Undergraduate Psychology Research Methods Journal

Manuscript 1164

How Lindenwood Students Get to Class: A Study of Driving Versus Walking

Sara Ohlms

Fall 2008 Research Methods Journal

How Lindenwood Students Get to Class:

A Study of Driving Versus Walking

Sara Ohlms

The purpose of this study was to determine if there is a lack of parking at Lindenwood University (LU), and if that problem could be solved if more students who currently drive to class would walk instead. Research shows that college students in America are not getting enough exercise, and that walking has many health benefits. Data were collected using a survey with 40 LU students. Data were also collected through observations of the parking lots on campus. The results show that there are always empty parking spots on campus, 67.5% of participants believe that there is not enough parking on campus, 72.5% agree that more students should walk to class, and that 75% of participants who live in LU owned houses drive to class.

Many students who go to school on the St. Charles campus of Lindenwood University (LU) feel that there is not enough parking space for all of the students who have to park their cars on campus. It is very common to have a teacher or student walk in to a class late, and say that they were looking for a parking spot. Many students drive to class from the girls' and boys' neighborhoods that are owned by LU, which are located on the edge of campus. To walk to class from one of these houses takes from 10 to 20 minutes.

Walking to class can be very beneficial to a student's health. Current research says that only 33% of the American adult population gets the recommended amount of physical activity (Sisson, McClain, & Tudor-Locke, 2008). At one Midwestern

university, only 30% of the students met the recommendations (Sisson, et al.). This means that it is not just old people that are not getting enough exercise, it is young college aged men and women, like the ones that choose to drive to class rather than walk.

Walking is good for a person's health. This is common sense. Any physical activity is better than none. Even walking in small amounts can benefit a person's health. Studies have shown that walking 30 minutes a day can increase a person's health (Barker, 2007). Even if the walk is broken up into two 15 minute sessions, the benefits are the same (Barker). Walking at a faster pace can increase the health benefits gained from walking (Barker). The students at LU can increase their health just by walking to class instead of driving.

The specific health benefits of walking are well-established. Studies have shown that just 30 minutes of walking a day can cause weight loss, reduce the risk of heart disease by half, strengthen bones by increasing bone density, and retain mobility into old age (Lee, 2008). In one study, women who walked briskly for 45 minutes per day, five days per week had half as many colds as women who did not walk, along with an increase in the cells that protect against bacteria and viruses (Shideler, 2006). Walking can reduce stress, improve sleep, and reduce symptoms of depression (Getting Fit, 2008). If students at LU walk to class instead of driving, they will gain all of these physical and mental benefits.

One factor that influences whether college students walk or drive to class is campus walkability (Sisson, et al., 2008). The walkability of a campus is the measure of how easy and safe it is for a person to walk on the campus. The Walking Suitability Assessment uses information about the average amount of traffic, speed limit, presence

and condition of sidewalks and crosswalks, and number of traffic lanes to generate a score of how walkable the specific stretch of road is (Emery, J. & Crump, C., as cited in *Making your Community*, 2002). One study compared two college campuses that had different levels of walkability. One campus had no traffic allowed on the campus, and parking was only on the edges of campus. The other campus had streets for cars going through it, and parking around each building (Sisson). The second campus was rated as "fair" for walkability, while the first was rated as "very good" (Sisson). The results found a strong positive relationship between campus walkability and amount of walking done by students (Sisson). The more conducive a campus is to walking, the more the students will walk to class instead of drive.

The purpose of this study is to find out how many of the students who live on campus drive to class, to determine the peak hour for students on campus, to see if there is ever a time when all of the parking spaces are full, to figure out the most common reasons that people drive or walk to class, and to know the students' attitudes about the current amount of parking available on campus. The hypothesis was that the lack of parking at LU, whether real or perceived, would be fixed if more students walked to class instead of drove.

Method

Participants

The participants taking part in this study were 40 students at Lindenwood University (LU), with an age range of 17 to 29, and a mean age of 20.225 (s.d.= 2.44). The class breakdown was 40% freshmen, 35% sophomores, 12.5% juniors, and 12.5% seniors. The participants were recruited through the LU Human Subject Pool (see

Appendix A). These participants received extra credit in their introductory level psychology, sociology, or anthropology class for their contribution.

Materials

The study consisted of a survey (see Appendix B), which asked questions about the students' demographic information, how they usually got to class, questions about parking behaviors or questions about the walk to class, and questions about the participants' attitudes about the current amount of parking at LU. The study took place in room 105 in Young Hall, which has adequate lighting, a desk, and three chairs. The participants were given two copies of the informed consent form (see Appendix D), with instructions to fill one out for the researcher, and to keep the other one for their records. After the study, the participants received a feedback letter containing contact information of the experimenter (see Appendix C), and a participant receipt to take to the Human Subject Pool office so that they could receive their extra credit.

Procedure

The sign up sheet and study description were posted on the Human Subject Pool bulletin board located on the fourth floor of Young Hall at LU. Participants signed up for specific times at which to take the survey. At the times for which they signed up, participants came to room 105. They were welcomed and asked to sit at the desk and sign in. They were then given two copies of the informed consent form, with instructions to fill one out for the researcher, and to keep the other one for their records. After completion, the participants received a copy of the survey, with instructions to ask questions if they had trouble understanding any part of the survey. The survey was laid out on the desk in front of the participants, each page in its own pile. I gave each

participant a copy of the page 1. The last question on page 1 instructed the participant to take page 2A if they usually drove to class, 2B if they usually walked, and page 3 if they carpooled or got to school another way (see Appendix B). If they drove and walked equally, they were verbally instructed to take both page 2A and 2B. After they had completed page 2, they took page 3. After the participants had completed the survey, they were given a feedback letter so that they can inquire about the results of the study. They were also given a receipt to take to the Human Subject Pool office so that they could receive the extra credit in their introductory level psychology, sociology, or anthropology class. They were then debriefed, being told the hypothesis of the study and the purpose. They were then thanked for their time and were free to leave.

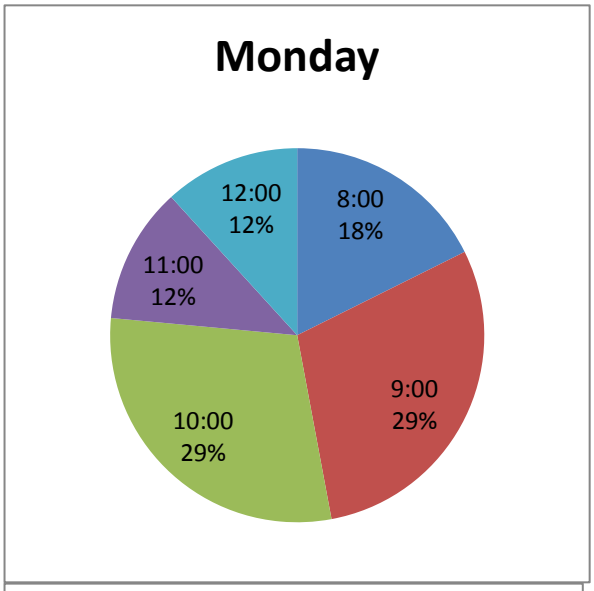
In addition to the survey, observations were made of the parking lots on the LU campus on various days, at multiple times throughout the day. These observations were made between the hours of 8:00 a.m. to 3:00 p.m., with most observations being made on Mondays, Wednesdays, and Fridays between 9:00 a.m. and 12:00 p.m. The lots that were observed the most were the large lot by the Spellman Center in front of Irwin Hall, the lot by Harmon Hall, and all of the other parking areas on the campus. Being observed was the number of empty parking spaces at specific times, as well as the number of cars parked illegally.

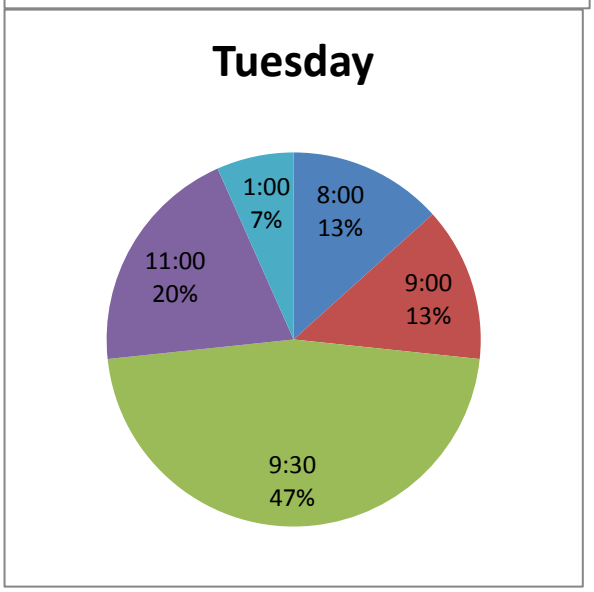
Results

Of the 40 participants, 16 participants (40%) reported driving to class, 22 participants (55%) reported walking or riding a bike to class, one participant (2.5%) reported riding in a carpool, and one participant (2.5%) reported driving and walking equally. The results of the survey show that 100% of participants who live off campus

drive to class, 100% of students who live in the dorms walk to class, with the exception of one participant who drives and walks to class equally, and that 75% of the students who live in LU-owned houses drive to class.

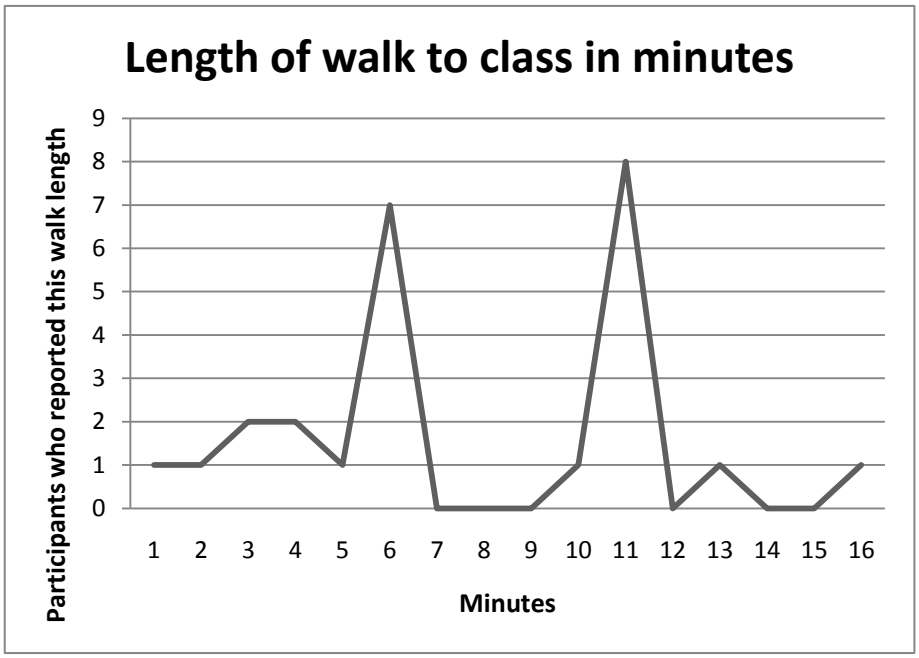
On Monday the time at which most participants who drive have their first class is both 9:00 a.m. and 10:00 a.m., with ten participants (58%) who drive to class reporting one of those times. The most common time on Tuesday is 9:30 a.m., with nine participants (47%).

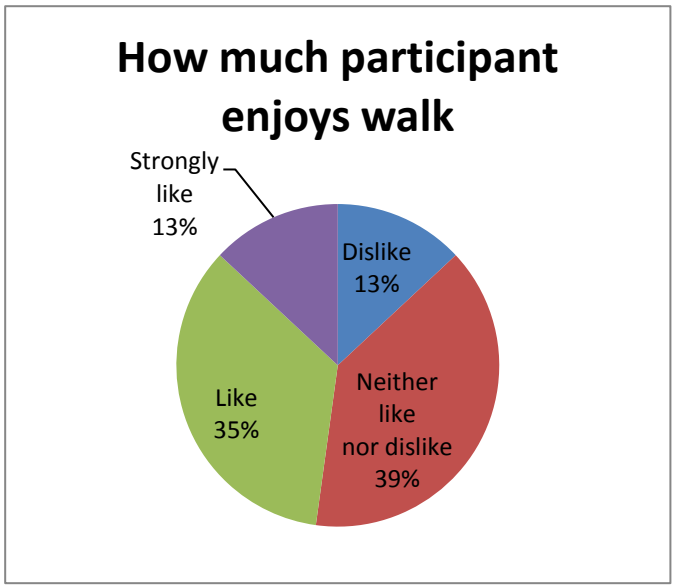




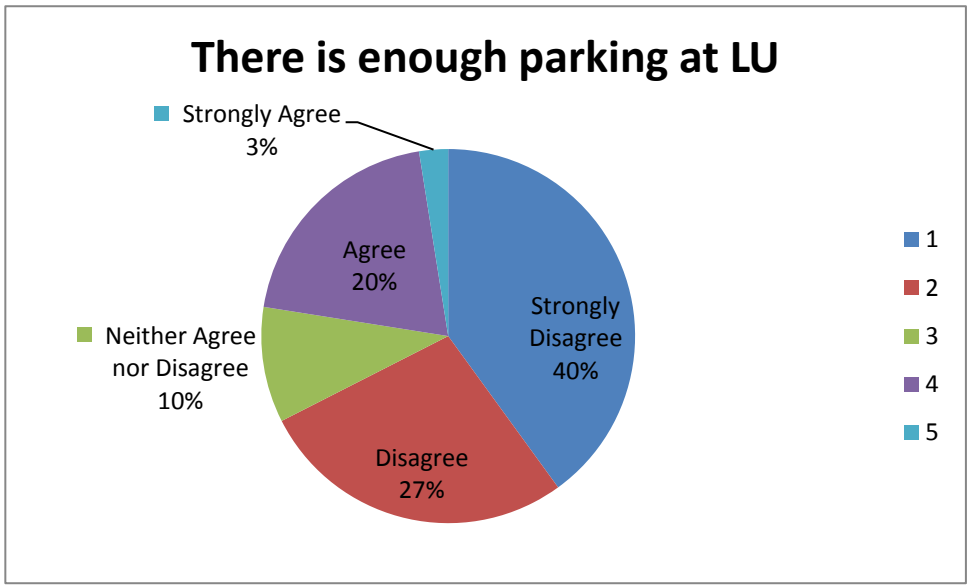
When asked if the participant usually had trouble finding a parking spot, nine (52.9%) said yes, and eight (47.1%) said no. When asked where the participant begins his or her search for a spot, seven (41.2%) said that they started close to the building in which they had class, five (29.4%) said that they started farther away where they were more likely to get a spot, and five (29.4%) said that it depends. When asked if he or she would park illegally, six (35.3%) said yes, with eleven (64.7%) saying no. Two participants who drive to class, or 17.6%, have walked from where they live, with one reporting a walktime of 10 minutes, and the other 15 minutes.

The average walktime for participants who walk to class is 7 minutes, with a range of 1 minute to 15 minutes. When asked how much they enjoyed the walk to campus, three (13%) dislike it, nine (39.1%) neither like nor dislike it, and eleven (47.8%) either like or strongly like it. Of the participants who walk to class and do not have a car, four out of the twelve (33.3%) would drive if they had a car.



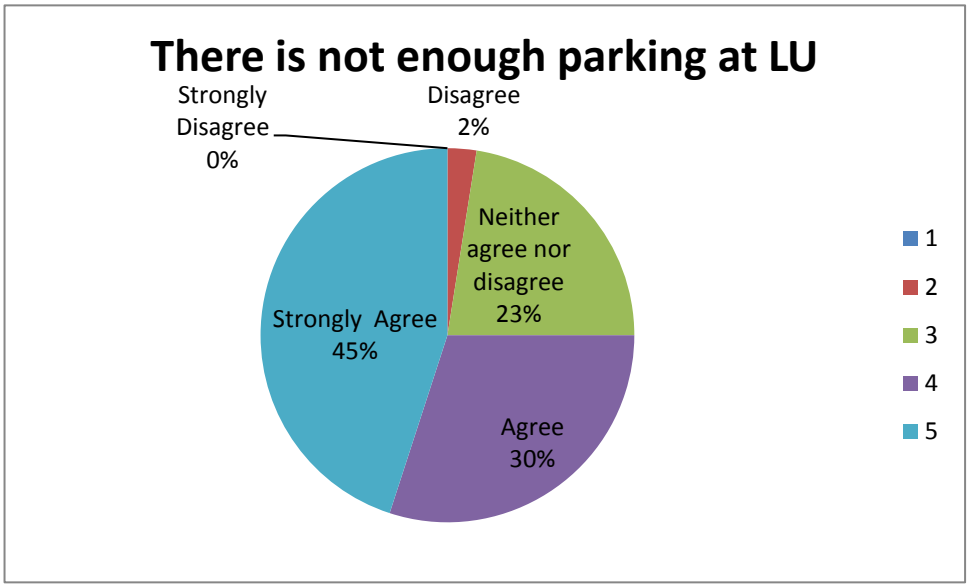


When asked to agree or disagree with the statement "There is enough parking space at Lindenwood University", 27 (67.5%) disagreed or strongly disagreed, 4 (10%) neither agreed nor disagreed, and nine (22.5%) agreed or strongly agreed.

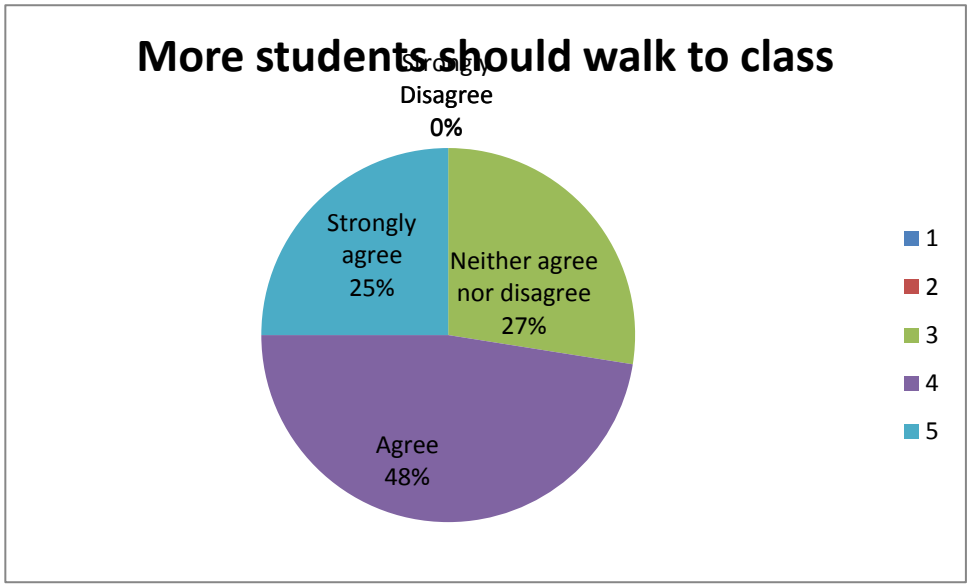


When repeated with the statement "There are not enough parking spaces at Lindenwood University. Lindenwood University should add more space for parking",

one (2.5%) disagreed, nine (22.5%) neither agreed nor disagreed, and 30 (75%) agreed or strongly agreed.



When asked to agree or disagree with the statement "More students should walk, ride bikes, or carpool to class", zero disagreed, eleven (27.5%) neither agreed nor disagreed, and 29 (72.5%) agreed or strongly agreed.



Based on the observations, there is no time in the day during which all of the parking spots on campus were full. Between 9:15 a.m. and 9:30 a.m. on Friday,

November 21, there were an estimated 175 open parking spots, with 125 of those being in the lot behind Butler Hall, next to Harmon Hall. At the same time that those spots were open, there were 11 cars parked illegally in the large parking lot by the Spellman Center. By 11:00 a.m. this number had increased to 24, while the number of empty parking spots remained about the same. For a map showing which lots are usually full and which ones are empty during the peak hours for class, see appendix E.

Discussion

Based on the observations, there is no actual lack of parking at LU. Many of the participants commented that more parking should be added closer to the classroom buildings, with one participant calling the parking by Harmon Hall "useless" since he or she does not have class in that building. This just shows that the students have the idea that they should not have to walk long distances to class. Students drive from the houses because the walk takes from 10 to 15 minutes. Students do not want to walk that long, and they also commented that they do not have time for that. However, the majority reported that they usually have trouble finding a parking spot, so the difference in time may not be that significant.

The fact that so many cars were parked illegally while so many spots were open is significant. It shows that the students assume that there are no available spots without checking. This is apparent from the survey, as 75% of the participants believe that there is a lack of parking space. Only 40% of the participants reported driving to class, so there are participants who walk to class who believe that there is a lack of parking. Perhaps the students think that there is a lack of parking based solely on what they hear from other students.

A 15 minute walk to campus is not too long for most people, depending on their schedules and level of physical fitness. Even students who find the walk to campus challenging at the beginning will improve over time, while improving their physical fitness at the same time. If the 75% of students who live in LU owned houses who drive started walking instead, there would be many more parking spots available on campus. They would also help the environment and themselves.

On the other hand, LU would not score well on the Walking Suitability Assessment. There is no sidewalk for most of the walk to the girls' neighborhood, and people walking from the boys' neighborhood have to cross a busy street. If more people are going to walk to class, the university is going to have to help. The most important things needed are a sidewalk all the way to the girls' neighborhood, as well as a safer way for the boys to cross the street. Many colleges use tunnels under busy streets.

One major limitation of this study was the sample size. More participants would make the results more accurate. Another limitation was that there are students who drive from dorms (this has been observed on multiple occasions) but these students did not volunteer for this study.

Future research on this area could focus on the reasons that drivers give for parking illegally, the opinions of freshmen immediately after orientation (to see if they believe that there is a problem before they have actually seen the normal routine of the campus and why), and the reactions of students who begin walking from LU housing.

References

Barker, J. (2007, June 5). One step at a time: A simple walk is good for your health, even if you're window-shopping. For fitness and weight loss, walk faster and farther. *The Gazette (Montreal)*, p. E4.

Getting Fit, One Step at a Time. (2008, April). *Tufts University Health & Nutrition Letter*, Retrieved November 24, 2008, from Alt HealthWatch database.

Lee, B. (2006, October 10). Walk into October: Take advantage of the cooler temps by beginning a walking program. *St. Joseph News-Press (MO)*, Retrieved November 3, 2008, from Newspaper Source database.

Making Your Community Walkable and Bikeable: A Guidebook for Change. (2002) Department of Health Behavior and Health Education, School of Public Health, The University of North Carolina at Chapel Hill.

Shideler, K. (2006, May 16). Steps toward a healthier you. *Wichita Eagle, The (KS)*, Retrieved November 3, 2008, from Newspaper Source database.

Sisson, S., McClain, J., & Tudor-Locke, C. (2008). Campus walkability, pedometer-determined steps, and moderate-to-vigorous physical activity: A comparison of 2 university campuses. *Journal of American College Health, 56*(5), 585-592.

Warrington, G. (2008, April 1). Taking steps to get into shape. *Irish Times*, Retrieved November 3, 2008, from Newspaper Source database.

Author Note

Sara Ohlms, Department of Psychology, Lindenwood University. saraohlms@yahoo.com

I would like to thank Dr. Nohara-LeClair for guiding me through this study with helpful advice and important questions. I would also like to thank all of the Lindenwood students who participated in my study, as well as my classmates in Advanced Research Methods who critiqued the various parts of my study. None of this study would have been possible without them.

Appendix A

Study description

How Lindenwood Students Get to Class: A study of parking versus walking

Participants will be asked to fill out a survey about how they get to class here at Lindenwood University, specifically about whether they walk or drive to class. The survey can take as little as 5 minutes, and should take no more than 10 minutes.

Appendix B

PAGE 1 SUBJECT ID#_____

HOW LINDENWOOD STUDENTS GET TO CLASS- SURVEY

1. What is your class standing?

FRESHMAN SOPHOMORE JUNIOR SENIOR OTHER

2. What is your age? ___ YEARS

3. Do you live in campus housing? (Meaning that you actually sleep there most days of the week) YES NO

If yes, do you live in a: DORM LU OWNED HOUSE

4. Do you have a car here? (Meaning, could you drive to class if you wanted to?)

YES NO

5. How do you get to class on most days? (If you do more than one equally, circle all that apply and answer the all questions that apply.)

DRIVE (TAKE PAGE 2A) WALK OR RIDE BIKE (TAKE PAGE 2B)

CARPOOL (TAKE PAGE 3) OTHER: _____ (TAKE PAGE 3)

PAGE 2A SUBJECT ID#_____

IF YOU DRIVE:

6. What time is your first class on Monday? _____

   What time is your first class on Tuesday? _____

7. Do you usually have trouble finding a parking spot? YES NO

8. Do you usually start searching for a spot closest to the building, or do you go farther away to where you have a better chance of finding a spot?

   CLOSE FAR DEPENDS

9. If you could not find a spot, would you park illegally (at the end of a row or along the side of the street)? YES NO

10. Have you ever walked to class from where you live now?

    YES NO

11. If yes, how long was the walk? _____ MINUTES

12. What is the reason that you drive instead of walk?

Continue to PAGE 3

PAGE 2B SUBJECT ID#_____

IF YOU WALK OR RIDE A BIKE

13. How long is the walk/ride to campus from where you live now? ___MINUTES

14. On a scale of 1 to 5, how much do you enjoy the walk/ride to campus?

1- STRONGLY DISLIKE 2- DISLIKE

3- NEITHER LIKE NOR DISLIKE

4- LIKE 5- STRONGLY LIKE

15. Answer only if you **do not** have a car: If you had a car, would you drive to class?

YES NO

16. Answer only if you **do** have a car: Why do you walk or ride a bike instead of drive?

Continue to PAGE 3

PAGE 3 SUBJECT ID#_____

FOR ALL PARTICIPANTS

Agree or disagree:

17. There is enough parking space at Lindenwood University.

Strongly Disagree Disagree Neither agree nor disagree Agree Strongly Agree

18. There are not enough parking spaces at Lindenwood University. Lindenwood University should add more space for parking.

Strongly Disagree Disagree Neither agree nor disagree Agree Strongly Agree

19. More students should walk, ride bikes, or carpool to class.

Strongly Disagree Disagree Neither agree nor disagree Agree Strongly Agree

20. Is there anything else that you would like to say about the parking situation at Lindenwood University?

Thank you for your participation!

Appendix C

Feedback Letter

Thank you for participating in my study. The questionnaire was used in order to determine the parking behaviors of students at Lindenwood University, and to find out if there would be less problems with parking if more students who live in student housing walked to class.

Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group of students, of which you are now a part. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:
Sara Ohlms Cell: (314)-630-7445

Supervisor:
Dr. Michiko Nohara-LeClair 636-949-4371 (mnohara-leclair@lindenwood.edu)

Appendix D

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking how I get to class at Lindenwood University. I understand that I should be able to complete this project within 10 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

Student Researcher's Name and Number:
Sara Ohlms
(314)-630-7445
saraohlms@yahoo.com

Supervisor:
Dr. Michiko Nohara-LeClair
Course Instructor
(636)-949-4371
mnohara-leclair@lindenwood.edu

Appendix E

The yellow areas usually have parking available, the green areas usually have a high number of parking spots available, the red areas usually do not have any open parking spots, and the purple line shows where there are usually cars parked illegally. These estimates are for the peak hours on campus.