Quantifying Cool: Understanding Ways to Implement Houston's Most

Engaging Attributes into New Developments

Final Project Report

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Table of Contents

Executive Summary

This project is in partnership with the West Houston Association and Team Cool from Rice University. The main objective of this project is to assess the Greater West Houston Area to identify what locations, attributes and factors can be recognized as attractive or 'cool' from a tourism perspective and try to expand on the body of knowledge that past projects have already contributed to and help the West Houston Association create a better tomorrow.

Our group took the objective literally and set out to quantify the actual meaning of the word *"cool"* in relation to West Houston and its elements within. Our project and research were conducted in 4 major phases: preliminary research, survey development, implementation, data analysis, and the final project report. We began our surveying in the West Houston area and administered a survey at these popular hub spots: Katy Mills mall, Galleria, and Herman Park. We tried to find a correlation between what people think is cool and if it is located in that particular area. We also tried to find a subjective definition of the word "cool", and in doing so, we would serve as a stepping stone for future groups to use by asking survey questions like, "In 10 words or less describe what makes something cool", or "what makes your favorite spot in Houston cool and why?", and possibly "if a tourist were to ask for a recommendation in Houston, where would you refer them and why? ". After we collected all of the data, we analyzed the data to try and find if there were any similar characteristics, answers, or words that were being used by our survey respondents to help us try to quantify it's meaning and try to pinpoint the complexity of the word.

Our data analysis proved that there is a correlation between certain locations and descriptors for those locations. Our team recommends using our subjective definition in a real-

world application to influence Houstonians toward certain areas. We found that cool is merely "a trendy, worthwhile place that intrigues the consumer to spend time there". To further pinpoint a definition, we recommend using the chi-squared test and Fisher's exact test to causate the root of these descriptor-place pairs.

Introduction and Background

Project Statement

Since 1979, The West Houston Association has been a non-profit organization working to create a better living and working environment for the 2 million people who live, work, and play in the Greater West Houston area. They achieve this by collaborating, educating, and advocating to achieve the best quality of life, experience, and opportunity in the 1,000 square miles of the Greater West Houston area by promoting first-rate development, sustainable infrastructure, and long-term planning within that border. In the Fall of 2021, a Rice Consulting Practicum team created the first model for how to evaluate the"cool factor" of a particular region. They started by identifying four case studies that they considered "cool" and worked backward to identify their defining traits. Once the defining traits were found, they then took their model and tried it in 2 other areas around west Houston to see if what they found had any correlation between the traits they identified and the places they examined.

Then in the Spring of 2021, another group expanded on the subject by taking the data on top of what was found by the most recent group and pushed it even further by trying to make quantitative data by using Yelp statistics and a statistical analysis. The main key factors this study used to determine how 'cool' a neighborhood is were the food, shopping, and activities found within a target area. With the food and shopping, looking at three main factors, variety in cuisines or shopping stores, quality based on Yelp star ratings, and price range. Whereas

activities focus on the amount of 'things to do' in the area, which can include but is not limited to, parks, movies, and entertainment, sports, etc. They then took the individual scores and computed the average of these three factors to compare them amongst other Houston neighborhoods and areas.

The West Houston Association continuously seeks to improve their understanding of what makes an area or point of focus "cool", with the ultimate goal of being able to develop "cool" areas and improve quality of life.

Project Scope

The purpose of this project is to expand on past projects and to become a stepping stone for groups after us, so we can all build upon the body of knowledge for the West Houston Association to use and implement in making the Greater West Houston area a great place to be. This project focuses on quantifying the ever-changing definition of the word "cool", while also finding key factors and identifiables as to what makes something cool or a point of interest in regards to the West Houston area by surveying the population within.

Project Steps

Phase 1: Preliminary Research

When conducting our research, we first looked at the previous bodies of work set forth by the two previous research groups to further understand the overall study. The next step in our project was to describe and identify what events or places become categorized as cool and all other internal characteristics. To better understand this, we conducted research to understand the meaning of the word cool. What we found was that cool has an ever-changing meaning defined differently by each person. Just like beauty, coolness is in the eye of the beholder. However, the

word cool can be defined as an aesthetic of attitude, behavior, appearance, and style that is

generally admired. From there, we began the next phase of our research.

Phase 2: Survey Development and Implementation

We proposed a survey of random people in the Houston area to establish a correlation

between what is cool and what places are cool. We will then create a relationship plot that ties

the two main aspects together: location and "cool". After that, create a survey that is quick to

complete for subjects to do on the spot that should take no longer than 90 seconds to complete.

This would allow The West Houston Association to develop methods in order to categorize

cool spots for the future and to get an idea of what the public deems as cool and why. Once the

survey has been created, we then will go to five different spots around the city, such as malls

and parks, where we can get a good demographic disparity and gain access to a plethora of

people at once. Our target response number ranged from 200-300 survey respondents. Once we

reached our desired number of respondents, our next step was to do a keyword analysis and see

if there are any words or phrases that came across our data more than one time.

Phase 3: Data Analysis

Within our survey, there are three sections. The first section consisted of the informed

consent and IRB notice, followed by our demographic questions (age, gender, kids, etc.), then

finishing off with the section that asks the participant to explain coolness (what they think is cool

and why, their favorite spot in Houston, and their own definition of cool). After meeting the

quota for the number of respondents we set, we then used a keyword analysis to determine the

number of times a word has been used and evaluate the context, which then allows us to conduct

a statistical analysis to find which keyword or phrase appeared most often. This will help to

determine the correlation between respondents' answers, thus helping us to understand what

consumers and the general public define and characterize as being cool. Once the most important factors affecting an area's appeal were determined, we then created different graphs to help display our results to the West Houston Association.

Phase 4: Final Project Report

Once all of our research was conducted and all of the data was finalized and assessed, we then created a final deliverable to share with the West Houston Association. Within our final deliverable, we presented our findings from both the open-ended and closed-ended survey formats. Then, we showed what the influence behind "cool" things are in the Houston area and how this can be implemented and used to improve the West Houston area. Our survey data will help to analyze why people think places or events are "cool", and allow for the West Houston Association to build upon the coolness of the area based on the reports given by consumers.

Data Collection

Methodology of Approach

After reviewing the two previous projects, and speaking closely with our clients, we wanted to take a new approach that would specifically allow us to analyze what the people of Houston find most appealing about specific locations. After several group sessions, we came to the conclusion, that to truly understand what individuals, specifically Houstonians, thoughts on "cool" were, we would need to hear from them first hand. Thus, we created a survey that would collect information about their demographics while simultaneously learning about their definitions of "cool" and what they find attractive about specific local neighborhoods. With this information gathered, we would analyze the frequency of specific keywords, while also learning if specific areas of Houston were "cooler" than others. With our decision of using a survey to

gather our data, it was crucial to format it in such a way that people would stay engaged and reply in an honest manner.

Survey Format

With this survey being the foundation of our data collection, it was necessary to research how to create the perfect format to encourage engagement and response frequency. Qualities of a well-designed questionnaire include: easy to comprehend, appropriate length and number of questions, appropriate form of administration, relevant to the population being surveyed[1]. One quality we specifically focused on was the duration of the survey. Major study, conducted by web-based survey giant "Survey Monkey," found that the more questions in a survey, the less time the respondent spends answering each question, which is known as "speeding up" or "satisficing" through the questions.[2] This leads to the quantity and reliability of the data which was something we wanted to avoid as much as possible.

As a group, it was determined that qualtrics would be the most reliable form of administration for our research. This platform allowed us to specifically design every detail of our survey and input the necessary information. The opening section of the questionnaire included the Rice logo (to show legitimacy), the title of the study, researcher's information, as well as the online consent form. The consent form gave information to the participant about the confidentiality of the study as well as any risks that may be associated with participation. Once they agreed to proceeding and were aware of the conditions of the survey they were able to begin.

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[1] Sharma, Hunny. "How short or long should a questionnaire be for any research? Researchers' dilemma in deciding the appropriate questionnaire length." *Saudi journal of anesthesia* vol. 16,1 (2022): 65-68. doi:10.4103/sja.sja_163_21

[2] *How much time are respondents willing to spend on your survey?* [Last accessed on 2021 Feb 17]. https://www.surveymonkey.com/curiosity/survey_completion_times/ [Ref list]

Our survey consisted of four demographic questions located on the first section. Each was very straightforward and simple that could be answered in a matter of seconds. Most people have no concern with answering this type of information as it was anonymous. With the ability to answer the first couple questions with no thought, we projected that our respondents would still be engaged with our short answer questions on the following page.

The next and final section of the survey consisted of the four questions that were crucial for gathering the data needed for our analysis. Each of these questions were short answers requiring one word to a short sentence. With this format, it gave us the ability to gather keywords and count the occurrences of specific words used to describe what "cool" meant to them. Additionally, the short answers gave us more detail about their perspective about the topic.

Overall, the survey had a completion time of 90-120 seconds. It was able to be easily distributed and accessed through a direct link or a physical QR code printed onto a sheet of paper. Many people were responsive to participate due to the ease and efficiency.

Survey Information

As mentioned above, the survey only consisted of four demographic questions and four core content questions. We chose specific questions that would directly pertain to the information we sought to analyze and give us the ability to keep the survey short.

The demographic portion began with asking the participant's age. Defined within ranges, this information would become helpful when analyzing the correlation between age and what they believe "cool" to be. Additionally, West Houston Association could use this data and the demographic information of current areas or possible new development sites. Additionally, collecting information about age allowed us to track the distribution of responses we were able to

obtain. Similarly, when gathering information about the participants' gender, it was necessary to track the response rate from men and women.

Next, we asked about the participants's familial status, specifically if they had children. This question allowed us to learn if people in specific demographic groups with children found things or places more "cool" if they were in a location suitable for them and their kids. Parent's often put the consideration of their children at the forefront of their thinking so we felt that this question would be useful in understanding that correlation. West Houston consists of several major cities with a large demographic of families. So when considering implementing "cool" aspects into their communities, this could be an important factor to consider.

Our final question was the residential status of the surveyee. The options included:

1. Houston Native

2. No, but knowledge of the city

3. Tourist

This question allowed us to determine which respondents had the best understanding of Houston and who may only know the surface level aspect of the city. For natives and people who may have lived in Houston for three or more years, they have learned about specific neighborhoods, what they are known for, and what makes them interesting. It was also interesting to gather information about where tourists had visited and why they chose that particular location.

As for the next four questions, we first wanted to ask what their favorite "cool" spot is to visit in Houston. This could be a specific location, neighborhood, or space. With this question, we hoped to gather information on what types of locations people are interested in when

choosing an area to visit. Additionally, for future projects, students can research further about the specific locations that were reoccurring in the response.

The following questions asked for the respondent to explain why they chose the answer they gave. From this, we hoped to examine the key words mentioned and see if there was a recurring pattern amongst responses. Similarly, the next question asked for the individuals to define the word "cool" so we could use the same process as we would above. Additionally, we wanted to be able to compare the responses and the words used when correlating "cool" as a word but also when it is associated with a specific thing or location.

Finally, the survey concluded with a question regarding where they would suggest a tourist to visit while in Houston. This was supposed to be a unique way of learning more about what Houston natives see as interesting and unique in their own city. These responses would also be analyzed similarly to their favorite "cool" place to visit.

Collection Sites

After discussing with the client the response expectations we constructed a map of several populated areas throughout greater Houston that would allow us to gather diverse and extensive data with our survey. From this, we narrowed down about five primary locations that we believed would have the most traffic during all times of the day. Three of the locations chosen were malls, and the other two were large parks. Malls gave us the ability to easily interact with a variety of people who were entering or exiting.

The three mall locations included:

1. **Katy Mills Mall:** Katy Mills is a shopping mall in Katy, Texas within the West-Houston metropolitan area. It covers 1.3 million square feet with over one hundred different

storefronts. Katy is a suburb of Houston with a population of 20,296 and is in Waller

County. The demographics of the area is: White (Non-Hispanic) (59.4%), White

(Hispanic) (16.6%), Other (Hispanic) (7.44%), Black or African American (Non-

Hispanic) (7.09%), and Asian (Non-Hispanic) (3.15%)[3].

2. **City Centre (Memorial):** CityCentre is a mixed-use development in the Memorial City

   district of Houston, Texas, located at the southeastern corner of the intersection of

   Interstate 10 and Beltway 8. It is set in the former Town & Country Mall location in West

   Houston, this 37-acre CityCentre community blends retail, restaurant, office space,

   luxury living and nightlife in an open-air environment.

3. **Galleria Mall:** Galleria Mall is an upscale mixed-use urban development and shopping

   mall located in the Uptown District of Houston, Texas, United States.The development

   consists of a retail complex, as well as the Galleria Office Towers complex, two Westin

   hotels, and a private health club. It is also recognized as the largest mall in Texas and

   seventh largest in the country with three million square feet of leasable property.

Moving on, the following two main park locations were:

1. **Hermann Park:** Hermann Park is a 445-acre urban park in Houston, Texas, situated at

   the southern end of the Museum District. The park is located immediately north of the

   Texas Medical Center and Brays Bayou, east of Rice University, and slightly west of the

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[3] https://datausa.io/profile/geo/katy-tx/

Third Ward. Hermann Park includes a Golf Course, the Houston Zoo, and a 2-mile train track for the Hermann Park Railroad[4].

2. **Memorial Park:** Memorial Park is a municipal park in Houston, Texas, is one of the largest urban parks in the United States. Opened 98 years ago in 1924, the park covers approximately 1,466 acres (5.9 km^2) mostly inside the 610 Loop, across from the neighborhood of Memorial. Memorial Drive runs through the park, heading east to downtown Houston and west to the 610 Loop[5].

Both of these locations were chosen because of their location and magnitude. These are two of the most visited parks within Houston, which would give us an increased sample size. Again, we spent around 2-4 hours in the parks, however we went individually. We wanted to ensure that we captured responses from answers at different times of the day to diversify the types of people we were talking to. In the morning/afternoon, we saw a larger group of mothers and their young children because of the work and school hours or older aged, possibly retired, individuals. After 5:00pm we encountered more young adults or working class people who just ended their job and wanted to be outside. Expanding our time range allowed us to interact with groups we may not have seen if we went at a different time. This was extremely beneficial when looking forward to the results.

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[4] https://www.hermannpark.org/plans-projects/the-commons-at-hermann-park/

[5] https://www.houstontx.gov/parks/parksites/memorialpark.html

Findings

We ended our survey collection process on November 22, 2022 with a total response count of 205. With the given timeline and stipulations for the survey, we knew responses would be slightly lower than the standard research protocol. However, our responses gave us a great baseline for research exploration.

Demographic Findings

For the average age of our survey respondents, 18-24 years old occupied the largest portion of the population with 36.10%. The next highest age group was 25-34 year olds holding 27% of responses. Overall, 80% of respondents were between the ages of 18-44 years old. While reviewing the data, we could see that there was a much higher response rate from younger generations. While this was not intentional, the nature of the survey is more interesting to younger aged individuals. The concept of "cool" and implementing new concepts into developments is a discussion far more intriguing to individuals who like exploring the city and have not yet settled in one specific area. We were not concerned with the responses coming primarily from younger generations because their input is likely more useful to the conversation.

Average Age of Survey Responders

18-24 years old
25-34 years old
35-44 years old
45-54 years old
55-64 years old
65+ years old

0   20   40   60   80
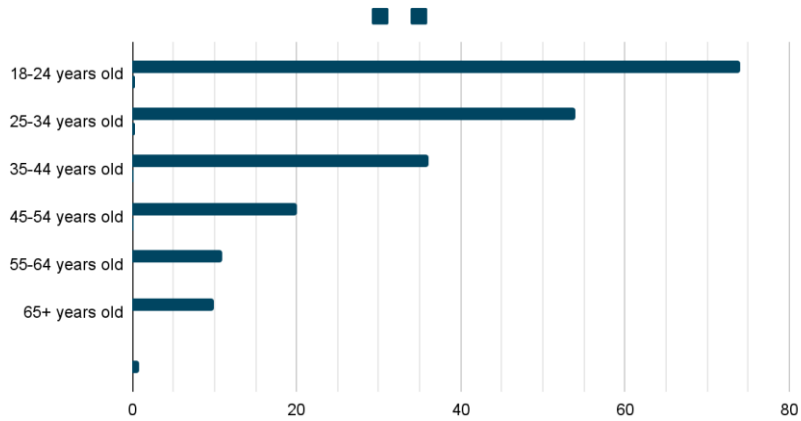
Overall, the ratio of men to women respondents was nearly equal. 50% of respondents were men, 46% of respondents were women, and 4% preferred not to answer. Gender does not play a significant role in the efficacy of the survey however we were pleased to have equal representation of the respondents.

Gender of Survey Responders

Prefer Not to Answer
3.4%

Male
50.7%

Female
45.9%
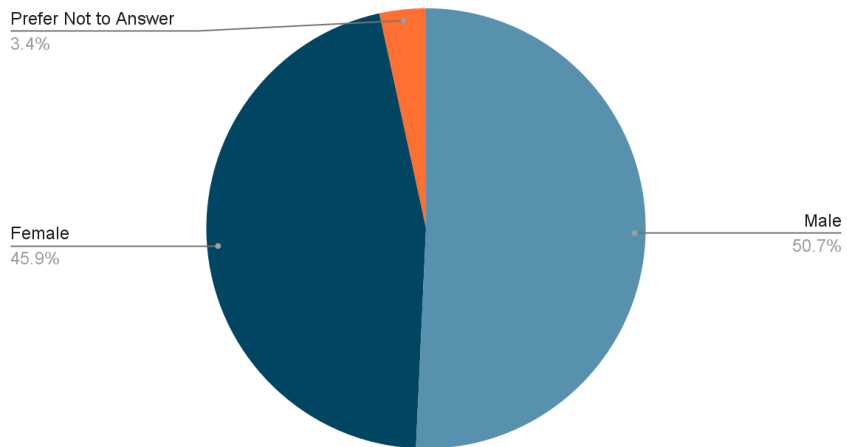
For the next demographic question, we saw that only 18% of respondents had children. This also aligns with the strong response rate from young adults. As mentioned above, we felt that this was important to ask because parents often cater to their child's needs and it would most likely cause them to answer with a biased response. With such a low number of respondents with children, there will be a decrease in the number of possible biased parent responses.

Finally, we wanted to analyze where the respondents were from and if they were knowledgeable of Houston. Overall, 52.4 % of the respondents recorded that they were native to Houston. 31.6 % of the respondents answered that they were not native to Houston, but they feel strongly that they are knowledgeable of the city. Finally we had 16% of respondents being tourists or new to the city. With a high response rate coming from individuals knowledgeable of the city, we were able to gather more concrete information about what specific Houston locations are considered "cool". Additionally, with a subject group that had a majority that understood the different neighborhoods, restaurants, museums, etcWe were able to gather applicable data that West Houston could use.

Qualitative Research Questions

Our first question we asked was: What is your favorite "cool" spot to go to in Houston? *Could be a restaurant, neighborhood, park, etc.* We found that 35.7% of people responded with a location that was a restaurant. Restaurants of the locations varied however some of the recurring areas were Rice Village, Montrose, and The Heights. The next popular response were different bars located throughout the city. 25.6% of surveyors answered with bars throughout the city with the most popular locations being Midtown, Washington Ave., and Montrose. Additionally, 12% of people answered with parks, 11% answered with sporting venues, and 9%

answered with different malls around the greater Houston area. The remaining 6% of

respondents answered with a subject that did not fall under any of the categories listed above.

Types of Location People Consider Cool
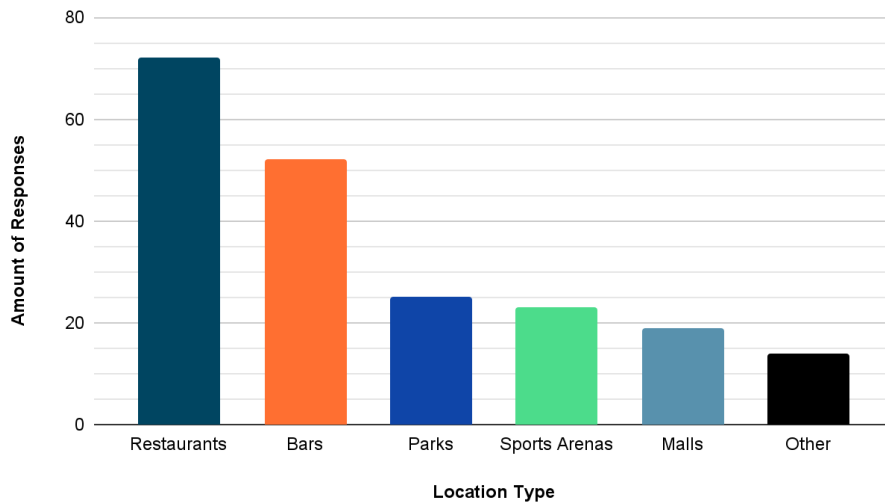
Using ten words or less, we asked participants to define cool or give a synonym to the

word. From those answers, we searched for the key descriptors that we could compile data with.

Of the 205 responses, "trendy" was the most popular word used to describe what cool means to

them or why they think a chosen location or area is "cool". We found that nearly 14% of answers

used the word "trendy" in their responses. The next two words with the highest percentage of

frequency were "intriguing" (11.22%) and "worthwhile" (9.76). There were various other words

used such as: refreshing, clean, enjoyable, new, and fashionable. All of which had the same

general meaning. Our biggest takeaway from this data, is that when building a new

neighborhood, shopping center, or even a park, it is important to have factors that make it stand

out from others in the area. To also include little aspects that anyone of any age could appreciate.

In further iterations of this project, researchers can investigate the specific factors that should be considered when looking to make something more "cool".

Word Response Frequency
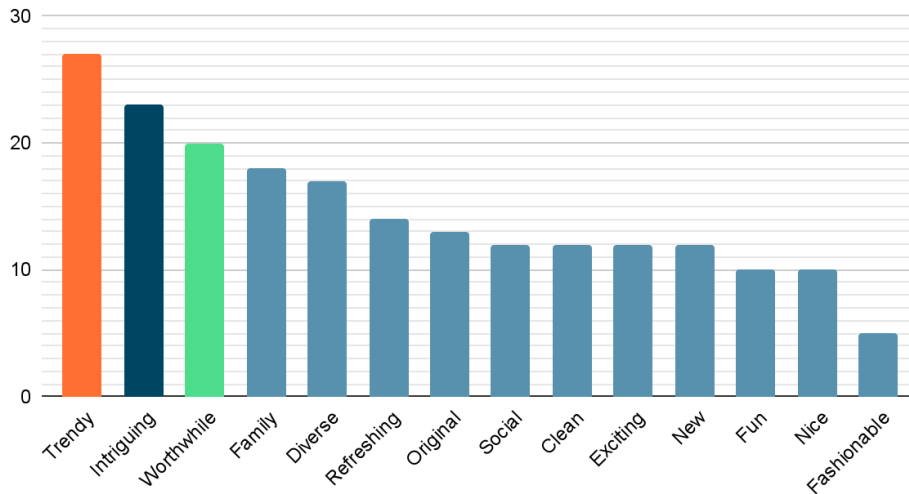
Similarly, we asked individuals to use a few words to describe why the places or items they chose are "cool". Of those responses, we received very similar results to the question discussed above. However, several new words were used repeatedly throughout the answers. Three of the most popular are as follows: diverse (15.2%), activities (12.7%), and interactive (10.1%). Also, many of the other key words listed were synonymous with an enjoyable environment that had some sort of interactive matter. Matter included live music, shopping, restaurants, or bars.

Recommendations

<u>Key words</u>

Our survey findings reported many key descriptors. When asked to use a single word to describe what is cool, the top five answers, in order, were Trendy, Intriguing, Worthwhile, Family, and Diverse. With a total count of 205 responses, we see that the five highest stated descriptors account for roughly 49% of the total responses. This leads us to focus on these key words for our analysis.

<u>Cool as a Descriptor</u>

When deciding the questions we wanted to ask to determine the most common language used around the word "cool", we specifically looked at phrasing the questions with short, string answers. In order to make use of our responses, we needed to easily and quickly understand the type of data we were collecting. For example, if we were asking for a certain number of times somewhere that was considered cool, then we could do some data analysis with continuous data. However, in our analysis, we wanted to use discrete data: characters and strings or phrases that can be categorized into groups to be used for later types of testing..

<u>Analysis</u>

Specifically looking at our collected data, the best tests would be to conduct the chi-squared test or a Fisher's exact test. Rather than conducting those and establishing causation to the different places, words, age groups, and genders to what is cool, we focused on correlation; or the similarities between the respondent's answer choices. The reason we wanted to find correlation was because we did not have survey data available to us. Our project is meant to be a stepping stone for future research that can turn our recommendations and data into a more

scientific relationship: causation. Causative results are often more effective and precise, but require more analysis and longer research time. With the semesters worth of data we collected, future project groups can and will be able to causate the descriptors to what is cool in the West Houston area.

Future Steps

Progress from Previous Projects

Our goal for the semester was to build upon the knowledge of past projects and continue the data collection for a future group to analyze the data further. We see that with three semesters worth of data now, the next groups will be able to help the West Houston Association in implementing the data for real world use.

Limitations

As studying one of the small regions in the large area of Houston, our data cannot extend past the West Houstoun boundary. Our data collections sites were west of downtown and we cannot guarantee any correlation for the north, south or east sides of Houston. The areas that are analyzed in our data collection all tend to be trendy on the westside of Houston.

Furthermore, as a group of three student-athletes, we cannot gather the largest data size as a company could, but 205 responses seems large enough to make statistically significant conclusions. The threshold we learned from our class is generally anything over thirty responses can make a statistically significant difference.

When it comes to bias, we encountered two types of bias in our survey: selection and question order bias. Selection bias refers to the types of people that we surveyed. When asking

respondents to answer the survey, we tried to not pick anyone in particular, because we wanted

to achieve the most representative group we could obtain in order to understand what Houston's

definition of cool is. Question order bias refers to the ordering of the questions within the survey,

which can sometimes deter people from answering truly towards the end of the survey. If the

opening questions are long and hard to answer, then their effort and energy will be put towards

those and then towards the end of the survey, they will more likely answer quickly and to the

point. In our survey, we stuck with three short questions in order to maximize the quality of

response.

One variable we looked at was the length of the survey. Our team tried short versions of

the survey and longer variations, however, we found that the length ultimately didn't matter as

long as we made the questions easily readable and answerable. Another variable we looked at

diminishing was the honesty factor and whether or not the respondent felt their answer was not

going to satisfy our needs. This was a big factor we tried to mitigate because if myself and

Cameron walked up to a surveyee and asked to answer the questions, the respondent can have a

different opinion than if only Ellie approached the subject. Our biggest way of mitigating this

was to ask people by ourselves and the other two group members would be nearby watching and

taking notes. The last variable we determined could affect our survey was the answer type.

Answer type was a small piece of the puzzle, but still important, because we did not have to deal

with it as much as future project groups will, however, we tried to be consistent with collecting

discrete data, rather than continuous data. If we were to mix up our data types, the analysis

section would be much more difficult and harder to correlate.

Lastly, something for future thought, the type of analysis we would conclude to be done

on our data. As a team we suggest a Fisher's Exact Test or a Chi-Squared Test to determine the

best matching phrases from the survey. For example, what was cool compared to someone's

definition of cool. These two tests would allow for better correlative results, specifically when

implementing the findings into the real world.

Data Implementation

As our analysis and recommendations have shown, the objective is to help the West

Houston Association with implementing something that is cool into the real world for the benefit

of the West Houston community. Our project took responses from Houstonians and turned it into

analytical data for a correlation to be formulated. Our recommendation is limited to the amount

of correlation gathered, however is not as strong as undergoing the above mentioned tests.

Nonetheless, future teams will be able to correlate what is cool to words, places, or things.

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