



## **POSTER and ORAL PRESENTATION BUSINESS RESEARCH SHOWCASE COMPETITION**

### **Call for Posters and Oral Presentations**

The sixth Business Student Research Showcase is scheduled for Thursday, April 30, 2020 in the Harborside 2 Skyline Room (and adjoining Room #232). Students are requested to submit research projects, presentations from a class project and/or individual capstone projects. Members of the NJCU community, alumni, friends, and the public are invited to attend. Invitations will go out to President Sue Henderson and the Provost of the University.

The showcase will celebrate the achievements of business students by highlighting the creativity of students engaged in research in their business courses, independent studies, and extra-curricular activities.

### **Best Presentation Award for Both Undergraduate Students and Graduate Students**

The competition will consist of two separate categories: a poster presentation category and an oral presentation category (15 minute oral presentation, and 5 minutes question and answer period), and will include separate competitions for undergraduate students and graduate students. There will be a 1st place winner in both the poster presentation and oral presentation, with 2 runners-up in each category (2<sup>nd</sup> and 3<sup>rd</sup> place). Winners of the poster and oral presentation competition will be announced during the showcase. The presentations could be either a co-authored group presentation or a sole-authored (individual) presentation. Participants are permitted to compete in both categories, by submitting both 1 poster entry and making 1 oral presentation, if desired.

### **Important Note for Poster Competition Participants:**

For students participating in the Poster Competition, please review the "*Business Research Showcase Poster Guidelines*", (attached along with this distribution).

#### **Awards for best presentation:**

- Best Oral Presentation: Grand Prize Winner (1<sup>st</sup> Place), and 2<sup>nd</sup> and 3<sup>rd</sup> place runners-up
- Poster Presentation: Grand Prize Winner (1<sup>st</sup> Place), and 2<sup>nd</sup> and 3<sup>rd</sup> place runners-up.

### **Special Award for Best Faculty Advisor:**

When students submit their abstracts (either poster or oral completion), they will be asked the name of their faculty advisor. **Based on a rubric which (i) includes faculty participation in the spring 2020 showcase competition as a faculty mentor, and (ii) incorporates both the number of faculty advisees and the advisees' placement in the competition, the School of Business will present an official plaque to the “*Faculty Mentor of the Year*”.**

## **Benefits to Students Who Participate**

Students will benefit from this showcase by gaining experience in public communication and interacting with the invited guests, judges, and many members and friends of the NJCU community. This will be a great networking opportunity! Additionally, participants will receive public recognition of their efforts, with the possibility that some students may wish to include successful entries as an item on their employment resume.

## **Instructions for Submission – Abstracts and Final Posters**

**ABSTRACTS SUBMISSION DATE:** All abstracts (summarizing your oral presentation, poster presentation or both), should be submitted **no later than Monday, March 30, 2020**, and should be submitted electronically at <https://forms.gle/EPmzWJPQ4b3Fk7w3A> . Click the link and follow the instructions for submitting an abstract. The author (or authors, if a co-authored work) should submit the abstract. All abstracts should be less than 500 words. All presenters should be identified through the submission. The title of the presentation should be included in the abstract. The Business and Economics Research Committee will send you a receipt for your submission; if you don't receive the receipt, please contact the committee co-chair at [lxu@njcu.edu](mailto:lxu@njcu.edu)

**FINAL POSTERS SUBMISSION DATE:** Final posters should be submitted **no later than Friday, April 17, 2020**.

**FINAL ORAL PRESENTATION FILE SUBMISSION DATE:** **no later than Friday, April 17, 2020**

Summary:

- Abstract Submission Deadline (Posters and oral presentations): Monday, March 30, 2020
- Completed Poster Submission: Friday, April 17, 2020.
- Completed Oral Presentation File Submission: Friday, April 17, 2020.

## **Acceptance Notification**

Accepted presentations will be notified no later than Monday, April 6, 2020 at 11:59 p.m. (EST).

## **Other important Dates**

- Poster Presentation Competition: Thursday, April 30, 2020: (3:00-4:30 p.m.)
- Oral Presentation Competition: Thursday, April 30, 2020: (12:30-4:30 p.m.)
- Awards Ceremony: Thursday, April 30, 2020: (5:30-6:30 p.m.)

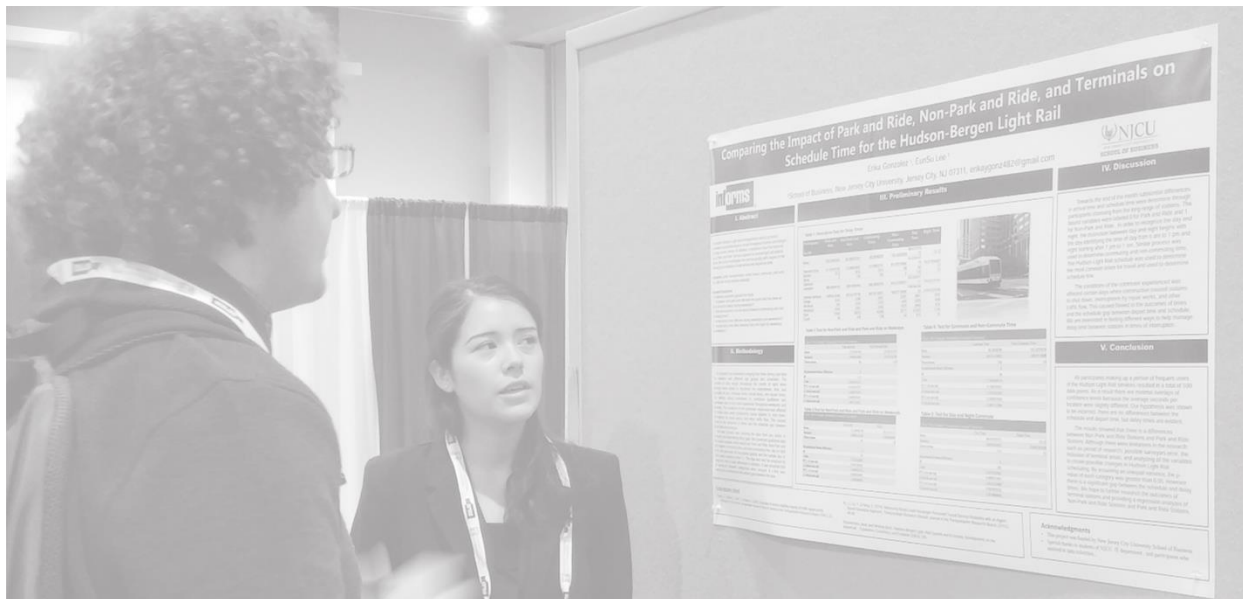
## **Contact Information**

You can contact the Business Student Research Showcase Committee if you have any questions.

- Li Xu: lxu@njcu.edu
- Michael Bell: mbell@njcu.edu
- EunSu Lee: elee3@njcu.edu
- Jorge Medina: jmedina7@njcu.edu
- Prashanth Ravula: pravula@njcu.edu
- Xiaodi Zhu: xzhu@njcu.edu
- Nava Cohen: ncohen@njcu.edu
- Sujin Song: ssong1@njcu.edu

## Further Information

Poster Session will be displayed at the Skyline conference room from 1:00 to 6:30 p.m. The competition participants should be present for the show at 2:50 p.m.; the jurors will visit each poster and ask questions. The posters will be taken down at 6:30 p.m. after the awards ceremony.



**Sample: Poster (3 feet ×2 feet)**

# Comparing the Impact of Park and Ride, Non-Park and Ride, and Terminals on Schedule Time for the Hudson-Bergen Light Rail



Erika Gonzalez<sup>1</sup>, EunSu Lee<sup>1</sup>

<sup>1</sup>School of Business, New Jersey City University, Jersey City, NJ 07311, erikagonz482@gmail.com



## I. Abstract

The Hudson-Bergen Light Rail transportation service provides commuters accessible ways to travel throughout Hudson and Bergen Counties in New Jersey. In addition, commuters have the option to use a Park and Ride service adjacent to several light rail stations. Hence, this study investigates the service quality with respect to the efficiency and reliability of train arrival and departure time.

**Keywords:** public transportation; urban areas; commuter; park and ride; light-rail; transit service reliability

### Research Questions

- The following questions guided the study:
  - Did stations with park and ride and non-park and ride have an effect on service delay during weekdays?
  - What discrepancies can be found between commuting and non-commuting times?
  - Are the delay times different during weekdays and weekends?
  - How did delay time differ between day and night for weekdays and weekends?

## II. Methodology

The surveyors are commuters residing from New Jersey and New York residents with different age groups and schedules. The collection of data began throughout the month of April when surveyors were asked to investigate the environment, time, and availability of cars, schedule times, arrival times, and depart times. This method allows commuters to contribute qualitative and quantitative data of the travel experience throughout weekdays and weekends. The conditions of the commuter experience was affected on certain days when construction cause stations to shut down, interruptions by repair works, and other traffic flow. This caused flawed to the outcomes of times and the schedule gap between depart time and schedule.

The next process was cleaning the data from any errors in surveys and determining delay gaps. We converted qualitative data into sound variables which would sort Park and Ride, Non-Park and Ride stations, commuting time, and non-commuting time, day or night times. We determine the descriptive statistics with the sample size of 500 in each category (table 1). The data was then be analyzed by using an F-test to seek differences in variance. It was assumed that all variances between categories were unequal. A t-test was conducted to demonstrate the evident gaps between the data.

## III. Preliminary Results

Table 1: Descriptive Data for Delay Times

Participants	Park and Ride	Non-Park and Ride	Commuting Times	Non-Commuting Times	Day Time	Night Time
N=500	132,144,444	92,995,153	92,985,009	180,42,087	86,01,743	25,12
Standard Error	41,154,161	15,966,502	12,536,057	60,338,080	14,234,127	73,18,017,680
Median	53.5	63.5	58.5	59	52	31
Mode	5	133	135	2	133	17
Standard Deviation	208,000,416	308,430,042	290,300,019	443,370,013	17,165,012,941	323,324,21
Sample Variance	148,042,666	50,134,767	84,714,108	196,577,569	52,243,016,429	104,344,54
Range	3340	3396	3087	2507	3087	1407
Minimum	300	833	1639	424	3303	309
Maximum	2942	2361	2942	1873	2942	623
Sum	1164	1852	4420	8771	51303	1744
Count	88	438	539	94	570	79

Table 2: Test for Non-Park and Ride and Park and Ride on Weekdays

	Park and Ride	Non-Park and Ride
Mean	170.151312	92.024231
Variance	140.81466	8151.7078
Observations	98	441
Hypothesized Mean Difference	0	
t Stat	232	
t Critical one tail	3.9801033	
t Critical two tail	3.1811177	
P(T<=t) one tail	1.0380268	
P(T<=t) two tail	3.5880531	
t Critical two tail	3.1811181	

Table 3: Test for Non-Park and Ride and Park and Ride on Weekends

	Non-Park and Ride	Park and Ride
Mean	15.3058258	55.1111111
Variance	3480.52168	2736.00001
Observations	85	15
Hypothesized Mean Difference	0	
t Stat	79	
t Critical one tail	1.7977929	
t Critical two tail	1.6707124	
P(T<=t) one tail	6.007E-042	
P(T<=t) two tail	1.2154082	
t Critical two tail	1.6707124	

Table 4: Test for Commute and Non-Commute Time

	Commute Time	Non-Commute Time
Mean	82.904081	114.629629
Variance	8429.485	10472.288
Observations	315	75
Hypothesized Mean Difference	0	
t Stat	-1.2390414	
t Critical one tail	1.1512307	
t Critical two tail	1.4015040	
P(T<=t) one tail	0.8934154	
P(T<=t) two tail	0.8017788	

Table 5: Test for Day and Night Commute

	Day Time	Night Time
Mean	90.8274722	23.31
Variance	66.341482	2818.01049
Observations	315	75
Hypothesized Mean Difference	0	
t Stat	3.9300001	
t Critical one tail	1.0951161	
t Critical two tail	1.0517348	
P(T<=t) one tail	0.0004051	
P(T<=t) two tail	1.0708018	



Towards the end of the month substantial differences in arrival time and schedule time were determined through participants choosing from the range of stations. The outcome variables were selected 0 for Park and Ride and 1 for Non-Park and Ride. In order to recognize the day and night, the distinction between day and night begins with the day identifying the time of day from 6 am to 7 pm and night starting after 7 pm to 1 am. Similar process was used to determine commuting and non-commuting time. The Hudson Light Rail schedule was used to determine the most common times for travel and used to determine schedule time.

The conditions of the commuter experience was affected certain days when construction caused stations to shut down, interruptions by repair works, and other traffic flow. This caused flawed to the outcomes of times and the schedule gap between depart time and schedule. We are interested in finding different ways to help manage delay time between stations in times of interruption.

## V. Conclusion

All participants making up a portion of frequent users of the Hudson Light Rail services resulted in a total of 500 data points. As a result there are minimal overlaps of confidence levels because the average seconds per location were slightly different. Our hypothesis was shown to be incorrect, there are no differences between the schedule and depart time, but only times are evident.

The results showed that there is a difference between Non-Park and Ride Stations and Park and Ride Stations. Although there were limitations in the research such as period of research, possible surveyors error, the inclusion of terminal stops, and analyzing all the variables to create possible changes in Hudson Light Rail scheduling. By assuming an unequal variance, the p-value of each category was greater than 0.05. However there is a significant gap between the schedule and delay times. We hope to further research the outcomes of terminal stations and providing a regression analysis of Non-Park and Ride Stations and Park and Ride Stations.

## Literature cited

Chang, J., Colura, J., Don, F., & Ratha, H. (2003). Evaluation of service reliability impacts of traffic signal priority strategies. In: Saeed, S. (Ed.), *Transportation Research Record: Journal of the Transportation Research Board*, 181(1), 23-31.

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