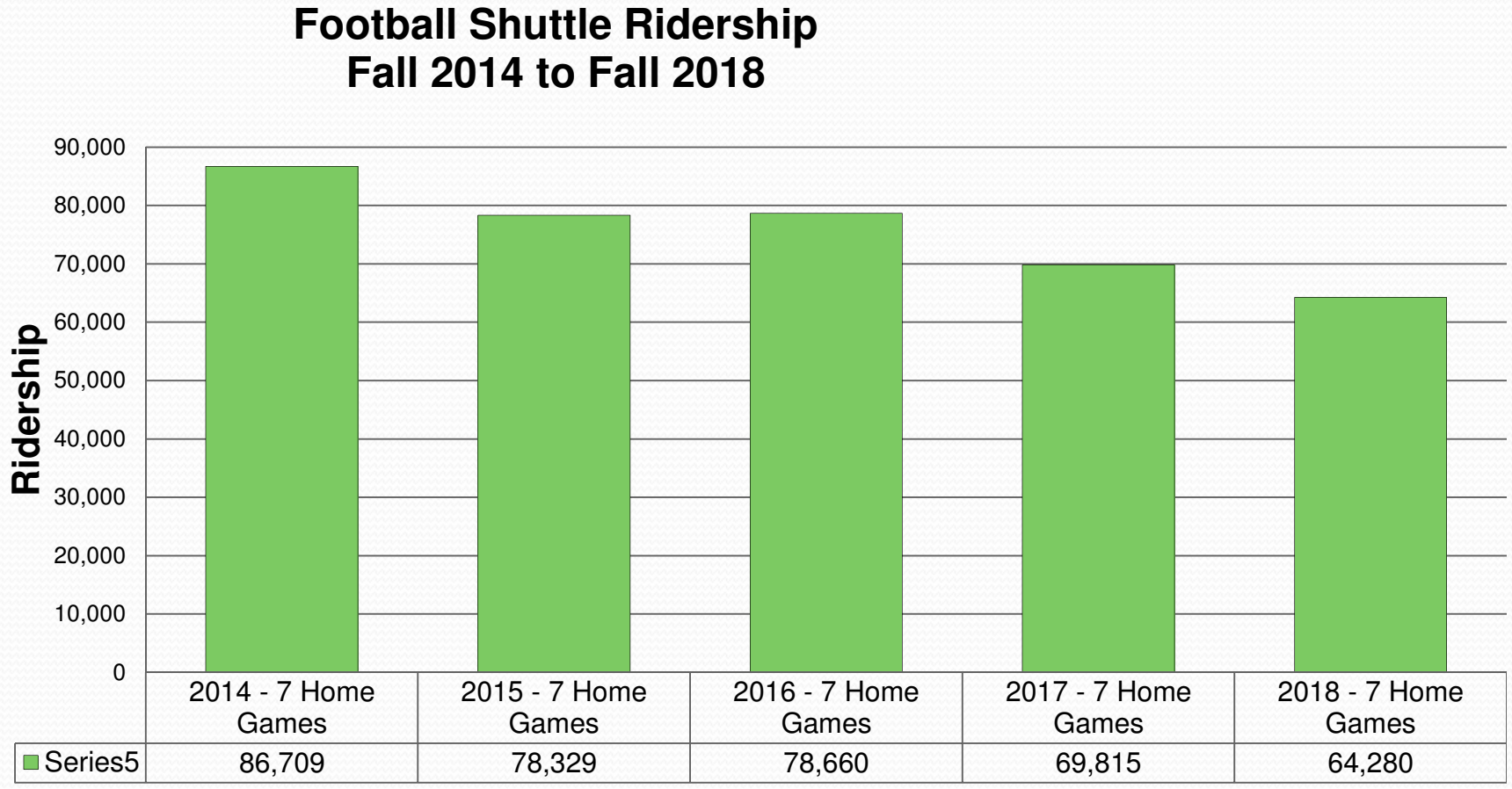
7:30 AM – 6PM
Frequency
7 minutes

6PM – 7PM
Frequency
10 minutes



Football Shuttle Ridership

Football Shuttle Ridership: 2014-2018



CATA & MICHIGAN STATE UNIVERSITY™

End of Presentation

5th Annual Sustainability Survey Report 2018

FOR
OFFICE OF SUSTAINABILITY
MICHIGAN STATE UNIVERSITY

By

Udita Sanga
Dr. Adam Zwickle

Knowledge, perceptions and behavior of undergraduate students on sustainability issues in MSU

SUMMARY

This report outlines the analysis of the 2018 survey on knowledge, perceptions and behavior of undergraduate students on sustainability issues in MSU campus funded by the Office of Sustainability in Michigan State University. The survey reached out to 20,000 students across campus through an online Qualtrics survey with questions on students' attitudes and actions towards campus sustainability, perceptions on economic sustainability, as well as knowledge about sustainability concepts and issues. The survey also collected demographic information such as race, age, gender and their residential choices both on and off campus. The survey questionnaire consisted of 9 key modules:

i. Demographics: College, Department and major information
ii. Assessment of Sustainable Knowledge (ASK)
iii. Sustainability Attitudes (SAS)
iv. Residential Choices; importance of availability of public transportation, recycling infrastructures, nature based-curricular activities and MSU sustainability efforts in influencing choice of residence.
v. Sustainability actions on campus such as riding bikes, recycling, limiting food waste and plastic use and participation in campus sustainability events
vi. Perceptions on economic sustainability
vii. Source of sustainability knowledge
viii. Other demographics such as race, gender, age.

The following sections on the report outline the preliminary results of the survey and particularly assesses the following questions that were relevant to the Office of Sustainability:

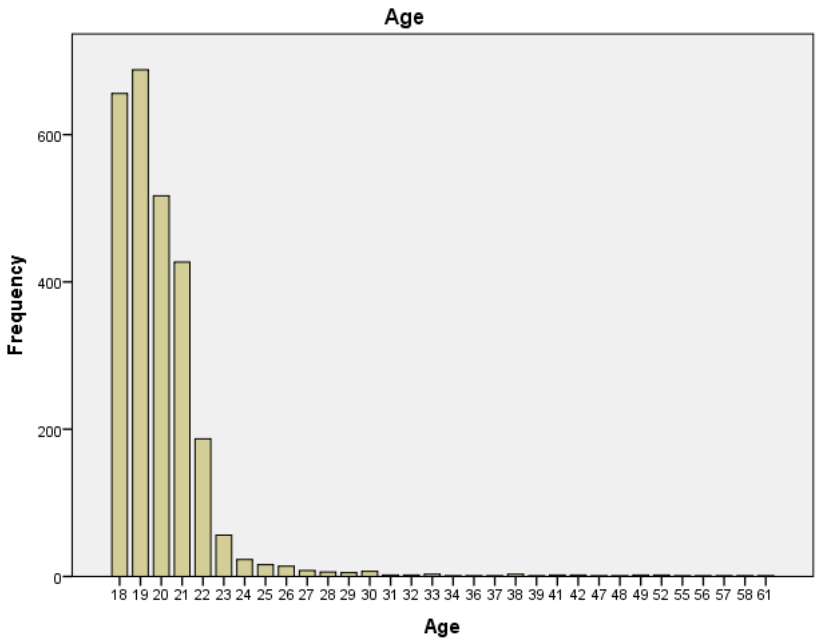
1. Why do students choose to live in specific residential halls?
2. Did residents in Bailey hall choose to stay in Bailey for consecutive years? Is this pattern exclusive to Bailey? Do residents of Bailey place more importance to nature based co-curricular activities more than other halls?
3. What are the sustainable actions students undertake on campus?
4. How important is it for students to have a more sustainable campus at MSU?

DEMOGRAPHIC INFORMATION

The survey was distributed among 20,000 MSU undergraduate students across campus between 11TH October to 30th October, 2018. The total number of survey responses was 3737 with an overall response rate of 18.6%.

In the final analysis, we deleted 199 incomplete cases (<20% progress) and 7 cases where respondents were less than 18 years old.

Total valid cases and sample size (N): 3529

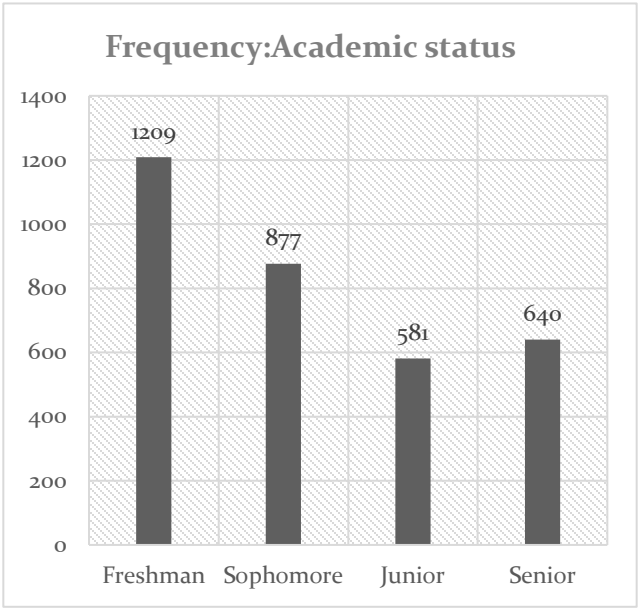


Age:

The mean age of the respondents was 20.04 with a maximum of 61 and a minimum of 18 (N= 2639)
The following table outlines the distribution of age in the survey sample

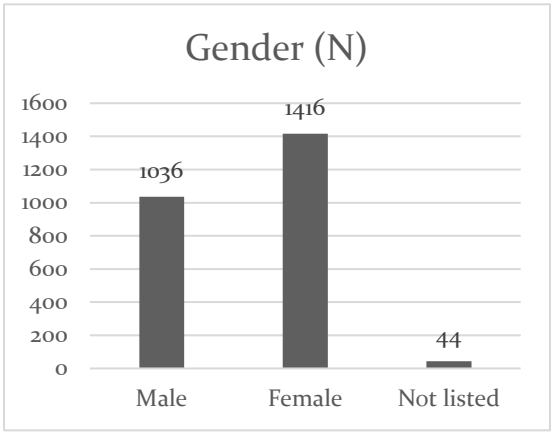
ACADEMIC STATUS:

The survey had 36.6% freshman respondents, 26.5 % sophomore respondents, 17.6 juniors, and 19.4 % seniors with 96% full time students and 4% part-time students.

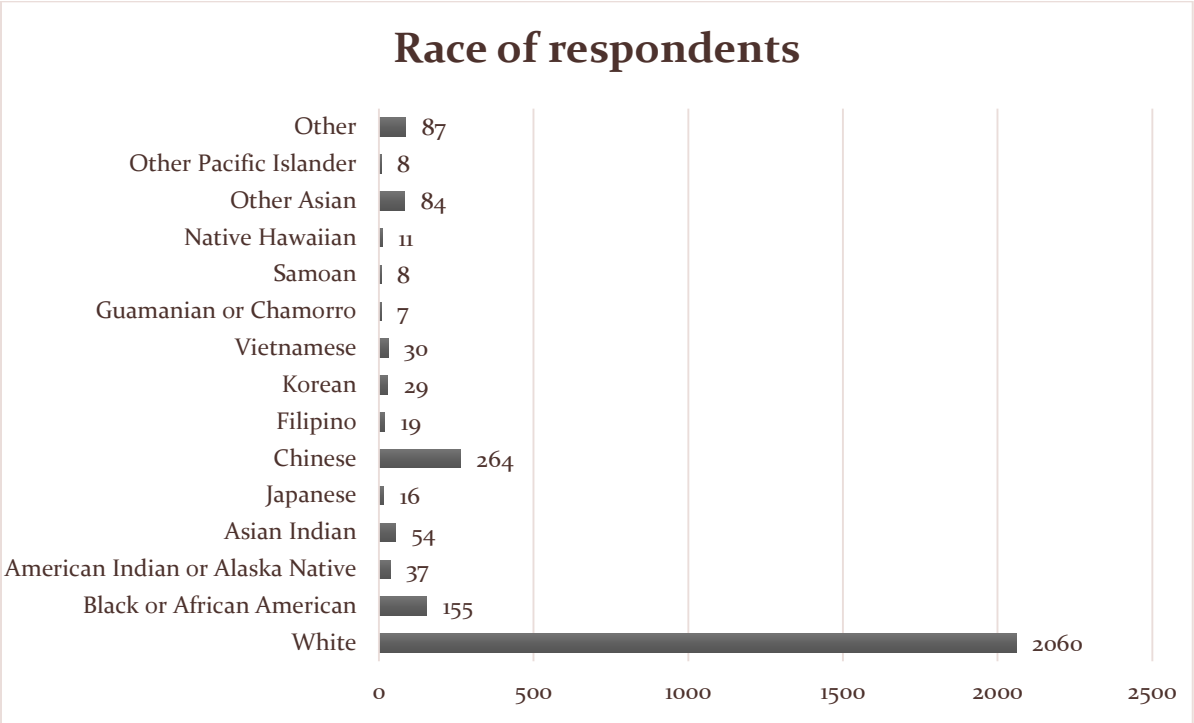


GENDER:

The survey had 41.5% male student participants and 56.7 % female respondents, 1.8% of the respondents did not list their gender.



RACE:

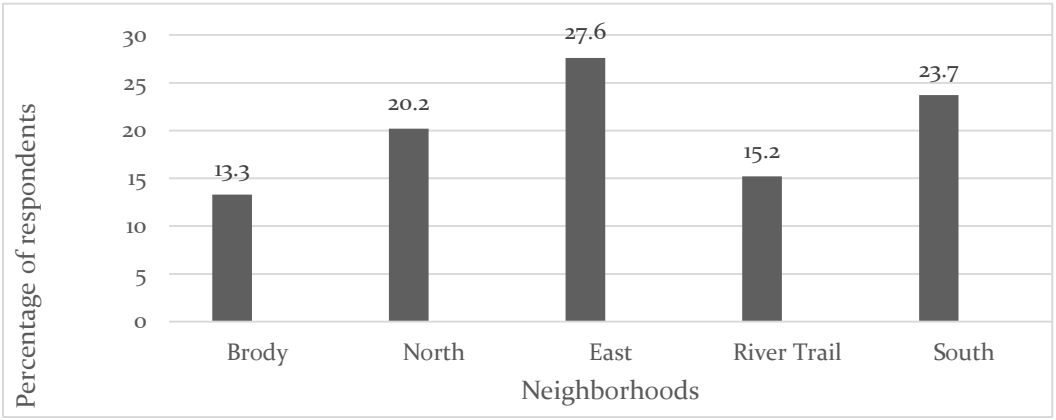


A majority of the survey respondents were white (58.4%) followed by Chinese (7.5%), Black or African American (4.4%). Other races such as American Indian or Alaska native, Asian Indian, Japanese, Filipino, Korean, Vietnamese, Guamanian or Chamorro, Samoan, Native Hawaiian, and other Asian, Pacific Islander etc. together made up for 11% of the survey population.

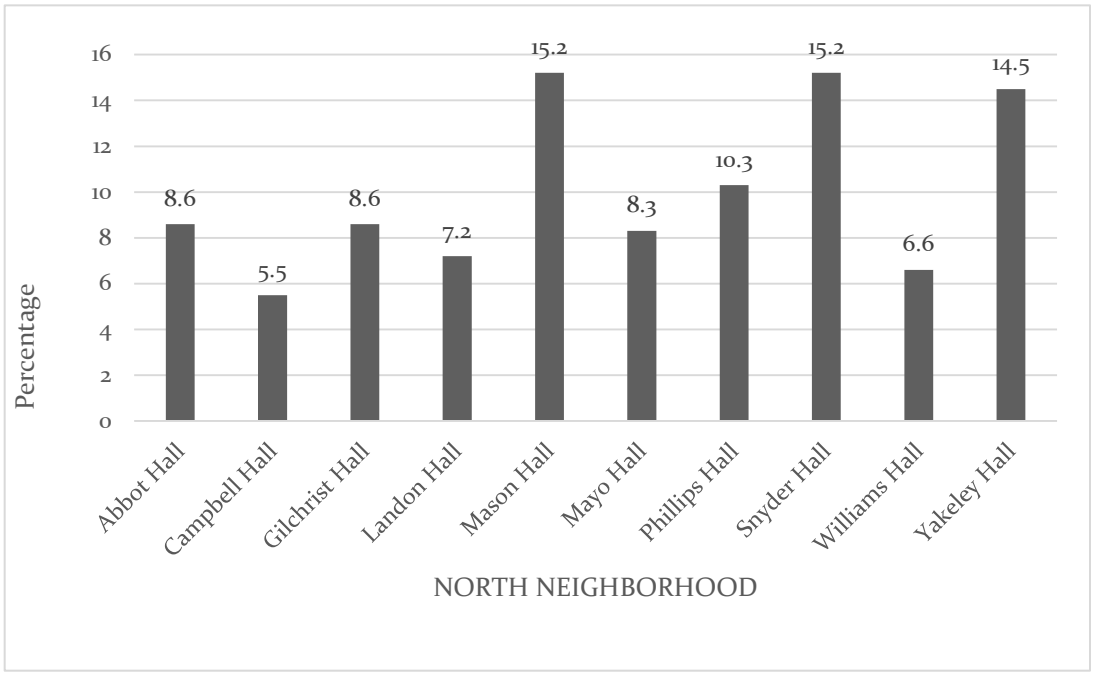
RESIDENTIAL CHOICES:

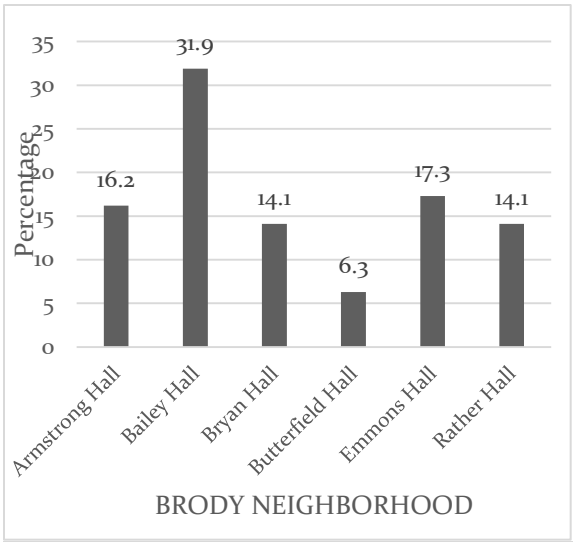
Demographics:

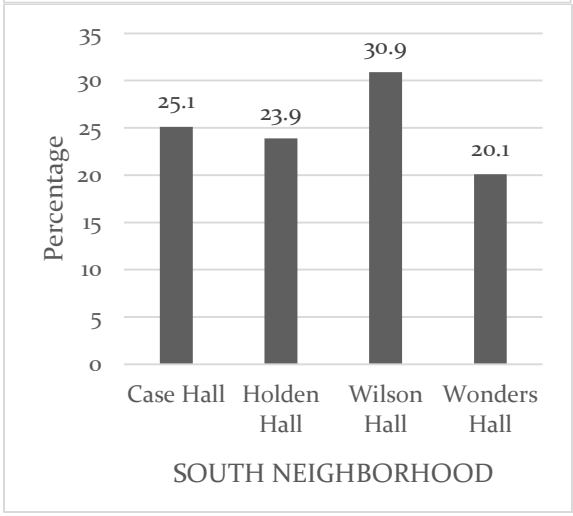
53.1% (n=1521) of survey respondents live on campus while 45% (n=1289) live off campus. 1.8% (n=52) of the respondents lived in sorority or fraternity houses. The following graphs shows the distribution of respondents living in on-campus neighborhoods. (N= 1458)

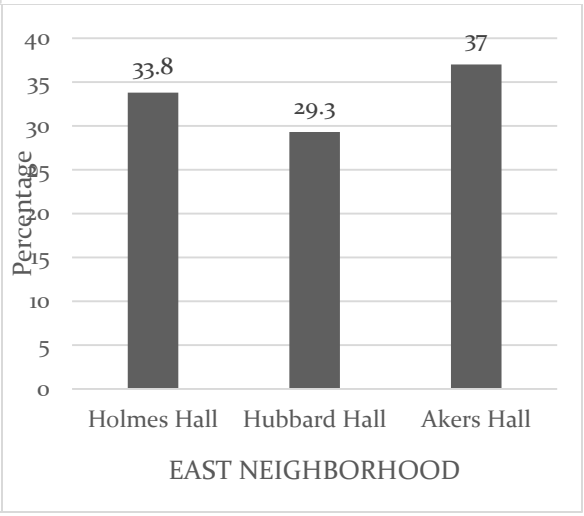


The following graphs show the distribution of respondents within each neighborhood.




35
30
25
20
15
10
5
0
Percentage
31.9
16.2
14.1
6.3
17.3
14.1
Armstrong Hall
Bailey Hall
Bryan Hall
Butterfield Hall
Emmons Hall
Rather Hall
BRODY NEIGHBORHOOD


35
30
25
20
15
10
5
0
Percentage
25.1
23.9
30.9
20.1
Case Hall
Holden Hall
Wilson Hall
Wonders Hall
SOUTH NEIGHBORHOOD


40
35
30
25
20
15
10
5
0
Percentage
33.8
29.3
37
Holmes Hall
Hubbard Hall
Akers Hall
EAST NEIGHBORHOOD

RESEARCH QUESTION 1:

Why do students choose to live in specific neighborhoods on campus?

Analysis Methodology: Multinomial logistic regression was used to assess the factors that were significant in predicting the choice of neighborhood based on importance of availability of public transportation, recycling facilities, nature-based co-curricular facilities and MSU sustainability efforts on campus.

Results:

Model Fitting Information

Model	Model Fitting Criteria -2 Log Likelihood	Likelihood Ratio Tests Chi-Square	df	Sig.
Intercept Only	2125.951			
Final	2005.024	120.928	64	.000

The model fitting results are statistically significant suggesting that the model statistically significantly predicts the dependent variable better than the intercept-only model alone

Likelihood Ratio Tests

Effect	Model Fitting Criteria -2 Log Likelihood of Reduced Model	Likelihood Ratio Tests Chi-Square	df	Sig.
Intercept	2005.024[a]	.000	0	.
PUBLIC_TRANS_ACCESS	2048.820	43.797	16	.000
RECYC_FACILITY_ACCESS	2021.995	16.971	16	.387
COCURR_ACTIVITY_AVAIL	2029.312	24.289	16	.083
MSU_EFFORT_IMPORTANCE	2023.868	18.844	16	.277

This table shows that importance of access to public transportation is statistically significant (p= 0.000) signifying that access to public transportation is a factor that influences the choice of on campus residential neighborhood. Importance of availability of recycling facilities, nature-based cocurricular activities and MSU sustainability efforts were not statistically significant in predicting the likelihood of choice of neighborhoods.

The parameter estimates of the multinomial regression (See Appendix Table 1 above for details) show that access to public transport (PUBLIC_TRANS_ACCESS=4]), which is a dummy variable representing comparison between 'fairly important' compared to 'very important", is statistically significant (B= -0.880; p=0.02) for Brody Neighborhood as compared to South Neighborhood. **This implies that students are more likely to choose Brody Neighborhood compared to South Neighborhood due to access to public transportation.** Further, access to nature based co-curricular activities (COCURR_ACTIVITY_AVAIL=1), which is a dummy variable representing comparison between 'not important' compared to 'very important", is statistically significant (B= -1.412; p=0.002) for Brody Neighborhood as compared to South Neighborhood. **This implies that students are more likely to choose Brody Neighborhood compared to South Neighborhood due to access to nature-based co-cocurricular activities.**

Access to public transport (PUBLIC_TRANS_ACCESS=1), which is a dummy variable representing comparison between 'not important' compared to 'very important", is statistically significant (B= -0.938; p=0.02) for River Trail Neighborhood as compared to South Neighborhood. **This implies that students are more likely to choose River Trail Neighborhood compared to South Neighborhood due to access to public transportation.**

Access to public transport(PUBLIC_TRANS_ACCESS=1), which is a dummy variable representing comparison between 'not important' compared to 'very important", is statistically significant (B= -1.049; p=0.000) and (PUBLIC_TRANS_ACCESS=2), which is a dummy variable representing comparison between 'slightly important' compared to 'very important", is statistically significant (B= -0.661; p=0.014) for East Neighborhood as compared to South Neighborhood. **This implies that students are <u>much</u> more likely to choose East Neighborhood compared to South Neighborhood due to access to public transportation.**

RESEARCH QUESTION 2:

Did residents in Bailey hall choose to stay in Bailey for consecutive years? If so, is this pattern exclusive to Bailey? Do residents of Bailey place more importance to nature based co-curricular activities more than other halls?

Analysis:

We used the chi-square test for independence or the chi-square test of association to assess if there is a relationship between the three categorical variables, BRODY_HALL which indicates the hall within the Brody Neighborhood that students chose to reside in (*Note: Bailey Hall is within the Brody Neighborhood), importance of availability of nature based co-curricular activities and PREV_YEAR_HALL_RES which indicates if the student lived in the same hall in the previous year as well.

RESULTS:

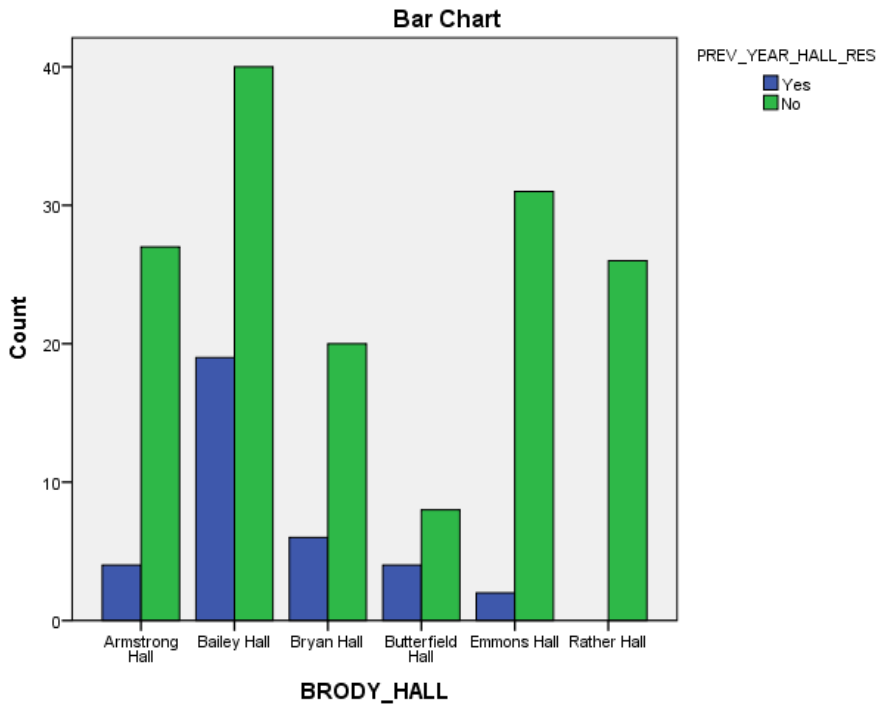
The Chi Square tests for the association between the choice of halls in Brody Neighborhood and residence in the previous years is statistically significant (p=0.002). Phi and Cramer' V tests also show high statistical significance (p=0.02) **implying that the choice of halls in Brody Neighborhood is highly correlated with residence in the previous years.**

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.214[a]	5	.002
Likelihood Ratio	23.852	5	.000
Linear-by-Linear Association	.147	1	.701
N of Valid Cases	187		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.321	.002
	Cramer's V	.321	.002
N of Valid Cases		187	



In particular, 10.2% of residents in Bailey hall have lived in the same hall in the previous year. This percentage is higher compared to all other halls in Brody neighborhood. (2.1% in Armstrong Hall; 3.2% in Bryan Hall; and 2.1% in Butterfield Hall). For further details, see Table 2 in Appendix.

The Chi Square tests for the association between the choice of halls in Brody Neighborhood and importance of nature-based co-curricular activities is highly statistically significant (p=0.000). Phi and Cramer' V tests also show high statistical significance (p=0.000 for both) **implying that the choice of halls in Brody Neighborhood is highly correlated with importance of availability of nature-based co-curricular activities.**

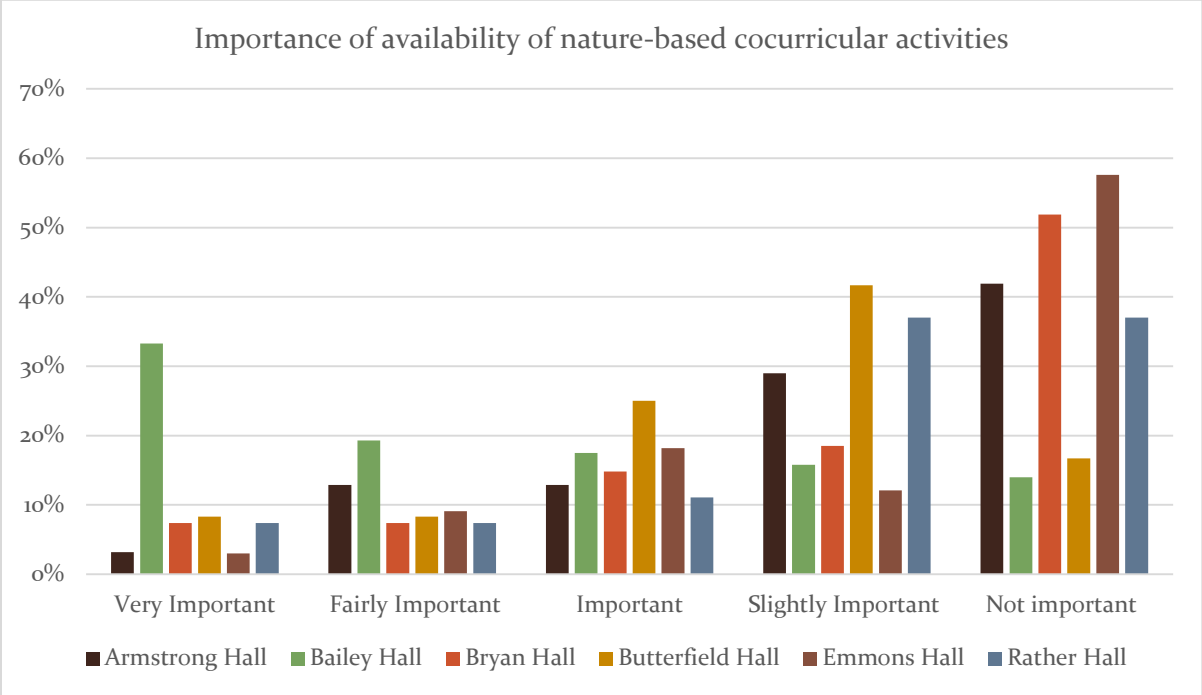
Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	51.528[a]	20	.000
Likelihood Ratio	50.867	20	.000
Linear-by-Linear Association	.034	1	.854
N of Valid Cases	187		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.525	.000
	Cramer's V	.262	.000
N of Valid Cases		187	

Again, for 33.3%, 19.3% and 17.5% of Bailey hall residents; availability of nature based co-curricular activities is 'very important' 'fairly important' and 'important' respectively in their choice of residence. These percentages are highest for Bailey as compared to other residence halls in Brody. The graph below shows the comparison of importance of nature based co-curricular activities between the residence halls in Brody Neighborhood.



RESEARCH QUESTION 3:

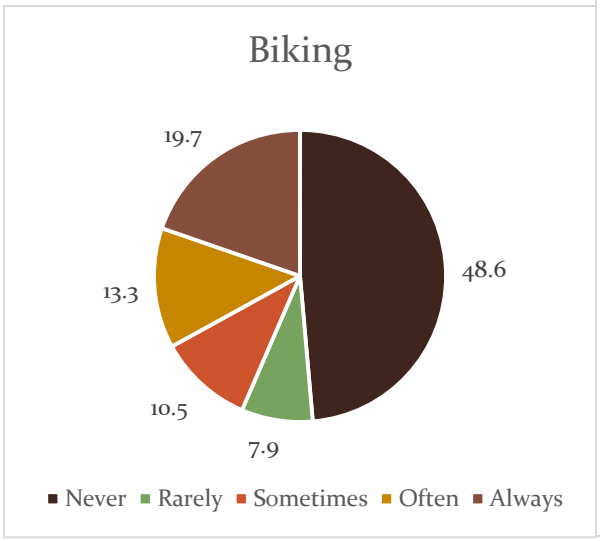
What are the sustainable actions students undertake on campus?

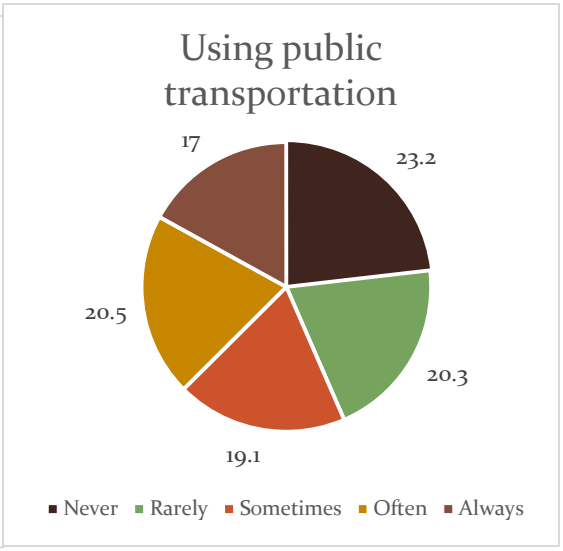
Analysis: Descriptive statistics of sustainability actions ie; practicing sustainability practices in the dorm; riding bikes on campus, using public transportation; recycling, conserving energy by switching off lights etc., limiting food waste, reducing plastic use; attending sustainability-based events on campus.

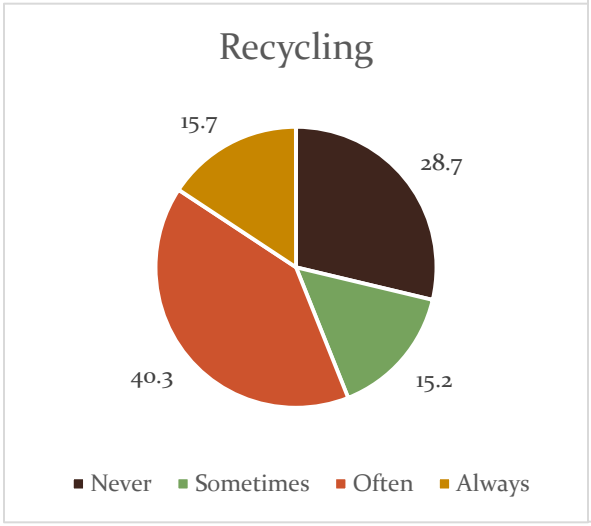
Results:

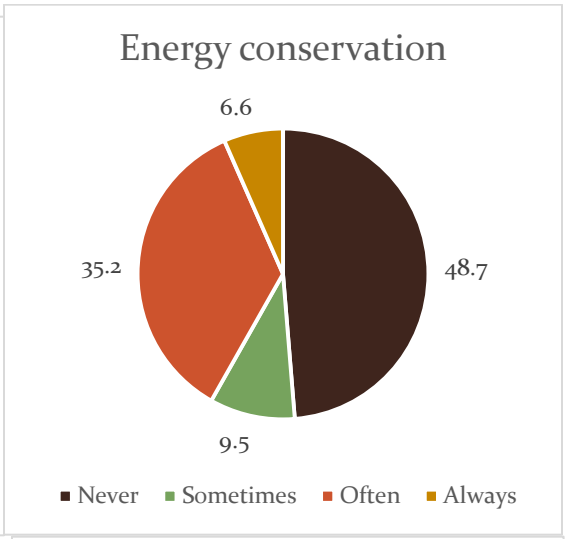
63.2% of respondents said that they practice sustainability in their dorms (n= 1246).

The pie charts below show patterns in the frequency of sustainable actions taken by survey respondents. Overall, recycling, energy conservation, limiting food waste and reducing plastic waste are undertaken more frequently than biking or use of public transport. See table 3 in Appendix for statistics.

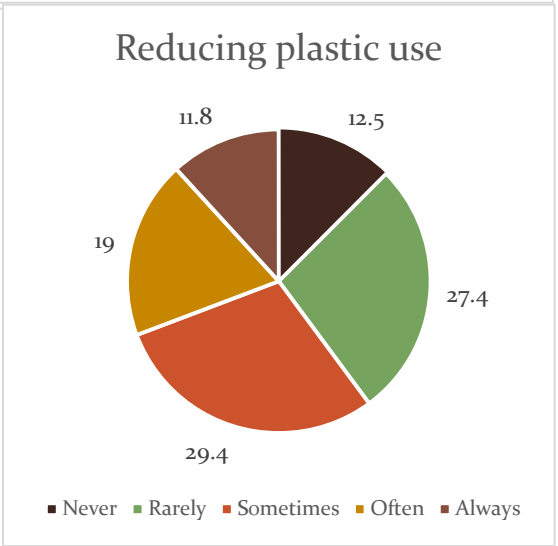

Biking
19.7
48.6
13.3
10.5
7.9
Never
Rarely
Sometimes
Often
Always


Using public transportation
17
23.2
20.5
20.3
19.1
Never
Rarely
Sometimes
Often
Always


Recycling
15.7
28.7
40.3
15.2
Never
Sometimes
Often
Always


Energy conservation
6.6
35.2
48.7
9.5
Never
Sometimes
Often
Always


Limiting food waste
3.2
23.6
36.5
36.7
Never
Sometimes
Often
Always


Reducing plastic use
11.8
12.5
19
27.4
29.4
Never
Rarely
Sometimes
Often
Always

RESEARCH QUESTION 4:

How important is it for students to have a more sustainable campus at MSU?

Analysis

MSU_EFFORT_IMPORTANCE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not important	91	2.6	3.2	3.2
	Slightly Important	312	8.8	11.0	14.2
	Important	733	20.8	25.8	39.9
	Fairly important	670	19.0	23.6	63.5
	Very important	1038	29.4	36.5	100.0
	Total	2844	80.6	100.0	
Missing	System	685	19.4		
Total		3529	100.0		

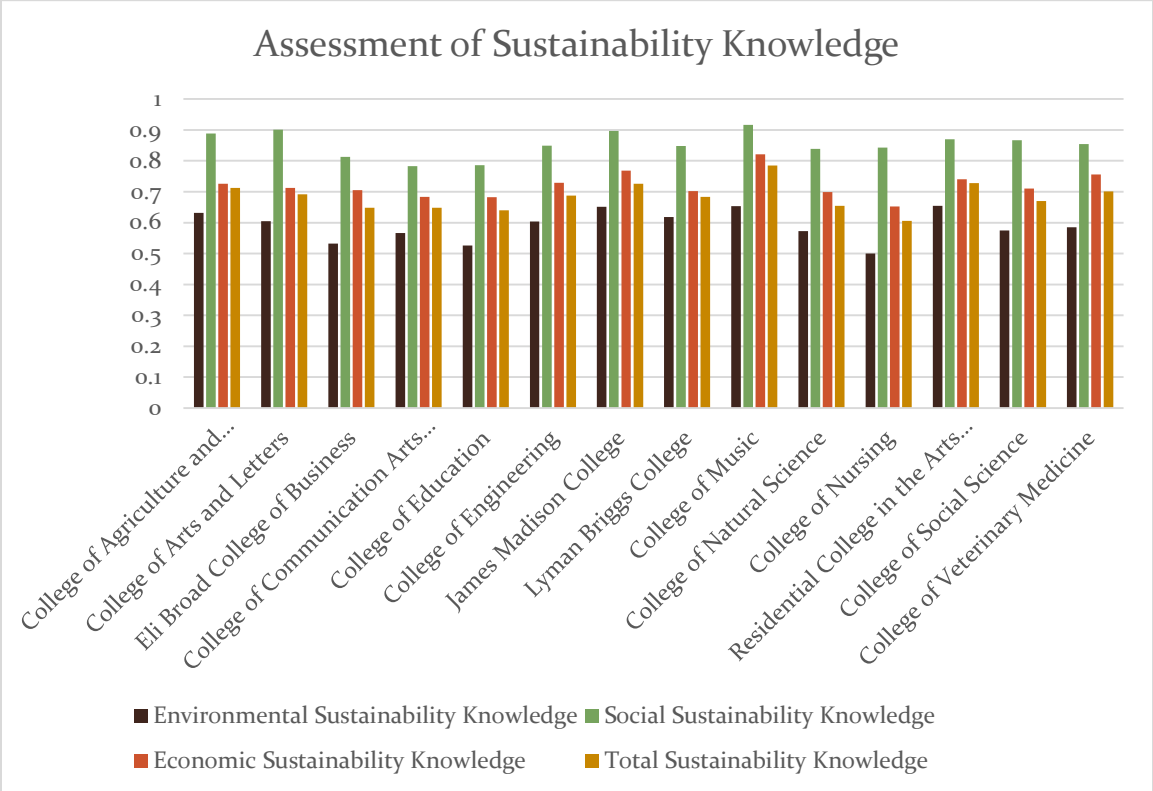
An overwhelming 85.9% of surveyed respondents reported that MSU sustainability efforts are either important, fairly important or very important in their choice of residential neighborhoods. About 36.5% of the students rated MSU sustainability efforts as 'very' important in their residential choices.

ADDITIONAL ANALYSIS

Are there differences in sustainability knowledge among students from different colleges within MSU?

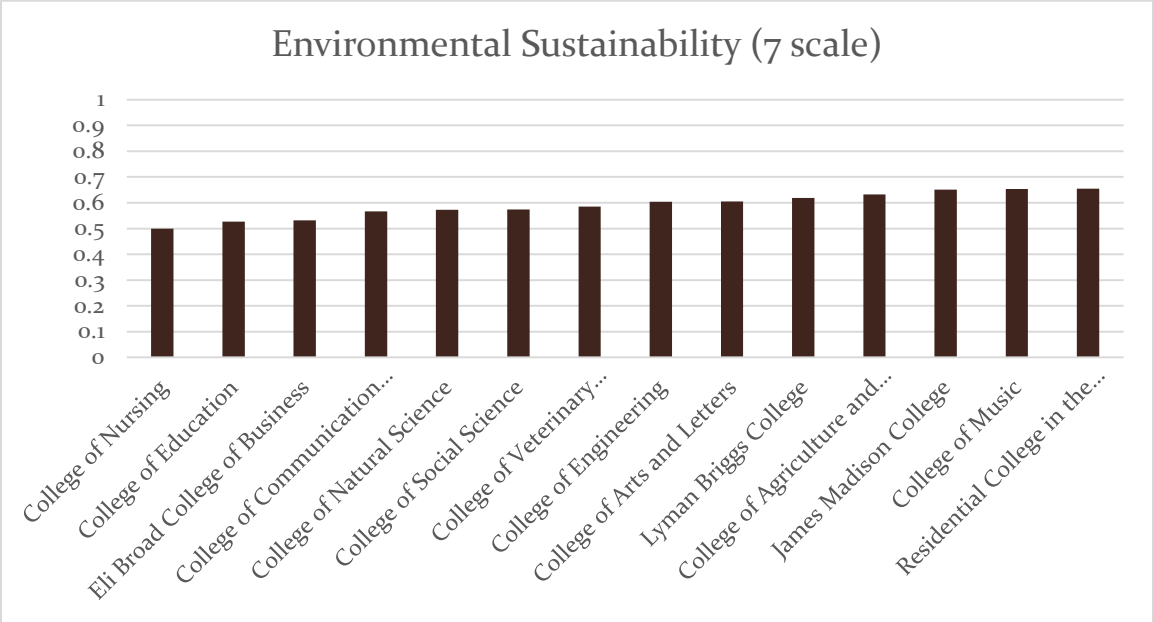
Analysis: Analysis of Variance (ANOVA) tests

According to the ANOVA tests, the difference between colleges is highly statistically significant between for environmental sustainability knowledge scores (7 scale) (p=0.000); social sustainability knowledge scores (p=0.001), economic sustainability knowledge scores (6 scale) (p=0.041) , total sustainability knowledge (p=0.000) and the Sustainability Attitude scores (p=0.000) (See Table 4 in Appendix). The graph below show the differences between environmental, social and environmental sustainability by college.



Environmental Sustainability Scores:

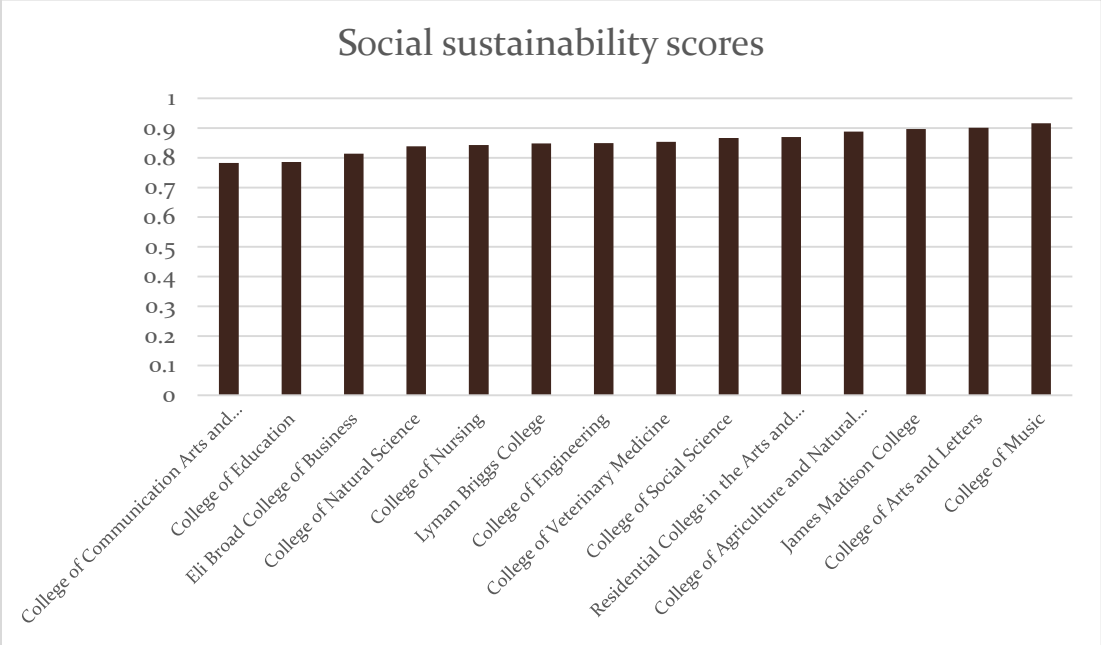
The lowest environmental sustainability score was for college of nursing (Mean= 0.6) and the highest score was for Residential College in the Arts and Humanities (Mean =0.6541).



Environmental Sustainability Scores		
	N	Mean
College of Nursing	52	0.5
College of Education	114	0.5263
Eli Broad College of Business	253	0.5319
College of Communication Arts and Sciences	113	0.5664
College of Natural Science	318	0.5723
College of Social Science	234	0.5745
College of Veterinary Medicine	21	0.585
College of Engineering	350	0.6041
College of Arts and Letters	90	0.6048
Lyman Briggs College	122	0.6183
College of Agriculture and Natural Resources	224	0.632
James Madison College	97	0.651
College of Music	14	0.6531
Residential College in the Arts and Humanities	19	0.6541

Social Sustainability Scores:

The lowest social sustainability score was for college of communication arts and sciences (Mean= 0.7826) and the highest score was for College of Music(Mean =0.9167).

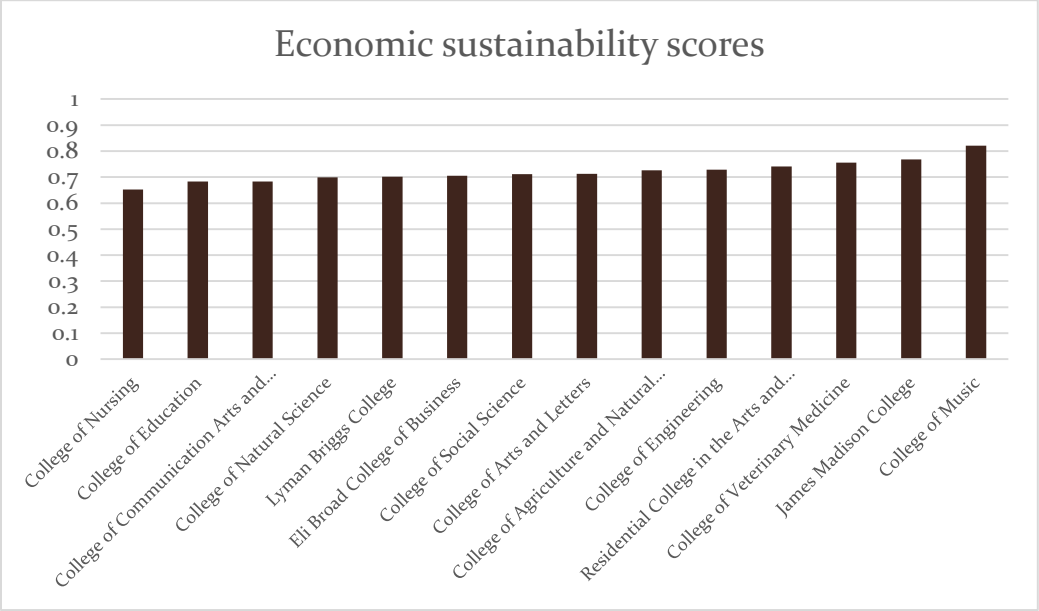


Social Sustainability scores	N	Mean
College of Communication Arts and Sciences	138	0.7826
College of Education	126	0.7857
Eli Broad College of Business	292	0.8134
College of Natural Science	373	0.8391
College of Nursing	67	0.8433
Lyman Briggs College	132	0.8485
College of Engineering	408	0.8493
College of Veterinary Medicine	24	0.8542
College of Social Science	277	0.8664
Residential College in the Arts and Humanities	23	0.8696
College of Agriculture and Natural Resources	246	0.8882
James Madison College	112	0.8973
College of Arts and Letters	91	0.9011

College of Music	18	0.9167

Economic Sustainability

The lowest economic sustainability score was for college of nursing (Mean= 0.6523) and the highest score was for College of Music (Mean =0.8214).

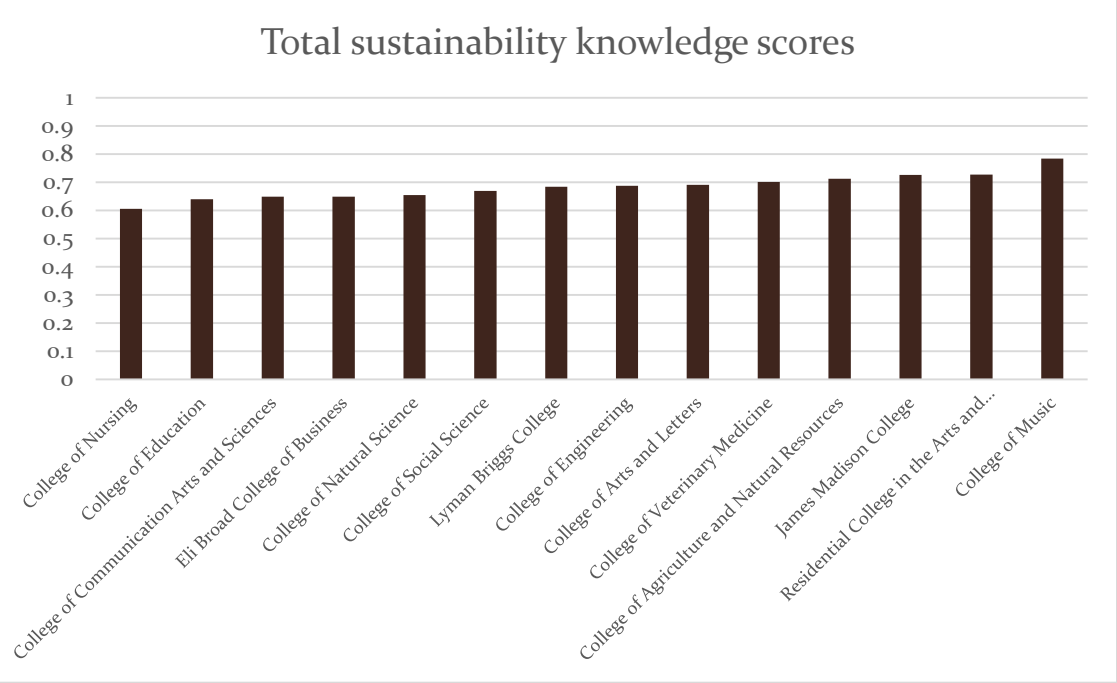


Economic Sustainability Scores (6 scale)	N	Mean
College of Nursing	36	0.6528
College of Education	73	0.6826
College of Communication Arts and Sciences	88	0.6837
College of Natural Science	253	0.6989
Lyman Briggs College	99	0.702
Eli Broad College of Business	222	0.7057
College of Social Science	196	0.7109
College of Arts and Letters	69	0.7126
College of Agriculture and Natural Resources	187	0.7264
College of Engineering	305	0.729
Residential College in the Arts and Humanities	18	0.7407
College of Veterinary Medicine	15	0.7556
James Madison College	87	0.7682

College of Music	14	0.8214

Total Sustainability Knowledge scores

The lowest economic sustainability score was for College of nursing (Mean= 0.6054) and the highest score was for College of Music (Mean =0.7847).

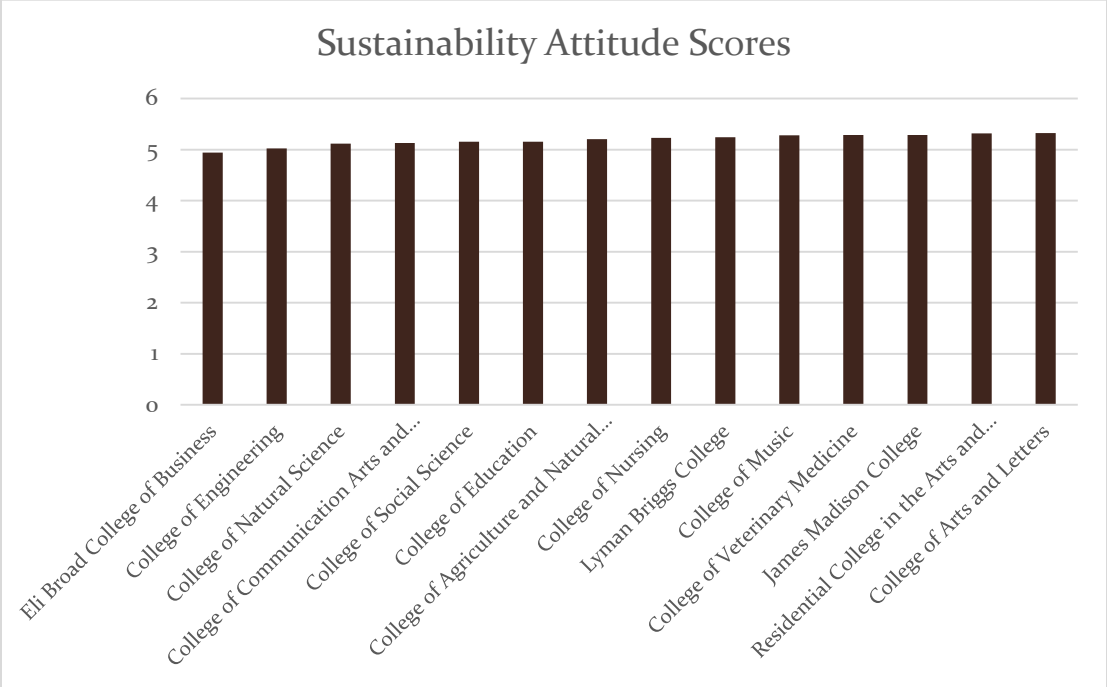


Total Sustainability Knowledge Scores	N	Mean
College of Nursing	34	0.6054
College of Education	62	0.6398
College of Communication Arts and Sciences	73	0.6484
Eli Broad College of Business	186	0.6487
College of Natural Science	208	0.6546
College of Social Science	163	0.6697
Lyman Briggs College	82	0.6839
College of Engineering	267	0.6879
College of Arts and Letters	57	0.6915
College of Veterinary Medicine	12	0.7014
College of Agriculture and Natural Resources	159	0.7128

James Madison College	74	0.7264
Residential College in the Arts and Humanities	15	0.7278
College of Music	12	0.7847

Are there differences in sustainability attitudes among students from difference colleges within MUS?

The lowest sustainability attitude score was for Eli Broad College of Business (Mean= 4.9448) and the highest score was for College of Arts and Letters (Mean = 5.3244).



Sustainability Attitude Scale	N	Mean
Eli Broad College of Business	356	4.9448
College of Engineering	465	5.0201
College of Natural Science	436	5.12
College of Communication Arts and Sciences	181	5.1305
College of Social Science	326	5.155
College of Education	162	5.1553
College of Agriculture and Natural Resources	277	5.2032
College of Nursing	82	5.2297
Lyman Briggs College	162	5.2418

College of Music	22	5.281
College of Veterinary Medicine	32	5.2855
James Madison College	120	5.2879
Residential College in the Arts and Humanities	29	5.3166
College of Arts and Letters	117	5.3244

Appendix

Table 1:

Parameter Estimates

NEIGHBORHOOD[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B) Lower Bound	Upper Bound
Brody	Intercept	1.048	.399	6.893	1	.009			
	[PUBLIC_TRANS_ACCESS=1]	-.447	.310	2.081	1	.149	.639	.348	1.174
	[PUBLIC_TRANS_ACCESS=2]	-.519	.320	2.634	1	.105	.595	.318	1.114
	[PUBLIC_TRANS_ACCESS=3]	-.423	.334	1.607	1	.205	.655	.340	1.260
	[PUBLIC_TRANS_ACCESS=4]	-.880	.379	5.383	1	.020	.415	.197	.872
	[PUBLIC_TRANS_ACCESS=5]	0[b]	.	.	0	.	.	.	.
	[RECYC_FACILITY_ACCESS=1]	-.187	.407	.212	1	.645	.829	.373	1.842
	[RECYC_FACILITY_ACCESS=2]	-.364	.378	.925	1	.336	.695	.331	1.459
	[RECYC_FACILITY_ACCESS=3]	-.357	.357	.999	1	.318	.700	.348	1.409
	[RECYC_FACILITY_ACCESS=4]	.103	.361	.082	1	.775	1.109	.546	2.251
	[RECYC_FACILITY_ACCESS=5]	0[b]	.	.	0	.	.	.	.
	[COCURR_ACTIVITY_AVAIL=1]	-1.412	.450	9.857	1	.002	.244	.101	.588
	[COCURR_ACTIVITY_AVAIL=2]	-.861	.451	3.650	1	.056	.423	.175	1.023
	[COCURR_ACTIVITY_AVAIL=3]	-1.134	.462	6.022	1	.014	.322	.130	.796
	[COCURR_ACTIVITY_AVAIL=4]	-.618	.475	1.694	1	.193	.539	.212	1.367
	[COCURR_ACTIVITY_AVAIL=5]	0[b]	.	.	0	.	.	.	.
	[MSU_EFFORT_IMPORTANCE=1]	-.086	.592	.021	1	.885	.918	.287	2.931
	[MSU_EFFORT_IMPORTANCE=2]	-.176	.365	.233	1	.629	.838	.410	1.715
	[MSU_EFFORT_IMPORTANCE=3]	.363	.276	1.730	1	.188	1.438	.837	2.470
	[MSU_EFFORT_IMPORTANCE=4]	-.247	.273	.816	1	.366	.781	.457	1.335
	[MSU_EFFORT_IMPORTANCE=5]	0[b]	.	.	0	.	.	.	.
North	Intercept	-.018	.460	.002	1	.969			
	[PUBLIC_TRANS_ACCESS=1]	.097	.304	.102	1	.749	1.102	.607	1.999
	[PUBLIC_TRANS_ACCESS=2]	.315	.309	1.044	1	.307	1.371	.749	2.509

	[PUBLIC_TRANS_ACCESS=3]	.186	.330	.318	1	.573	1.204	.631	2.297
	[PUBLIC_TRANS_ACCESS=4]	.161	.344	.219	1	.640	1.175	.599	2.304
	[PUBLIC_TRANS_ACCESS=5]	0[b]	.	.	0	.	.	.	.
	[RECYC_FACILITY_ACCESS=1]	.044	.347	.016	1	.900	1.045	.529	2.064
	[RECYC_FACILITY_ACCESS=2]	-.427	.333	1.644	1	.200	.652	.339	1.253
	[RECYC_FACILITY_ACCESS=3]	-.386	.322	1.435	1	.231	.680	.362	1.278
	[RECYC_FACILITY_ACCESS=4]	-.398	.348	1.312	1	.252	.672	.340	1.327
	[RECYC_FACILITY_ACCESS=5]	0[b]	.	.	0	.	.	.	.
	[COCURR_ACTIVITY_AVAIL=1]	.154	.475	.105	1	.746	1.166	.460	2.958
	[COCURR_ACTIVITY_AVAIL=2]	.367	.483	.575	1	.448	1.443	.559	3.721
	[COCURR_ACTIVITY_AVAIL=3]	-.085	.494	.030	1	.863	.918	.349	2.419
	[COCURR_ACTIVITY_AVAIL=4]	.041	.522	.006	1	.938	1.041	.375	2.896
	[COCURR_ACTIVITY_AVAIL=5]	0[b]	.	.	0	.	.	.	.
	[MSU_EFFORT_IMPORTANCE=1]	-.539	.461	1.367	1	.242	.583	.236	1.440
	[MSU_EFFORT_IMPORTANCE=2]	-.627	.296	4.476	1	.034	.534	.299	.955
	[MSU_EFFORT_IMPORTANCE=3]	-.144	.238	.365	1	.546	.866	.543	1.382
	[MSU_EFFORT_IMPORTANCE=4]	-.358	.232	2.379	1	.123	.699	.444	1.102
	[MSU_EFFORT_IMPORTANCE=5]	0[b]	.	.	0	.	.	.	.
East	Intercept	.811	.406	3.992	1	.046			
	[PUBLIC_TRANS_ACCESS=1]	-1.049	.269	15.263	1	.000	.350	.207	.593
	[PUBLIC_TRANS_ACCESS=2]	-.661	.269	6.022	1	.014	.516	.305	.875
	[PUBLIC_TRANS_ACCESS=3]	-.252	.276	.833	1	.361	.777	.453	1.335
	[PUBLIC_TRANS_ACCESS=4]	-.471	.294	2.563	1	.109	.624	.351	1.111
	[PUBLIC_TRANS_ACCESS=5]	0[b]	.	.	0	.	.	.	.
	[RECYC_FACILITY_ACCESS=1]	-.021	.339	.004	1	.951	.979	.504	1.901
	[RECYC_FACILITY_ACCESS=2]	-.506	.322	2.472	1	.116	.603	.321	1.133
	[RECYC_FACILITY_ACCESS=3]	-.155	.303	.264	1	.607	.856	.473	1.549
	[RECYC_FACILITY_ACCESS=4]	-.076	.318	.058	1	.810	.927	.497	1.727

	[RECYC_FACILITY_ACCESS=5]	0[b]	.	.	0	.	.	.	.
	[COCURR_ACTIVITY_AVAIL=1]	-.040	.434	.009	1	.926	.961	.411	2.247
	[COCURR_ACTIVITY_AVAIL=2]	.017	.443	.001	1	.969	1.017	.427	2.422
	[COCURR_ACTIVITY_AVAIL=3]	-.200	.447	.200	1	.654	.819	.341	1.966
	[COCURR_ACTIVITY_AVAIL=4]	.240	.465	.266	1	.606	1.271	.511	3.160
	[COCURR_ACTIVITY_AVAIL=5]	0[b]	.	.	0	.	.	.	.
	[MSU_EFFORT_IMPORTANCE=1]	-.027	.456	.004	1	.952	.973	.398	2.377
	[MSU_EFFORT_IMPORTANCE=2]	-.121	.284	.182	1	.670	.886	.508	1.546
	[MSU_EFFORT_IMPORTANCE=3]	.286	.229	1.566	1	.211	1.331	.850	2.084
	[MSU_EFFORT_IMPORTANCE=4]	-.194	.224	.753	1	.386	.823	.531	1.277
	[MSU_EFFORT_IMPORTANCE=5]	0[b]	.	.	0	.	.	.	.
River Trail	Intercept	.853	.406	4.418	1	.036			
	[PUBLIC_TRANS_ACCESS=1]	-.938	.308	9.267	1	.002	.391	.214	.716
	[PUBLIC_TRANS_ACCESS=2]	-.320	.303	1.114	1	.291	.726	.401	1.315
	[PUBLIC_TRANS_ACCESS=3]	-.504	.331	2.327	1	.127	.604	.316	1.155
	[PUBLIC_TRANS_ACCESS=4]	-.154	.325	.223	1	.637	.858	.453	1.623
	[PUBLIC_TRANS_ACCESS=5]	0[b]	.	.	0	.	.	.	.
	[RECYC_FACILITY_ACCESS=1]	.197	.378	.271	1	.603	1.217	.580	2.554
	[RECYC_FACILITY_ACCESS=2]	-.655	.374	3.068	1	.080	.520	.250	1.081
	[RECYC_FACILITY_ACCESS=3]	-.169	.341	.244	1	.621	.845	.433	1.648
	[RECYC_FACILITY_ACCESS=4]	-.001	.351	.000	1	.998	.999	.502	1.988
	[RECYC_FACILITY_ACCESS=5]	0[b]	.	.	0	.	.	.	.
	[COCURR_ACTIVITY_AVAIL=1]	-.584	.441	1.752	1	.186	.558	.235	1.324
	[COCURR_ACTIVITY_AVAIL=2]	-.574	.455	1.596	1	.206	.563	.231	1.372
	[COCURR_ACTIVITY_AVAIL=3]	-.858	.465	3.399	1	.065	.424	.170	1.056
	[COCURR_ACTIVITY_AVAIL=4]	-.482	.481	1.004	1	.316	.618	.241	1.585
	[COCURR_ACTIVITY_AVAIL=5]	0[b]	.	.	0	.	.	.	.
	[MSU_EFFORT_IMPORTANCE=1]	.177	.468	.143	1	.705	1.194	.477	2.991

	[MSU_EFFORT_IMPORTANCE=2]	-.404	.328	1.521	1	.218	.667	.351	1.269
	[MSU_EFFORT_IMPORTANCE=3]	-.247	.271	.830	1	.362	.781	.459	1.329
	[MSU_EFFORT_IMPORTANCE=4]	-.161	.247	.425	1	.515	.852	.525	1.381
	[MSU_EFFORT_IMPORTANCE=5]	0[b]	.	.	0	.	.	.	.

Table 2 : CROSS TABS BETWEEB BRODY HALLS AND PREVIOUS YEAR RESIDENCE

Crosstab

			PREV_YEAR_HALL_RES		
			Yes	No	Total
BRODY_HALL	Armstrong Hall	Count	4	27	31
		% within BRODY_HALL	12.9%	87.1%	100.0%
		% within PREV_YEAR_HALL_RES	11.4%	17.8%	16.6%
		% of Total	2.1%	14.4%	16.6%
	Bailey Hall	Count	19	40	59
		% within BRODY_HALL	32.2%	67.8%	100.0%
		% within PREV_YEAR_HALL_RES	54.3%	26.3%	31.6%
		% of Total	10.2%	21.4%	31.6%
	Bryan Hall	Count	6	20	26
		% within BRODY_HALL	23.1%	76.9%	100.0%
		% within PREV_YEAR_HALL_RES	17.1%	13.2%	13.9%
		% of Total	3.2%	10.7%	13.9%
	Butterfield Hall	Count	4	8	12
		% within BRODY_HALL	33.3%	66.7%	100.0%
		% within PREV_YEAR_HALL_RES	11.4%	5.3%	6.4%
		% of Total	2.1%	4.3%	6.4%
	Emmons Hall	Count	2	31	33
		% within BRODY_HALL	6.1%	93.9%	100.0%
		% within PREV_YEAR_HALL_RES	5.7%	20.4%	17.6%
		% of Total	1.1%	16.6%	17.6%
	Rather Hall	Count	0	26	26
		% within BRODY_HALL	0.0%	100.0%	100.0%
		% within PREV_YEAR_HALL_RES	0.0%	17.1%	13.9%
		% of Total	0.0%	13.9%	13.9%
Total		Count	35	152	187
		% within BRODY_HALL	18.7%	81.3%	100.0%
		% within PREV_YEAR_HALL_RES	100.0%	100.0%	100.0%
		% of Total	18.7%	81.3%	100.0%

Table 3: Descriptive Statistics Sustainability Actions

DORM_SUS_PRACTICE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	788	22.3	63.2	63.2
	No	458	13.0	36.8	100.0
	Total	1246	35.3	100.0	
Missing	System	2283	64.7		
Total		3529	100.0		

BIKE_ACTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1353	38.3	48.6	48.6
	Rarely	219	6.2	7.9	56.5
	Sometimes	291	8.2	10.5	67.0
	Often	371	10.5	13.3	80.3
	Always	548	15.5	19.7	100.0
	Total	2782	78.8	100.0	
Missing	System	747	21.2		
Total		3529	100.0		

PUBTRANS_ACTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	657	18.6	23.2	23.2
	Rarely	575	16.3	20.3	43.4
	Sometimes	541	15.3	19.1	62.5
	Often	582	16.5	20.5	83.0
	Always	482	13.7	17.0	100.0
	Total	2837	80.4	100.0	
Missing	System	692	19.6		
Total		3529	100.0		

RECYC_ACTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	814	23.1	28.7	28.7
	Sometimes	432	12.2	15.2	44.0
	Often	1143	32.4	40.3	84.3
	Always	446	12.6	15.7	100.0
	Total	2835	80.3	100.0	
Missing	System	694	19.7		
Total		3529	100.0		

ENERGY_CONSERV_ACTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1367	38.7	48.7	48.7
	Sometimes	266	7.5	9.5	58.2
	Often	987	28.0	35.2	93.4
	Always	185	5.2	6.6	100.0
	Total	2805	79.5	100.0	
Missing	System	724	20.5		
Total		3529	100.0		

FOOD_WASTE_ACTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	91	2.6	3.2	3.2
	Sometimes	670	19.0	23.6	26.8
	Often	1045	29.6	36.7	63.5
	Always	1038	29.4	36.5	100.0
	Total	2844	80.6	100.0	
Missing	System	685	19.4		
Total		3529	100.0		

PLASTIC_REDUC_ACTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	355	10.1	12.5	12.5
	Rarely	776	22.0	27.4	39.9
	Sometimes	832	23.6	29.4	69.3
	Often	537	15.2	19.0	88.2
	Always	333	9.4	11.8	100.0
	Total	2833	80.3	100.0	
Missing	System	696	19.7		
Total		3529	100.0		

SUS_EVENT_CAMPUS_ACTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1095	31.0	38.8	38.8
	Rarely	882	25.0	31.3	70.1
	Sometimes	610	17.3	21.6	91.7
	Often	161	4.6	5.7	97.4
	Always	74	2.1	2.6	100.0

	Total	2822	80.0	100.0	
Missing	System	707	20.0		
Total		3529	100.0		

TABLE 3: ASK SAS analysis of variance by college

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
ENVSUS4 env sus scale OSU1b OSU2b OSY5b UMD7b	College of Agriculture and Natural Resources	255	.7618	.23657	.01481	.7326	.7909	.00	1.00
	College of Arts and Letters	99	.7424	.23270	.02339	.6960	.7888	.00	1.00
	Eli Broad College of Business	299	.6162	.28687	.01659	.5836	.6489	.00	1.00
	College of Communication Arts and Sciences	128	.6699	.26608	.02352	.6234	.7165	.00	1.00
	College of Education	136	.6140	.28032	.02404	.5664	.6615	.00	1.00
	College of Engineering	396	.7266	.24954	.01254	.7020	.7513	.00	1.00
	James Madison College	106	.7807	.20903	.02030	.7404	.8209	.25	1.00
	Lyman Briggs College	139	.7428	.21691	.01840	.7064	.7792	.00	1.00
	College of Music	16	.8438	.22127	.05532	.7258	.9617	.25	1.00
	College of Natural Science	392	.6601	.26769	.01352	.6335	.6867	.00	1.00
	College of Nursing	63	.5516	.27371	.03448	.4827	.6205	.00	1.00
	Residential College in the Arts and Humanities	23	.7609	.25538	.05325	.6504	.8713	.00	1.00
	College of Social Science	276	.6766	.26252	.01580	.6455	.7077	.00	1.00
	College of Veterinary Medicine	27	.6481	.25248	.04859	.5483	.7480	.25	1.00
	Total	2355	.6895	.26294	.00542	.6789	.7001	.00	1.00
ENVSUS7 environmental scale OSU1b, OSU2b, OSU5b, UMD7b, OSU12b, OSU16b, UMD13b	College of Agriculture and Natural Resources	224	.6320	.17344	.01159	.6092	.6549	.14	1.00
	College of Arts and Letters	90	.6048	.16733	.01764	.5697	.6398	.14	1.00
	Eli Broad College of Business	253	.5319	.19356	.01217	.5079	.5559	.00	1.00
	College of Communication Arts and Sciences	113	.5664	.18103	.01703	.5326	.6001	.00	1.00

	College of Education	114	.5263	.17138	.01605	.4945	.5581	.14	.86
	College of Engineering	350	.6041	.17163	.00917	.5860	.6221	.00	1.00
	James Madison College	97	.6510	.15148	.01538	.6204	.6815	.29	.86
	Lyman Briggs College	122	.6183	.16977	.01537	.5878	.6487	.00	1.00
	College of Music	14	.6531	.19178	.05126	.5423	.7638	.14	.86
	College of Natural Science	318	.5723	.19122	.01072	.5512	.5934	.00	.86
	College of Nursing	52	.5000	.19904	.02760	.4446	.5554	.00	.86
	Residential College in the Arts and Humanities	19	.6541	.17377	.03986	.5704	.7379	.14	.86
	College of Social Science	234	.5745	.17024	.01113	.5526	.5964	.00	1.00
	College of Veterinary Medicine	21	.5850	.15587	.03401	.5141	.6560	.29	.86
	Total	2021	.5843	.18136	.00403	.5764	.5922	.00	1.00
SOCSUS2 Social Sustain OSU7b, OSU8b	College of Agriculture and Natural Resources	246	.8882	.23190	.01479	.8591	.9173	.00	1.00
	College of Arts and Letters	91	.9011	.20027	.02099	.8594	.9428	.50	1.00
	Eli Broad College of Business	292	.8134	.29062	.01701	.7799	.8468	.00	1.00
	College of Communication Arts and Sciences	138	.7826	.33065	.02815	.7270	.8383	.00	1.00
	College of Education	126	.7857	.30613	.02727	.7317	.8397	.00	1.00
	College of Engineering	408	.8493	.26684	.01321	.8233	.8752	.00	1.00
	James Madison College	112	.8973	.22399	.02117	.8554	.9393	.00	1.00
	Lyman Briggs College	132	.8485	.26167	.02278	.8034	.8935	.00	1.00
	College of Music	18	.9167	.19174	.04519	.8213	1.0120	.50	1.00
	College of Natural Science	373	.8391	.27848	.01442	.8108	.8675	.00	1.00
	College of Nursing	67	.8433	.24938	.03047	.7825	.9041	.00	1.00
	Residential College in the Arts and Humanities	23	.8696	.27041	.05638	.7526	.9865	.00	1.00
	College of Social Science	277	.8664	.24493	.01472	.8375	.8954	.00	1.00
	College of Veterinary Medicine	24	.8542	.23215	.04739	.7561	.9522	.50	1.00
	Total	2327	.8468	.26806	.00556	.8359	.8577	.00	1.00
ECONSUS4 econ sustain OSU14b,	College of Agriculture and Natural Resources	204	.6520	.23971	.01678	.6189	.6851	.00	1.00

OSU15b, OSU12b, OSU16b	College of Arts and Letters	83	.6265	.20051	.02201	.5827	.6703	.00	1.00
	Eli Broad College of Business	255	.6363	.22690	.01421	.6083	.6643	.00	1.00
	College of Communication Arts and Sciences	106	.6061	.24868	.02415	.5582	.6540	.00	1.00
	College of Education	101	.5396	.22565	.02245	.4951	.5841	.00	1.00
	College of Engineering	345	.6442	.23432	.01262	.6194	.6690	.00	1.00
	James Madison College	96	.7005	.21951	.02240	.6560	.7450	.25	1.00
	Lyman Briggs College	106	.6085	.25359	.02463	.5597	.6573	.00	1.00
	College of Music	14	.7500	.16984	.04539	.6519	.8481	.50	1.00
	College of Natural Science	291	.6117	.24119	.01414	.5839	.6395	.00	1.00
	College of Nursing	44	.5455	.27105	.04086	.4630	.6279	.00	1.00
	Residential College in the Arts and Humanities	19	.6711	.18732	.04297	.5808	.7613	.25	1.00
	College of Social Science	217	.6256	.24071	.01634	.5934	.6578	.00	1.00
	College of Veterinary Medicine	18	.6389	.21390	.05042	.5325	.7453	.25	1.00
	Total	1899	.6280	.23677	.00543	.6173	.6386	.00	1.00
ECONSUS6 Econ Sus OSU14b, OSU15b, OSU12b, OSU16b, OSU12b, UMD6b	College of Agriculture and Natural Resources	187	.7264	.20558	.01503	.6967	.7560	.00	1.00
	College of Arts and Letters	69	.7126	.18276	.02200	.6687	.7565	.00	1.00
	Eli Broad College of Business	222	.7057	.20299	.01362	.6789	.7326	.00	1.00
	College of Communication Arts and Sciences	88	.6837	.20222	.02156	.6409	.7266	.17	1.00
	College of Education	73	.6826	.19477	.02280	.6372	.7281	.17	1.00
	College of Engineering	305	.7290	.20219	.01158	.7062	.7517	.00	1.00
	James Madison College	87	.7682	.17117	.01835	.7317	.8047	.33	1.00
	Lyman Briggs College	99	.7020	.21727	.02184	.6587	.7454	.00	1.00
	College of Music	14	.8214	.10262	.02743	.7622	.8807	.67	1.00
	College of Natural Science	253	.6989	.20614	.01296	.6734	.7245	.00	1.00
	College of Nursing	36	.6528	.23017	.03836	.5749	.7307	.17	1.00
	Residential College in the Arts and Humanities	18	.7407	.18277	.04308	.6498	.8316	.33	1.00
	College of Social Science	196	.7109	.19619	.01401	.6832	.7385	.00	1.00

	College of Veterinary Medicine	15	.7556	.15258	.03940	.6711	.8401	.50	1.00
	Total	1662	.7137	.20103	.00493	.7040	.7234	.00	1.00
TOTALSUS all ASK Items scaled together	College of Agriculture and Natural Resources	159	.7128	.15623	.01239	.6883	.7373	.25	1.00
	College of Arts and Letters	57	.6915	.13544	.01794	.6556	.7275	.25	.92
	Eli Broad College of Business	186	.6487	.16524	.01212	.6248	.6726	.17	.92
	College of Communication Arts and Sciences	73	.6484	.17637	.02064	.6073	.6896	.17	.92
	College of Education	62	.6398	.14297	.01816	.6035	.6761	.25	.92
	College of Engineering	267	.6879	.15688	.00960	.6690	.7068	.17	.92
	James Madison College	74	.7264	.13966	.01624	.6940	.7587	.33	.92
	Lyman Briggs College	82	.6839	.16705	.01845	.6472	.7206	.33	1.00
	College of Music	12	.7847	.06608	.01908	.7427	.8267	.67	.92
	College of Natural Science	208	.6546	.17002	.01179	.6314	.6779	.08	.92
	College of Nursing	34	.6054	.16194	.02777	.5489	.6619	.25	.92
	Residential College in the Arts and Humanities	15	.7278	.11980	.03093	.6614	.7941	.50	.92
	College of Social Science	163	.6697	.14984	.01174	.6466	.6929	.25	1.00
	College of Veterinary Medicine	12	.7014	.10928	.03155	.6320	.7708	.58	.83
	Total	1404	.6756	.15955	.00426	.6673	.6840	.08	1.00
Mean of all SAS items	College of Agriculture and Natural Resources	277	5.2032	.60883	.03658	5.1312	5.2752	2.18	6.00
	College of Arts and Letters	117	5.3244	.48058	.04443	5.2364	5.4124	3.18	6.00
	Eli Broad College of Business	356	4.9448	.71317	.03780	4.8705	5.0192	1.00	6.00
	College of Communication Arts and Sciences	181	5.1305	.62845	.04671	5.0383	5.2226	3.18	6.00
	College of Education	162	5.1553	.48795	.03834	5.0796	5.2310	3.64	6.00
	College of Engineering	465	5.0201	.67360	.03124	4.9587	5.0814	1.82	6.00
	James Madison College	120	5.2879	.69250	.06322	5.1627	5.4130	1.00	6.00
	Lyman Briggs College	162	5.2418	.52845	.04152	5.1598	5.3238	3.18	6.00
	College of Music	22	5.2810	.66326	.14141	4.9869	5.5751	3.55	6.00
	College of Natural Science	436	5.1200	.66534	.03186	5.0573	5.1826	1.82	6.00

	College of Nursing	82	5.2297	.52822	.05833	5.1136	5.3457	3.90	6.00
	Residential College in the Arts and Humanities	29	5.3166	.53814	.09993	5.1119	5.5213	3.64	6.00
	College of Social Science	326	5.1550	.62774	.03477	5.0866	5.2234	1.00	6.00
	College of Veterinary Medicine	32	5.2855	.41851	.07398	5.1346	5.4364	4.45	6.00
	Total	2767	5.1274	.63912	.01215	5.1036	5.1512	1.00	6.00

ANOVA

		Sum of Squares	df	Mean Square	F
ENVSUS4 env sus scale OSU1b OSU2b OSY5b UMD7b	Between Groups	7.989	13	.615	9.296
	Within Groups	154.763	2341	.066	
	Total	162.752	2354		
ENVSUS7 environmental scale OSU1b, OSU2b, OSU5b, UMD7b, OSU12b, OSU16b, UMD13b	Between Groups	2.967	13	.228	7.217
	Within Groups	63.474	2007	.032	
	Total	66.441	2020		
SOCSUS2 Social Sustain OSU7b, OSU8b	Between Groups	2.575	13	.198	2.784
	Within Groups	164.559	2313	.071	
	Total	167.134	2326		
ECONSUS4 econ sustain OSU14b, OSU15b, OSU12b, OSU16b	Between Groups	2.235	13	.172	3.111
	Within Groups	104.170	1885	.055	
	Total	106.405	1898		
ECONSUS6 Econ Sus OSU14b, OSU15b, OSU12b, OSU16b, OSU12b, UMD6b	Between Groups	.929	13	.071	1.779
	Within Groups	66.200	1648	.040	
	Total	67.129	1661		
TOTALSUS all ASK Items scaled together	Between Groups	1.195	13	.092	3.701
	Within Groups	34.519	1390	.025	
	Total	35.714	1403		
Mean of all SAS items	Between Groups	32.177	13	2.475	6.208
	Within Groups	1097.652	2753	.399	
	Total	1129.830	2766		

Table 4 ANOVA

		Sig.
ENVSUS4 env sus scale OSU1b OSU2b OSY5b UMD7b	Between Groups	.000
	Within Groups	
	Total	
ENVSUS7 environmental scale OSU1b, OSU2b, OSU5b, UMD7b, OSU12b, OSU16b, UMD13b	Between Groups	.000
	Within Groups	
	Total	
SOCSUS2 Social Sustain OSU7b, OSU8b	Between Groups	.001
	Within Groups	

	Total	
ECONSUS4 econ sustain OSU14b, OSU15b, OSU12b, OSU16b	Between Groups	.000
	Within Groups	
	Total	
ECONSUS6 Econ Sus OSU14b, OSU15b, OSU12b, OSU16b, OSU12b, UMD6b	Between Groups	.041
	Within Groups	
	Total	
	Within Groups	
	Total	
	Within Groups	
	Total	