The Campus Effect:
Campus Built Environment and Active Transportation & Commuting

Student Project Leader: Katelyn Gilmore, MPH graduate student in Public Health Physical Activity

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Off-Campus Advisors: Dr. Melissa Bopp (Associate Professor at Pennsylvania State University) and Andrew Kaczynski (Assistant Professor at University of South Carolina)

Supervisory Department: Kinesiology

Introduction

At Kansas State University (KSU), recent campus development has drastically changed components of the built environment. Significant improvements are being implemented, such as new pedestrian malls, bicycle facilities, sidewalk and intersection improvements, larger parking structures, and greater public transportation availability. As a result, the transportation and commuting patterns of the KSU community will be affected. These changes can positively influence campus users to switch to sustainable means of active transportation; surveys and direct assessments of the built environment changes are necessary to gauge and document the most influential aspects of these changes to provide recommendations for the future.

Creating a sustainable campus environment can enhance active transportation behaviors among students, faculty and staffs. Active transportation refers to the use of other means besides individual motorized vehicles (i.e. walking, biking, and the use of public transportation). A sustainable campus environment also can promote the health of the KSU community. The participation in active transportation and commuting incorporates physical activity into one’s day which is linked to increased health benefits in adults. How supportive the built environment is for multi-modal transportation dictates community behaviors, specifically modes of active transportation.1

Entrance to pedestrian mall on the North side of campus.
The *K-State 2025 Master Plan* identifies changes to transportation, parking, and perimeter streets as interventions for managing multi-modal transportation\(^2\). Essentially the majority of parking and bus stops has been moved to the perimeter of campus and the new pedestrian mall and wider sidewalks and bike lanes have been implemented on the core campus area to enhance walkability and bikeability throughout the campus \(^2\). These changes extend efforts over the past couple years that led to KSU recently receiving the Bronze-Level Bicycle Friendly University award from the League of American Bicyclists, making KSU the only University in the Kansas with this award\(^3\). With the K-State 2025 master plan acting at the backbone for progress on campus and projects already underway, this project can guide the progress of the 2025 vision. The Campus Effect project will provide feedback on the sustainability of the changes and help predict how future campus development will impact behaviors in the KSU community.

**Project Description**

The Campus Effect is a thesis project that will be led by Katelyn Gilmore, a MPH student working within the Kinesiology department under the supervision of Associate Professor Katie M. Heinrich, PhD. This project will use a pre- and post-test design and assess the changes of active transportation and commuting behaviors among student, staff, and faculty after the major environmental improvements implemented on the KSU campus. The project will be two-fold: 1) direct assessment of the campus built environment and 2) survey active transportation and commuting patterns in student, staff, and faculty.

Direct assessments of the built environment will consist of students using walkability audit tools and assigning scores to all walkable segments throughout campus. The scores will then be used to provide a comparison point to survey responses from the community.
This project will use the 2008 study by Drs. Melissa Bopp and Andy Kaczynski as the baseline study for the Campus Effect project. Using the same survey instrument, and the results from the baseline study will provide a comparison point for how campus development since 2008 has influenced active transportation and commuting behaviors. It is a rare and unique for a built environment assessment project to have a baseline from several years ago. This study will provide a significant benefit since it allows for a natural study of the changes in transportation and commuting behaviors of the KSU community.

Due to current campus development and environment changes, this is a time sensitive project. Changes in the built environment are expected to continue over the next 10 years but this project will be able to evaluate the most influential aspects of current campus environment changes on the active transportation behaviors of students, faculty and staff. The goal is to use the findings to provide insight as to how campus development influences behaviors and what elements should be prioritized within the K-State 2025 plans.

Student Involvement

The Campus Effect project will be student led with support from other graduate and undergraduate students throughout the semester. While committee members serve as both mentors and contacts for the project, students will be responsible for completing project tasks. Graduate students with built environment and active transportation experience will advise the project leader on effective methods and tools to use for assessments and surveys. There will also be several undergraduate students hired to perform built environment assessments campus wide. Since this is a thesis project, Katelyn is responsible for the coordination of schedules and will complete tasks from survey creation, distribution, and analysis to aiding in the completion of the walkability/ bikeability assessments around campus under the guidance of her advisors. Incorporated with a thesis research, student involvement will be essential to the success of this project throughout the tasks from data collection to disseminating the findings to the KSU community.

Sustainability and Environmental Benefits to Kansas State University

The Campus Effect project highlights sustainability and environment benefits of the University by studying members of the entire KSU community in terms of their use of campus. Current sustainability efforts highlighted in the 2025 plan ignore the important contributions of active transportation, which will be realized due to the planned circulation improvements to increase pedestrian priority areas across campus. More specifically, policy and environmental changes based on the 2025 campus master plan, prioritize pedestrian movement while allowing flexible traffic access and coordination with local transit services. As the campus changes, the

Baseline Study: In 2008, M. Bopp and A. Kaczynski studied active commuting behaviors through surveys of students, faculty, and staff at Kansas State University. They both are supporters of The Campus Effect project to further the study of active transportation and commuting at KSU.
University needs to focus on the well-being of the students, staff, and faculty in order to stay competitive with other Universities. One way of staying competitive is to have a campus that is sustainable in terms of daily access use, and more specifically how the community is supported in their ability to be active day to day. Health, and even academic benefits are linked to daily physical activity, which is possible through sustainable active transportation. With the health benefits as the core advantage of active transportation, social and environmental sustainability is a co-benefit of investing in active transportation policy through creating a friendly and supportive environment for active transportation. This project will provide valuable information on which aspects of the built environment changes have been most influential in supporting and inhibiting active transportation behaviors. Project findings will allow for specific recommendations to further increase sustainability of active transportation across campus, allowing community members to be more active.

**Benefits to the KSU community**

The main benefit of the Campus Effect project is the ability to evaluate the progress of the Campus Master Plan and its implementation regarding walkability and bikability. Through the Campus Master Plan, KSU has already begun to improve the campus environment to make it more pedestrian- and bicycle-friendly. These changes have required KSU community members to alter their behaviors to efficiently get to work and school. As campus development progresses over the next 10 years (referring to K-State 2025) the community will continue to respond accordingly. By surveying the community through the Campus Effect project, the opinions and behaviors in response to the changes being made on campus will be documented along with the physical state of the active commuting environment itself. This mid-project evaluation of community member’s behaviors and the environment will allow for the current needs of the KSU community to be addressed instead of being lost until the completion of the K-State 2025 project. This type of project allows for an interdisciplinary awareness of the interplays among active transportation, health, and sustainability on K-State campus. As the KSU community is aware of the changes being made of campus, the Campus Effect project can provide invaluable feedback for administrators as they continue to make decisions for changes in the built environment of the KSU campus.

**Project Budget**

- Requesting $5,700
  - Incentivizing participants: $3,250
  - Student workers: $2,320
  - Marketing materials: $130

**Participation Incentives:**

In order to achieve a large response rate (approx. 1,000 people) for students, faculty, and staff, incentives should be provided for completion of the survey. 10% of the students (approx. 700) will be randomly selected to win $25 gift cards which totals to **$1,750**. 10% of the faculty and
staffs (approx. 300) will be randomly selected to win $50 gift cards which totals to $1,500. Those who complete the entire survey and submit within the allotted time window will be eligible to be randomly selected to receive the gift cards.

**Student workers:**

There would be several students from the Kinesiology and Landscape Architecture departments hired to assist in the data collection. They will receive compensation at the pay rate of $7.25/hour as identified in grant guidelines. The data collection period will last several weeks, since the entirety of the main campus would need to be assessed. All walkability audits will be completed in the month of March so that seasonal changes do not influence data collection. With 4 students working 10 hours a week for 5 weeks, their pay totals to $1,450.

In April and part of May, two students will complete the data entry and analysis from both the built environment assessments and surveys. This would take approximately 6 weeks so their pay for 10 hours a week totals to $870.

**Marketing:**

There will be several methods used to advertise the study at several points throughout the semester. Flyers will be posted around campus to promote the survey, information cards will be handed out to classes and groups, and then flyers will be posted with the results from the study. Publicizing the findings of the project to the community should increase awareness. In addition to print media, K-State Today announcements, email listservs, word of mouth, and speaking to classes will also be used but will not need funding. Funds to print off materials totals to $130.

**Project Timeline**

**January 2016:** Obtain IRB approval, prep materials for marketing the study (print flyers and cards to hand to classes)

**February 2016:** Marketing of study around campus (flyers, speaking to classes, emails), training students hired for data collection

**March 2016:** Built Environment assessments and surveys sent out campus wide

**April 2016:** Survey terminated, compensation given to students/ staff/ faculty according to random selection of applicable individuals, data analysis from surveys and built environment assessments

**May 2016:** Data analysis from surveys and built environment assessments/ publication of results from survey in educational posters and flyers around campus, K-State Today, Collegian, email list serves, etc.
References

1. Rozana Zakaria et al. / JurnalTeknologi (Sciences & Engineering) 65:3 (2013) 85–90