

**Report: What Brought International Students to Truman?**

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**Executive Summary:**

Our STAT 310 class was tasked with giving a survey to Truman students with the goal of answering the question, “What brought you to Truman?”. The goal of this project was to analyze and present findings about the data to Truman staff, where they could use this to recruit more students to attend Truman. Our group was specifically tasked with determining what brings international students to the university.

We first met with our client, Tim Urbonya, to learn more about the international admissions process. Using this information, we determined what we wanted to focus on in our project and the main questions we wanted answered by the survey. These main questions were how international students initially hear about Truman, what aspects impact them the most to ultimately choose Truman, and what they like and dislike about Truman now.

We found that more than 60% of international students first become aware of Truman in one of three ways, a recruiting agent, a family member or friend, or the Truman State website. All other options had less than 10% of students select them.

Truman’s academics, cost, and scholarships offered to international students overall had a moderate to high impact on their decision to choose Truman. The campus received mixed reviews, as answers ranged from low impact to high impact. The student life and organizations, location, and recruitment staff that Truman offered had a moderate to no impact overall on students’ college decision.

Overall, the international students enjoy the academics, campus facilities and amenities, and clubs and extracurricular activities at Truman. There were mixed views on the location of Truman and the food on campus, with some students enjoying them and others not so much.

To improve the recruiting of international students, emphasis should be placed on Truman's most attractive qualities, which are its academics, cost, and scholarships. The website should be kept up to date and any important information should be posted on it in an easy to find place. Current international students should be prompted to recommend Truman to their family and friends. Lastly, food on campus should be improved to suit the preferences of all international students.

**Introduction:**

Colleges and universities across the nation want to have as many students attend their university as possible. Various advertisements and marketing tactics are used by colleges to make students aware and excited to attend. However, every college is different, and students choose to attend different colleges for different reasons. Here at Truman, our client, Tim Urbonya, Executive Director for International Education, is interested in what aspects of Truman incoming students are attracted to, so they can use the information to influence more international students to come to Truman. Our class was tasked with giving a survey to Truman students with the goal of answering the question, "What brought you to Truman?". Our group designed a survey specifically for international students who attend the university. Using data gathered from the survey, we hope to gain insight into how international students hear about Truman, what aspects impact them the most to ultimately choose Truman, and what they like about Truman now.

**Methods:**

At first, our group was not familiar with the process of how international students find out about and eventually attend Truman. On September 18th we met with our clients in the

Center for International Students, Tim Urbonya and intern, Stephanie Renasco, where they explained the process of how they recruit international students to come to Truman. They explained that they have a partnership with certain agencies across the world that introduce students to Truman in their area. They mentioned Truman is usually not students' first choice in college, so agents recruiting for Truman are sent to less populated areas to avoid competition with other universities in the US. They also mentioned that many international students get their information on Truman from online and social media, and many students choose to come here because they have a friend or relative who is already here. Another idea that the client had on why international students attend Truman was that their goal is just to come to the US and try to eventually find a career. Because of Truman's low costs, it is attractive to people in this situation. The client's overall goal for our project is to test their assumptions and determine if there are any other reasons international students specifically choose Truman, then use this to attract more students to our university.

On October 6, 2023, eleven students were given a pilot-test protocol with Kelly being the moderator and both Nathans taking notes. Kelly walked them through the survey going through each question and answering any questions or concerns they had. Throughout, Kelly handed out candy to encourage participation. The pilot-test protocol allowed for a refinement of the questions based on confusion, wordiness, and repetitive questions. After refinements were made, the survey was distributed via the Truman State University Center for International Students to the international student population starting on October 24, 2023. The students who received the survey were able to answer until November 4, 2023, when the survey was closed.

Once the data was collected, the data cleaning began with renaming all columns to shorten the names, improve understanding, and name columns with similarities. For example,

columns about extracurricular activities begin with 'EXACT', columns about the impact on the students' decision begin with 'IMPACT', and columns about the enjoyment of Truman begin with 'ENJOY'. Then, the 40+ columns of each major were condensed into a single column called `academic_school`. The free response questions of "What country are you from" and "What city are you from" were re-coded so that responses with the same country/city name were not case sensitive. The column 'SemestersAtTruman' originally had weird output that was hard to read so it was re-coded as "1-2 (first year)" ~ "1-2 Semesters", "44989" ~ "3-4 Semesters", "45052" ~ "5-6 Semesters", "45115" ~ "7-8 Semesters", and "9 or more" ~ "9 or more". The column 'US\_Universities\_Accepted\_counts' also had weird outputs so it was recoded as 1 ~ "1", 44960 ~ "2-3", 45021 ~ "4-5", 45087 ~ "6-10", 10 ~ "10+". Because of only one response in North America and 3 in South America, the continents were combined in the following analysis into the Americas so that there is a larger sample size.

## **Results:**

The survey received a total of 43 responses, which were comprised of 25 males and 18 females, from a total of 22 different countries. From the responses, 20 were Freshmen, 12 Sophomores, 4 Juniors, and 5 seniors. Of the 43 responses, 10 were from Africa, 20 Asia, 7 Europe, 1 North America, and 3 South America. We created a chart of the majors of students based on the continent they are from (Figure 1). However, because there are so many majors, they have been condensed into the five academic schools to give a better idea of what areas of study international students are entering into. These are the School of Social and Cultural Studies, Science and Mathematics, Health Sciences and Education, Business, and Arts and Letters. Once again, the academic school was compared to what continent students were from.

Figure 2 reveals some interesting trends about what academic programs international students from different continents are interested in. The bars for the Americas don't have enough data to be useful, but the other bars do. 40% of students from Africa are a part of the School of Health Science and Education, which is significant because no students from any other continent are in this program. Also, of the students from Asia, 85% are in either the School of Business or the School of Science and Mathematics. The students from Europe seem to be balanced across the academic schools.

After examining the demographics of the respondents, the analysis of the survey questions can begin. The first question that we analyzed is how students initially heard about Truman. Each respondent could only select one answer. Figure 3 shows the percentage of the answers with family or friends, agents, and the website being the most common responses. These made up more than 60% of responses. No respondents heard about Truman from a sports coach or Truman publication.

After learning about how they initially heard about Truman, the impact of each aspect on their decision can be analyzed. The respondents answered on a likert scale of 1 to 4 with 1 being no impact and 4 being large impact. Below is a boxplot of impact on decisions for major/academics, campus, student life/organizations, cost/value, scholarships, location, and recruitment staff. The boxplot can be read by the blue box representing the 25th to 75th percentile with the middle black line being the median. As shown in Figure 4, major/academics, campus, cost/value, and scholarships had a major impact on their decision. On average, student life/organizations and the location of Truman had a low impact on the decision of international students to choose Truman.

A Tukey's HSD comparison was run on each factor for the impact on their decision to attend Truman based on their continent. Tukey's Honestly Significant Difference (HSD) is a statistical method used to compare the means of different groups in a study and determine if there are any significant differences among them. It will test the average values (means) of a particular variable that differ significantly between these groups. If the difference between the means of two groups is not statistically significant, they are considered to be in the same group while if they are in a different group then they are statistically significant. Recruitment staff, location, cost value, campus, and major/academics did not have any significant results by continent due to the means being similar and thus all in the same group. Alternatively, there was a difference between continents for scholarship and student life/organizations. Figure 13 represents the grouping for scholarships and Figure 14 represents student life/organizations. In Figure 13, the Americas, Africa, and Asia are in a group because they have a similar mean, while Asia and Europe are in a group. In Figure 14, Europe, Asia, and the Americas are in a group because they have a similar mean, while the Americas, Asia, and Africa are in a group.

According to the Center for International Students, one of the best recruiting methods for new international students is through family and friends. Our survey wanted to focus on this aspect and learn what current Truman international students enjoy about Truman so that it can be focused on recruiting tactics. The higher enjoyment will also reduce the chance of transferring. First, the claim of family and friends being one of the best recruiting methods will be verified. Out of the 43 responses, 11 had a friend/relative attend Truman before them. A follow-up question was then asked to the respondents who said yes and asked if that friend/relative had an impact on their decision. The average answer was somewhat agreed that the friend/relative had an impact on their decision.

Looking at the survey responses, there were some easy takeaways from how much knowing a Truman Graduate affected the decision to come here. The initial scale was a 5 point likert scale, so of the responses that did meet that requirement, not a single person stated that it had a negative impact on their decision to attend, with a majority of that portion of the survey responses group stating that those individuals made them more likely to attend Truman State University. However, a large portion of the respondents did not have a friend or relative who attended the university, which means that they were convinced to attend due to other factors. (Figure 5)

Enjoyment was analyzed by asking Truman students if they agree with the statement, “I enjoy this aspect of Truman State University”, for academic courses/classes, Truman clubs and extracurricular activities, campus facilities and amenities, location of Truman, and food on campus. This was measured on a likert scale of 1 to 5, where the choices ranged from strongly disagree to strongly agree. Figure 6 shows the means of each of these aspects. Truman students do not enjoy the location and food as much as the academics, clubs and extracurricular activities, and campus facilities and amenities.

Another thing looked at was the differences in students from various continents and how likely they would be to recommend Truman State University. Of the total responses, 43.9% of participants were very likely to Recommend Truman to others while only 1 response was somewhat unlikely to recommend Truman. A Kruskali-Wallis test was run to compare the medians of each continent (Figure 8). The results show there is a significant difference between the continents with a p-value of 0.04. The median response from Africa was that they were “very likely” to recommend Truman. For Asia and Europe, the median was that they were “somewhat



likely” to recommend Truman. For students from the Americas, the median response was “neutral”.

The survey also looked to gain insight into their university information outside of Truman. Figure 9 represents the question asked about how many American universities were you accepted into. Appendix E has a list of the first choice of universities from the respondents. 11 of the first choices were Truman and the rest were all unique responses.

The final question of the survey asked the respondents to share anything else about why they chose Truman. There were 10 responses that were then classified as positive, neutral, or negative. Out of the responses, 8 were positive and 2 were neutral. Appendix D has all ten of the comments attached. Of these responses, half talked positively about their professors and their ability to form connections with them. 60% of the respondents spoke positively about the environment and students at Truman.

### **Discussion:**

The analysis of how international students initially heard about Truman revealed that family or friends, recruitment agents, and the university website were the most common sources, comprising approximately 60% of responses. This emphasizes the importance of personal connections and targeted outreach through recruitment agents and online platforms. The claim that family and friends play a crucial role in recruiting international students was supported by the survey. Eleven respondents had a friend or relative attend Truman before them, and on average, they somewhat agreed that this influenced their decision. Leveraging the positive experiences of current students for recruitment efforts can be an effective strategy, but because students from Africa were more likely to recommend Truman and students from the Americas

were less likely to, the international office should be selective when choosing what students to share their college experiences with prospective students.

The Likert scale analysis showed that major/academics, campus, cost/value, and scholarships had a significant impact on international students' decisions to attend Truman. Figures 10, 11, and 12 look closer at major/academics, scholarships, and cost/value, revealing that these variables had a high percentage of responses who claimed these items had a large impact on their decision to choose Truman. These aspects align with the factors commonly considered by prospective students. Enhancing these strengths and promoting them in marketing materials could attract more students.

The Likert scale analysis on the topics of academic courses/classes, Truman clubs and extracurricular activities, campus facilities and amenities, location, and food revealed varying degrees of enjoyment. While academics, clubs, and extracurricular activities received high scores, location, and food scored lower. It may be worth addressing concerns related to location and food by marketing them in a more positive light.

Looking at the free responses, the comments show a clear lean towards enjoying the smaller, more closely connected community around Truman. This selling point, of more connection among peers and professors, is likely to be a factor that needs more research to determine whether this was an initial draw or was something that was found enjoyable after enrollment. Regardless, it seems like an important factor that may be important to market to incoming international students.

**Future research:**

If our project was started from scratch, there would be an expanded focus on learning more about the transferring of international students, what they value in universities during their decision process, ranking the impact on decisions, and rating if it was a positive or negative impact. International students have a high transfer rate out of Truman and if insightful data could be found then there could be a way to prevent this from happening. Although it is not possible to survey students who did not attend Truman, our survey could have a specific focus on finding out what they value in universities. This is slightly different from the question about impact because we could ask about more factors that Truman did not have or promote. The question on impact could also be grown upon by ranking from most impactful to least impactful each factor had on their decision. Assumptions could be made about this based on the mean values but it would be beneficial to have an exact answer. The impact question also never specified whether it was positive or negative. Increasing clarity on this question could bring valuable information. The last change to the survey our group would make is to further our knowledge of similar surveys sent out at other universities. This would be done in the form of references in our survey and paper which could help us improve and learn from others all around the United States.

## Appendix A: Graphs and Statistical Tests

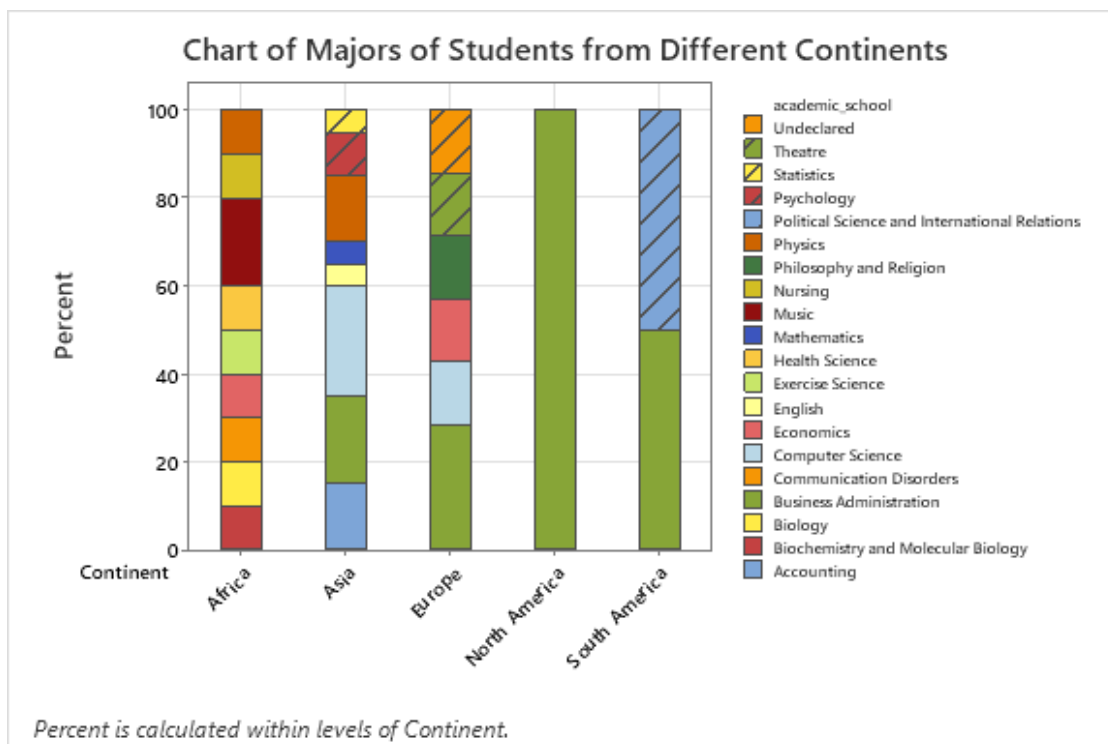


Figure 1

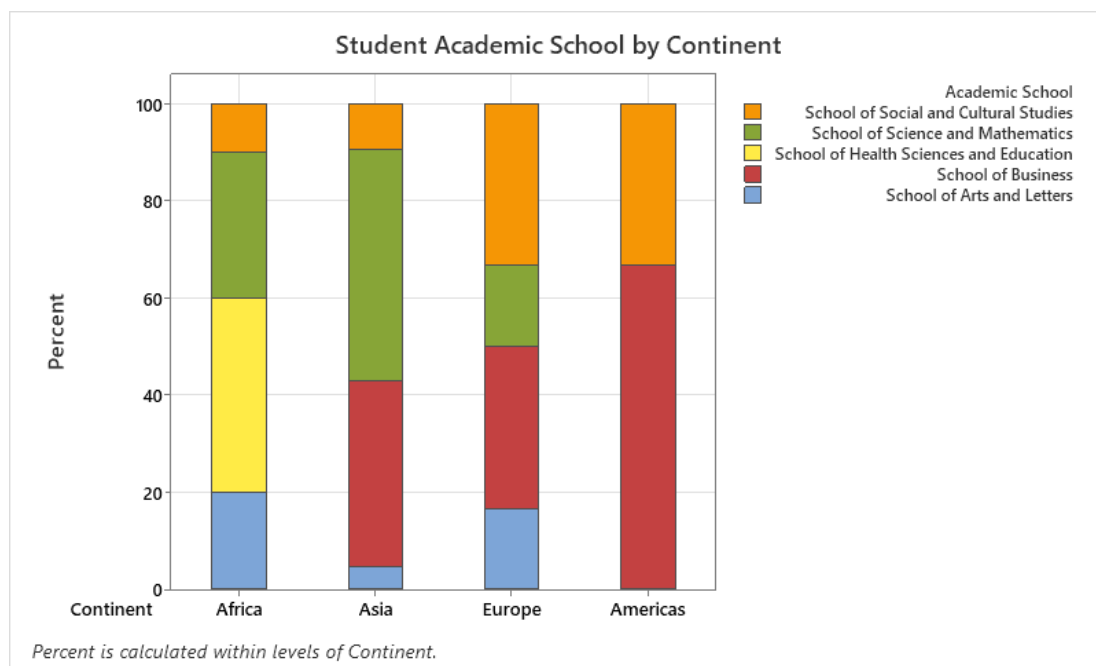


Figure 2

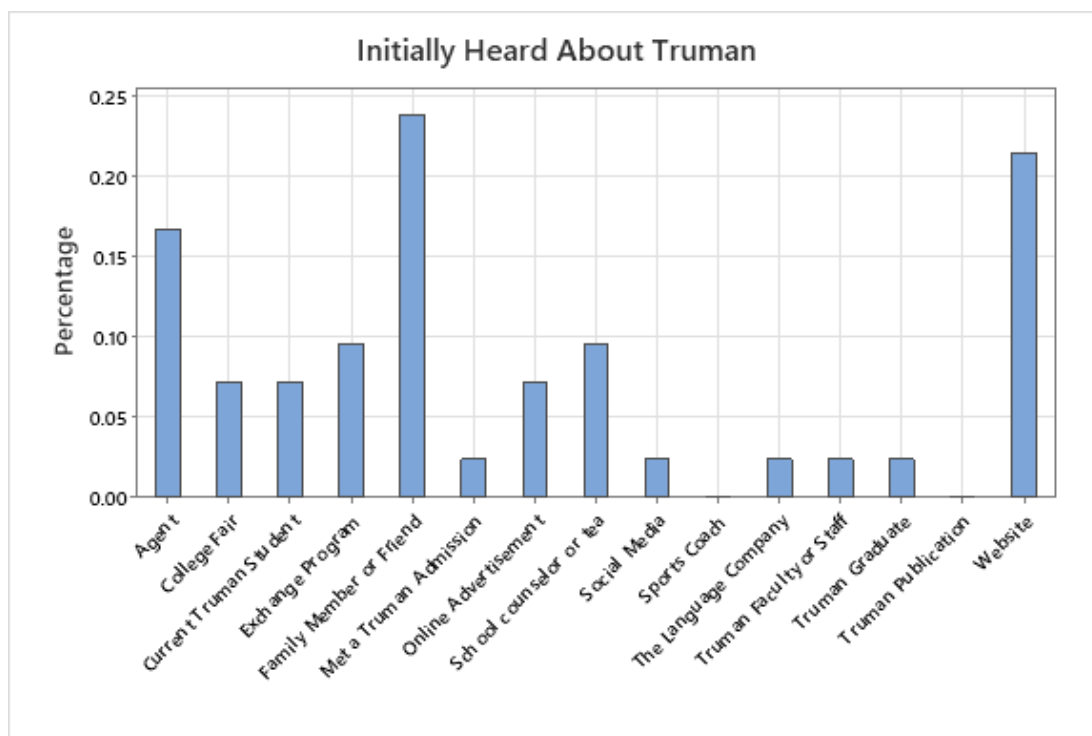


Figure 3

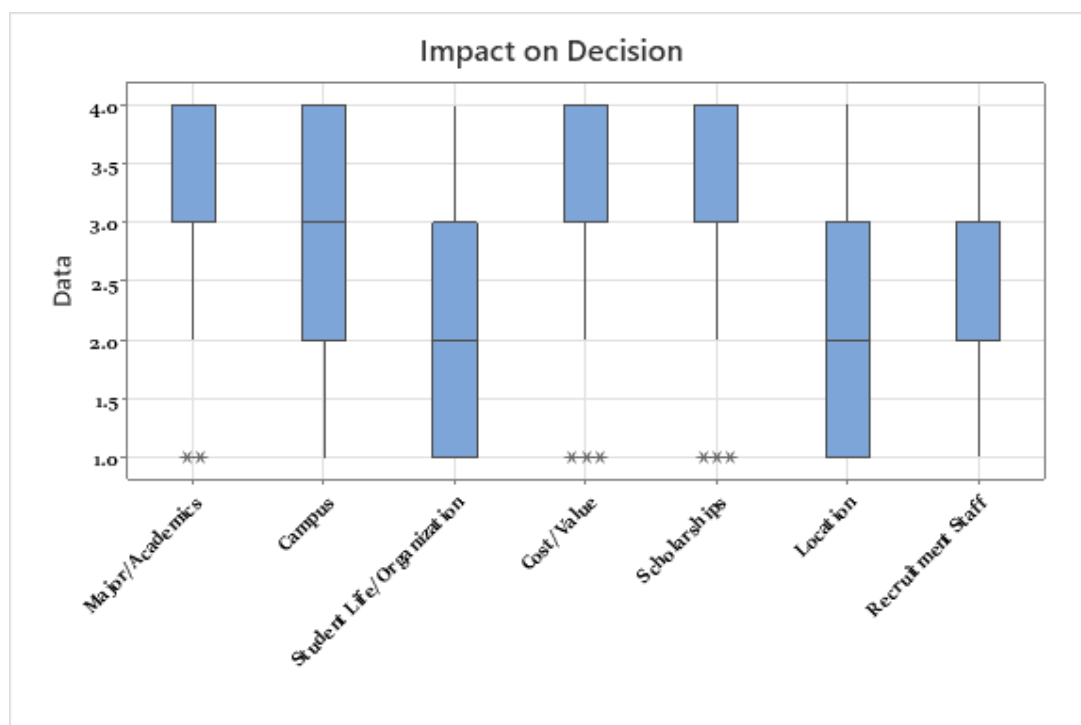


Figure 4

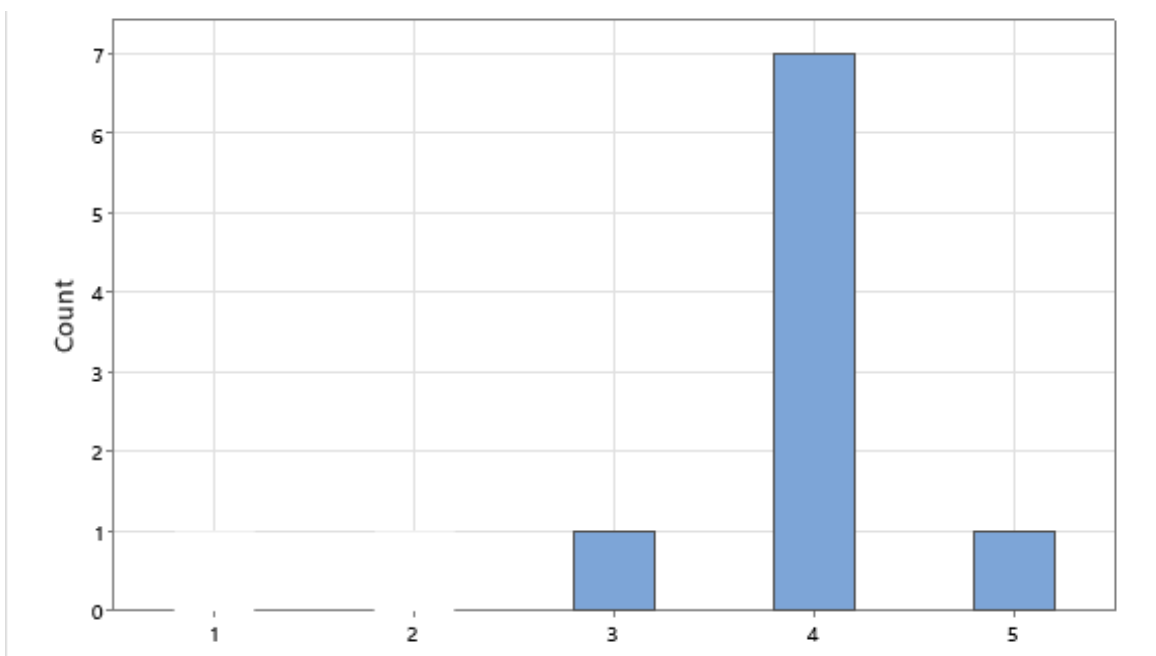


Figure 5

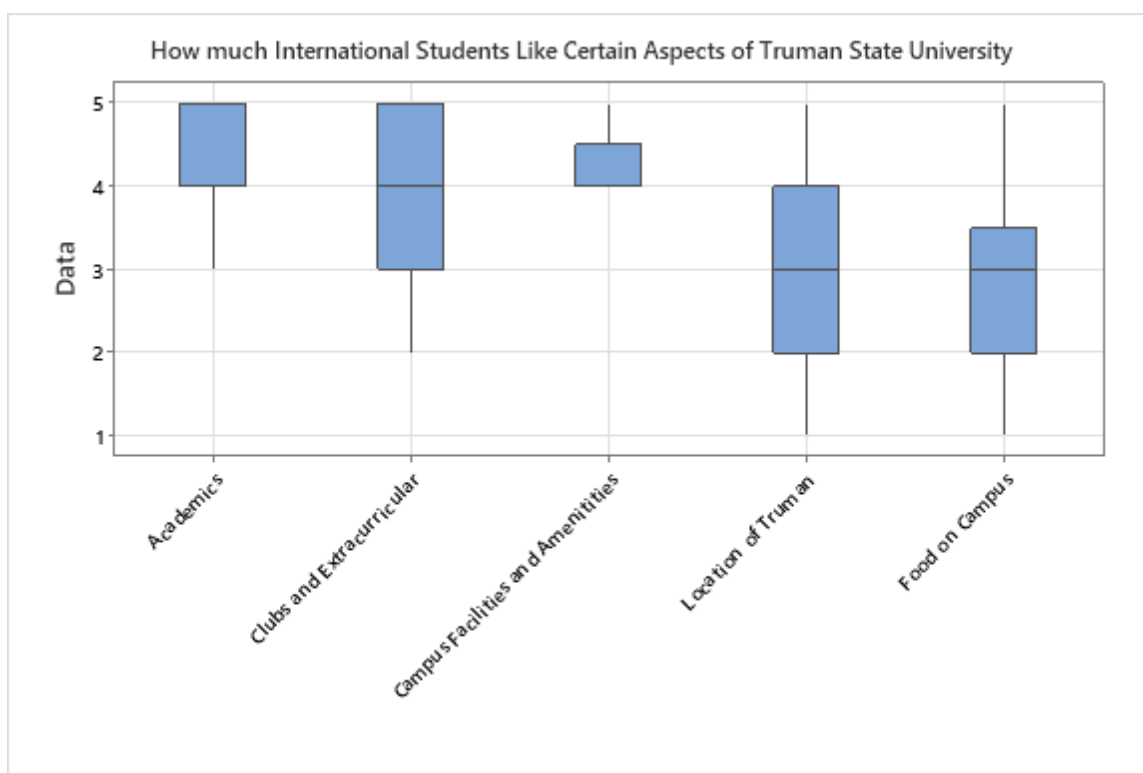


Figure 6

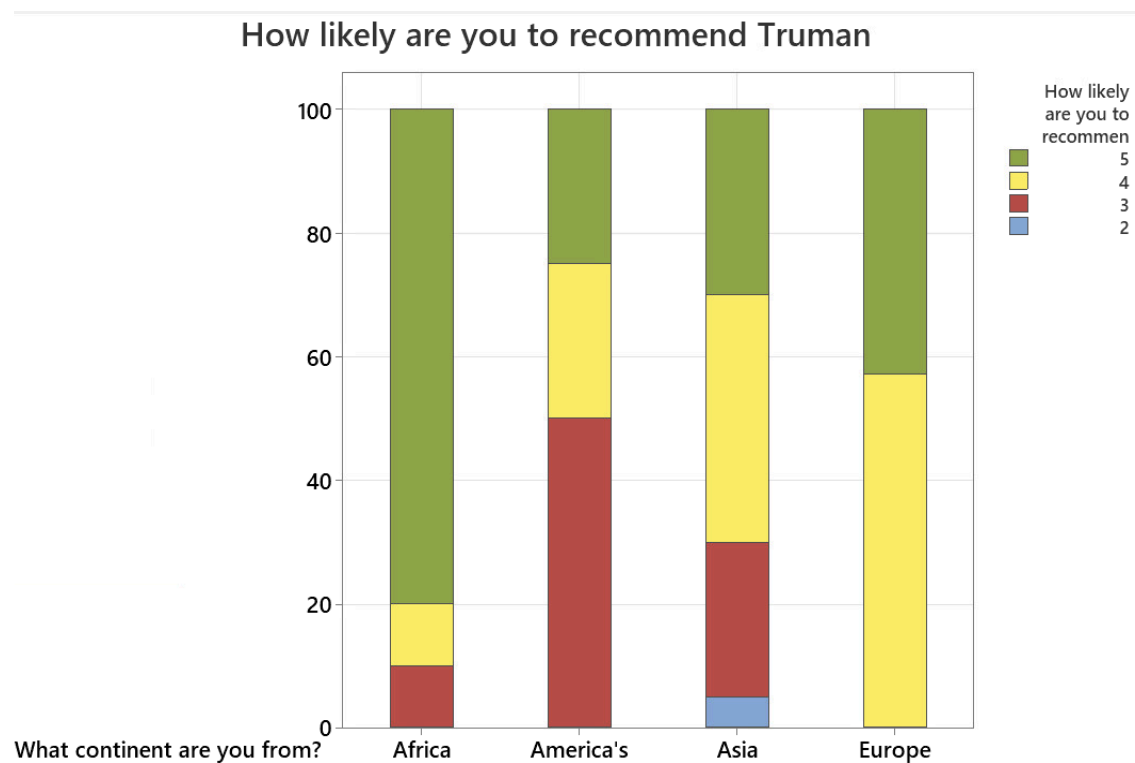


Figure 7

### Test

Null hypothesis  $H_0$ : All medians are equal

Alternative hypothesis  $H_1$ : At least one median is different

Method	DF	H-Value	P-Value
Not adjusted for ties	3	8.29	0.040
Adjusted for ties	3	9.49	0.023

*The chi-square approximation may not be accurate when some sample sizes are less than 5.*

Figure 8

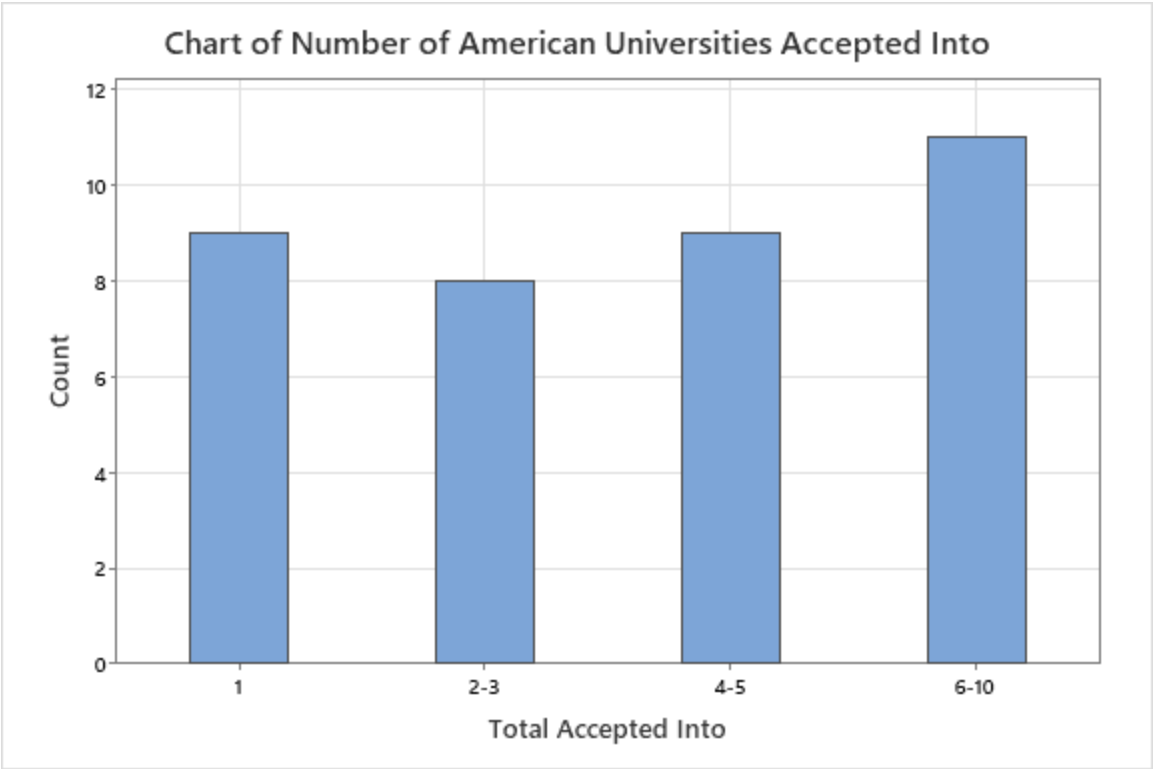


Figure 9

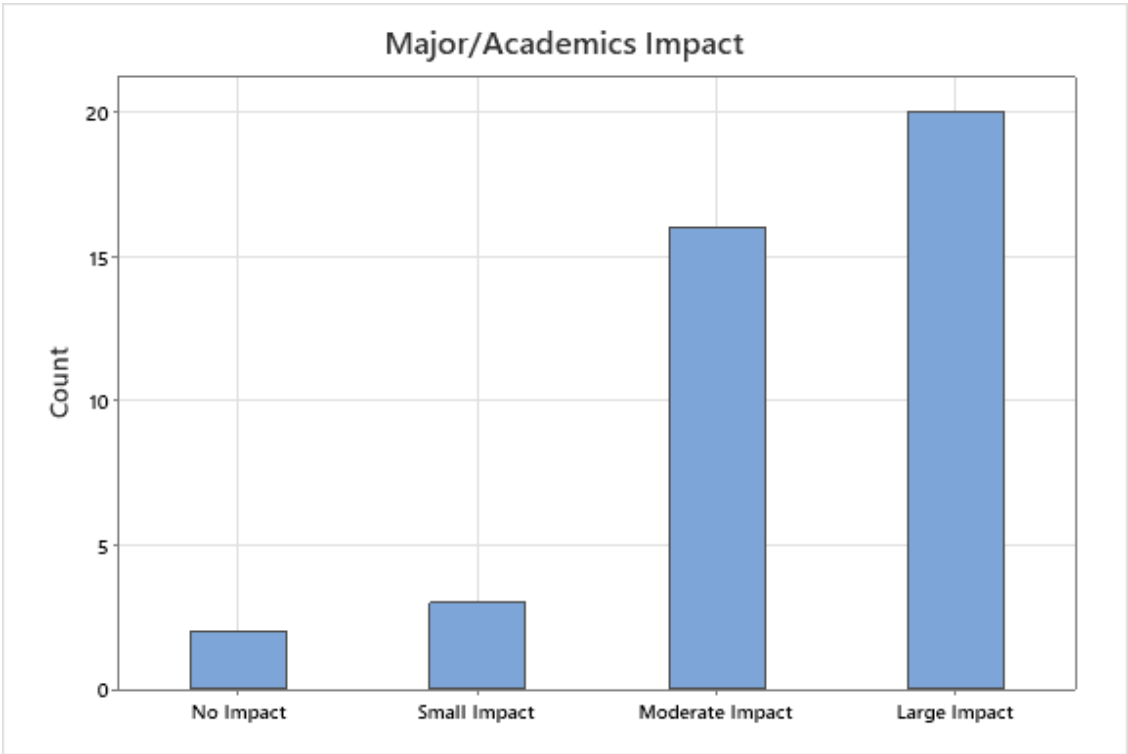


Figure 10



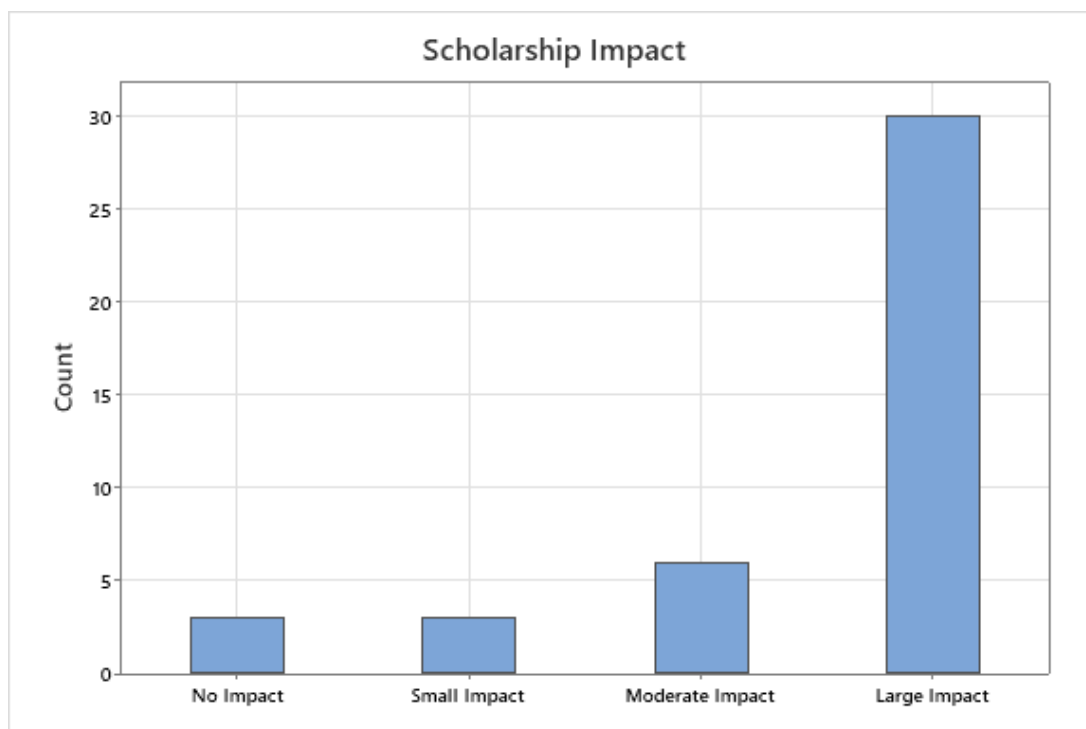


Figure 11

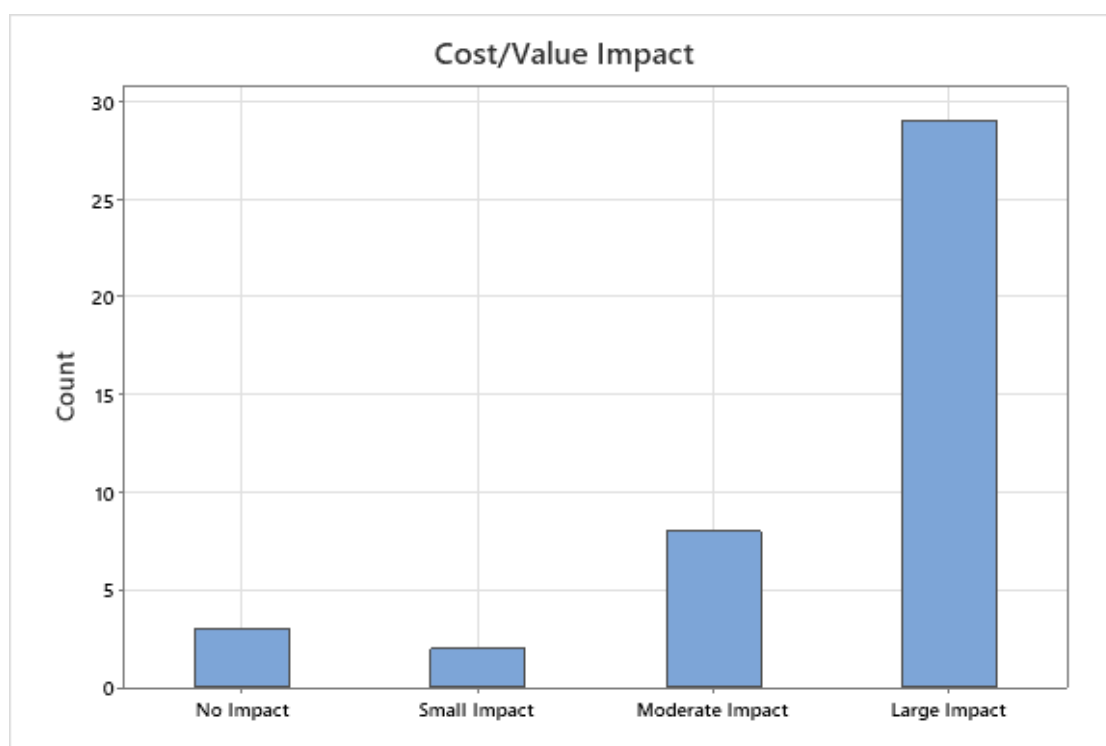


Figure 12

### Grouping Information Using the Tukey Method and 95% Confidence

Continent	N	Mean	Grouping
America's	4	4.00000	A
Africa	10	3.80000	A
Asia	20	3.55000	A B
Europe	7	2.57143	B

*Means that do not share a letter are significantly different.*

Figure 13

### Tukey Pairwise Comparisons: Continent

### Grouping Information Using the Tukey Method and 95% Confidence

Continent	N	Mean	Grouping
Europe	7	3.00	A
America's	4	2.75	A B
Asia	20	2.35	A B
Africa	10	1.70	B

*Means that do not share a letter are significantly different.*

Figure 14

## Appendix B: Survey Instrument

1. **What gender do you identify as?**
  - a. Male
  - b. Female
  - c. Other
  - d. Prefer not to say
2. **What is your major?** (select all that apply)  
-All Truman major programs listed as options
3. **What continent are you from?**
  - a. Africa
  - b. Asia
  - c. Australia
  - d. Europe
  - e. North America
  - f. South America
4. **What country are you from?** (open-ended)
5. **What city are you from?** (open-ended)
6. **How many semesters have you been at Truman before this semester?**
  - a. 1-2 (first year)
  - b. 3-4
  - c. 5-6
  - d. 7-8
  - e. 9 or more
7. **Which extracurricular activities do you participate in?** (select all that apply)  
-All Truman extracurricular activities listed as options
8. **Where did you initially hear about Truman State University?**  
-Common ways of students initially hearing about Truman and an “other” choice listed as options
9. **How big of an impact did each of these aspects of Truman State University have on your decision to attend?** (Likert scale, 1 through 4, Responses choose from options of No Impact, Small Impact, Moderate Impact, and Large Impact)
  - Academics
  - Campus
  - Student Life/Organizations
  - Cost/Value
  - Scholarships
  - Location
  - Recruitment Staff

- 10. How likely are you to recommend Truman State to a student that is thinking about attending a university?** (Likert scale, 1 through 5)
- Very Unlikely
  - Somewhat Unlikely
  - Neutral
  - Somewhat Likely
  - Very Likely
- 11. Before you came to Truman, did you have a friend or relative who already attended?** (Yes/No)
- 12. If you answered yes to the previous question, did this person have an impact on your decision to attend Truman?** (Likert scale, 1 through 5)
- Strongly Disagree
  - Disagree
  - Neutral
  - Agree
  - Strongly Agree
- 13. How likely would it be that you attended Truman if you didn't know anyone who already attended Truman?** (Likert scale, 1 through 5)
- Very Unlikely
  - Somewhat Unlikely
  - Neutral
  - Somewhat Likely
  - Very Likely
- 14. When choosing a university to attend, was Truman initially your first choice?** (Yes/No)
- 15. How many abroad universities were you accepted into?**
- 1
  - 2-3
  - 4-5
  - 5-10
  - 10+
- 16. What was your first choice of university?** (If Truman was your first choice, enter Truman) (open-ended)
- 17. Do you enjoy the following aspects of Truman State University?** (Likert scale, 1 through 5, Responses choose from options of Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree)
- Academic courses/classes
  - Truman clubs and extracurricular activities
  - Campus facilities and amenities
  - Location of Truman
  - Food on Campus
- 18. Would you like to share anything else about what drew you to Truman?** (open-ended)

**Appendix C: “Where did you initially hear about Truman State University?”****-Other Responses**

1. PIE Go campus
2. Someone from Truman came to ourschool with a guy from the american Embassy, I don't know his Title
3. Fiske Guide to Colleges

**Appendix D: “Would you like to share anything else about what drew you to Truman?” -Responses**

1. I love all my English professors and classmates here!
2. The supportive environment. Being able to reach out to my advisor, professors with problems and having counseling services
3. Some professors are really good and really care. I like being able to have a good relationship with them.
4. Truman Observatory, Planetarium, and one-to-one communication with the professors
5. Kirksville people are nice. People who works for Truman in the different departments are so nice and they help you to adapt yourself to the American work structure.
6. People are friendly, and trustworthy.
7. Me and my high school friends when we talk about our university, I feel like Truman provides support and truly cares and values their student. The amount of on campus job opportunities that we have here helps us to sharpen our skills and even develop new ones. So, I really enjoy being able to undertake different roles and explore a field or sector that I wouldn't if I was just pursuing my degree.
8. I like the international community and my Japanese minor program, they all provide me with warmth and purpose on campus. Cultural clubs are important also. The high courseload and grading structures of classes are less enjoyable.
9. I like how truman takes cares of you. They are always there to help you.
10. The people are very genuine and nice. It's been a delight to be here. Although Kirksville doesn't have much to visit around, I see this as a plus because I am really outgoing and would easily affect my academics.

**Appendix E: First Choice of Universities**

1. Truman State University (11 Truman State Response)
2. Georgia Southern University
3. University of Charlotte North Carolina
4. Stanford
5. Butler University
6. Georgia Southern Uni and SLU
7. University of Arkansas
8. University of Buffalo
9. Yale
10. Drexel University
11. Southern Utah University
12. Colorado College
13. Michigan State University
14. Augustana college
15. Duke
16. University of Arizona
17. Kanyon College
18. University of Charlotte North Carolina
19. Richmond University
20. California State University
21. Wichita State University