Cyclistic Bike-share Data Analysis: Key Findings and Recommendations for Increasing Annual Memberships and User Engagement

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Executive Summary

Cyclistic can employ various strategies to increase annual memberships and user engagement. These include highlighting the cost-saving benefits of biking, introducing a "commuter" membership option with tailored benefits, implementing a referral program, curating bike routes showcasing popular tourist attractions, launching targeted marketing campaigns during peak riding seasons, collecting data on casual riders' motivations, and creating rider archetypes. Additionally, leveraging influencer marketing by collaborating with aligned influencers and tracking campaign effectiveness through engagement, conversion rates, and brand mentions can further enhance Cyclistic's marketing efforts and attract new users.

Introduction

The following data analysis report presents key findings and actionable recommendations derived from an in-depth study of Cyclistic bike-share data from March 1st, 2022 to February 28th, 2023. Cyclistic, a bike-sharing company operating in Chicago, faces the challenge of increasing annual memberships and enhancing user engagement. By analyzing the available data, this report aims to uncover insights into user behavior, identify usage patterns, and propose strategies to optimize operations and drive growth.

The study focuses on understanding the usage patterns of Cyclistic bikes, particularly differentiating between annual members and casual riders. By examining these user segments, we aim to explore strategies to encourage casual riders to transition into annual memberships, thereby fostering long-term loyalty and generating sustainable revenue for Cyclistic. Additionally, the analysis aims to identify the motivations behind casual riders' decisions to purchase annual memberships and investigate the effectiveness of digital media marketing strategies in influencing their conversion.

This report begins by outlining the key questions addressed in the analysis and provides a summary of the major conclusions derived from the findings. Subsequently, the body section delves into each question, presenting a comprehensive analysis of the data, statistical methods employed, and the resulting conclusions. Through this process, we aim to uncover valuable insights that can guide decision-making, inform strategic planning, and enhance Cyclistic's performance in the competitive bike-sharing market.

The conclusion section restates the questions posed in the introduction and summarizes the primary conclusions drawn from the analysis. Furthermore, it serves as a platform to discuss

additional observations, potential future work, and the implications of the findings. By examining these aspects, we gain a deeper understanding of the data and generate actionable insights that drive meaningful improvements within the organization.

Throughout the report, graphical and tabular representations of the data will be utilized to enhance clarity and facilitate efficient communication. To maintain the flow of the text, additional tables, graphs, and technical details will be moved to the appendix section.

By conducting this comprehensive data analysis, we aim to provide Cyclistic with valuable recommendations and insights to optimize operations, increase user engagement, and maximize the company's marketshare in the bike-sharing industry.

Body

Analysis

The analysis aimed to identify behavioral variations between casual riders and annual members. Key findings indicate that annual members tend to ride more frequently during rush hour, suggesting a strong correlation with commuting. In contrast, casual riders are more inclined to engage in leisurely activities, such as sightseeing and visiting popular tourist destinations. Additionally, casual riders exhibit higher weekend usage, while annual members demonstrate greater activity on weekdays. Notably, casual riders tend to engage in longer rides on average, indicating a preference for leisure or exercise purposes. This observation is further supported by the higher occurrence of round-trip rides among casual riders, where the ride starts and ends at the same station. Overall, these findings shed light on the distinct behavioral patterns exhibited by casual riders and annual members, contributing to a deeper understanding of their motivations and preferences.

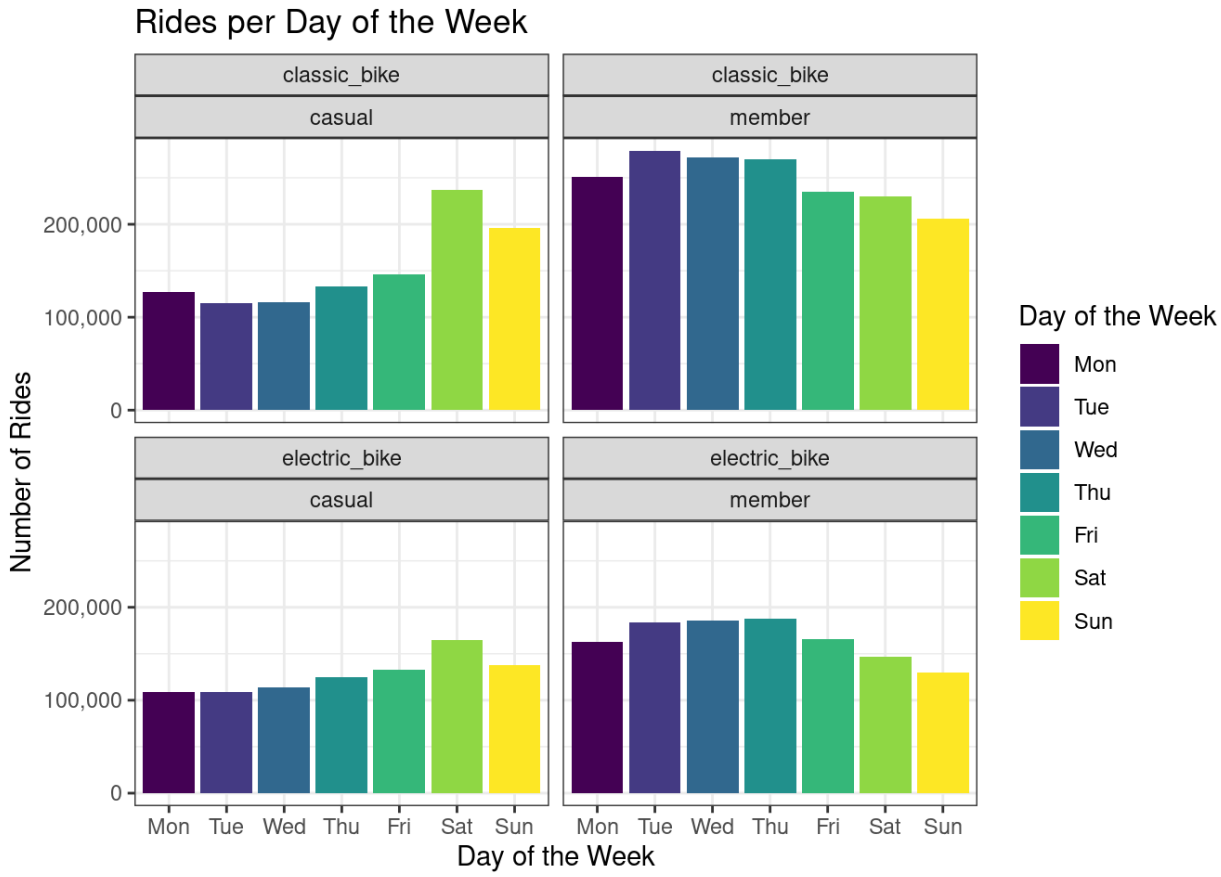
The analysis explores reasons why casual riders may opt for an annual membership. Factors such as cost-effectiveness, health benefits, and environmental impact of cycling can be influential. **App features like ride stat sharing and group rides can also create a sense of community among members. Paying once and riding all year simplifies the experience, particularly for commuters.** A one-month trial membership can address commitment hesitations, while a rewards program can incentivize non-members and increase engagement among members.

Cyclistic aims to use digital media marketing strategies to convert casual riders into annual members. This can be achieved through various tactics. Firstly, enhancing the app with social media features and exclusive rewards for annual members creates a sense of community and urgency. Secondly, targeted email campaigns based on user data can personalize promotions and highlight popular routes. Thirdly, engaging social media content, influencer collaborations, and targeted advertising can reach a wider audience and showcase the benefits of annual membership. Limited-time promotions and referral incentives further incentivize casual riders to become members. Leveraging customer reviews and testimonials helps build trust. Lastly, tracking key metrics allows for campaign optimization and improved conversion rates.

Behavioral Variations Between Casual Riders and Annual Members

Four bar charts were created, measuring the number of rides on the y-axis and the days of the week on the x-axis. Charts were created for each combination of bike type (classic or electric) and for each membership type (casual rider or annual member).

Figure 1.

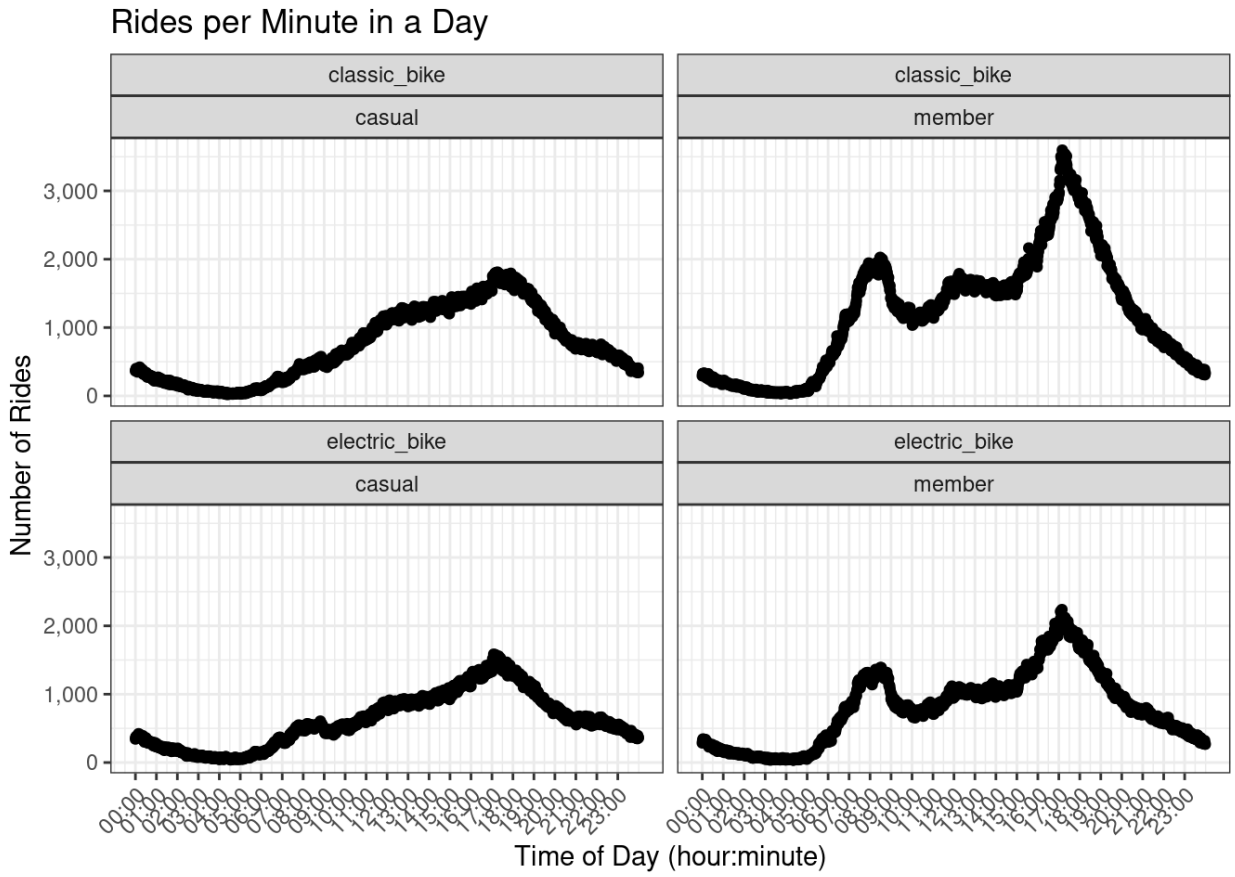


Annual members tend to use Cyclistic bikes more frequently on weekdays than on weekend days. The opposite is true of casual riders, who tend to ride more on weekdays. This is most likely due to Annual members using Cyclistic bikes as a means of commuting to and from work. This is further supported by the following graph of Rides per minute in a Day. This cost effective behavior can be promoted to casual riders as a means of saving money on gas.

Furthermore, regular cycling of at least 2 - 4 hours a week has been shown by BetterHealth.vic.gov and The University of Montana to achieve a general improvement to your health, and cites many health benefits, further explained later in the report.

Four scatter plots were created by plotting the time of day for which each bike ride started on the x-axis and the number of rides per minute on the y-axis. Graphs were created for each combination of bike type (classic or electric) and for each membership type (casual rider or annual member).

Figure 2.

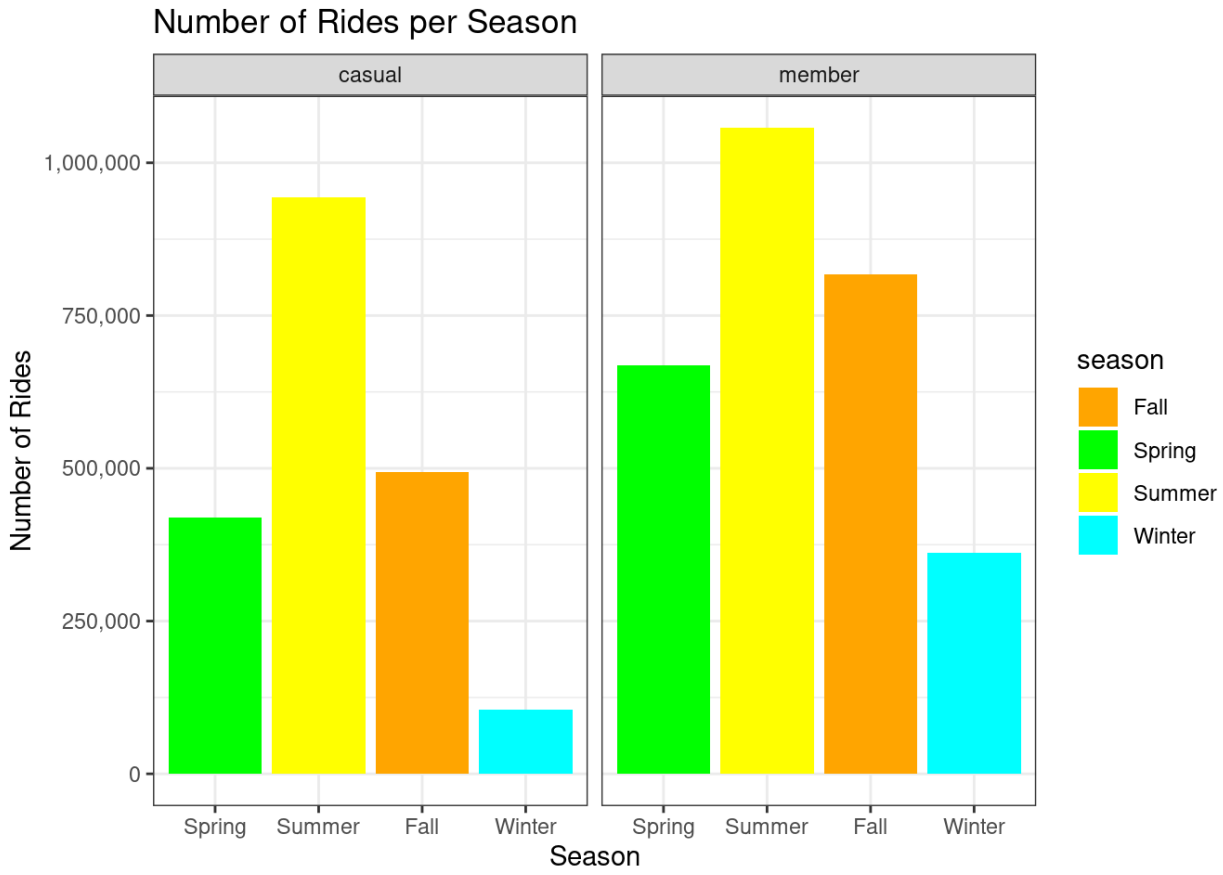


Annual members have two distinct spikes in activity, one corresponding to the morning Chicago rush hour, and one corresponding to the evening rush hour. Furthermore, a small spike can also be seen between noon and 1 pm, corresponding with lunch breaks. **Activity at these times is also popular with casual riders, though not to the same degree. Knowing this, Cyclistic can create a targeted ad campaign encouraging casual riders to save money by signing up for the annual membership, and use Cyclistic bikes to commute to wor**k.

For breakdown of data by bike type, member type, and day of the week, see the appendix (Figure 7. on page 12).

Two bar charts were created to demonstrate the number of rides per season. Season was plotted on the x-axis and number of rides on the y-axis. Graphs were created for each membership type (casual rider or annual member).

Figure 3.



A cursory glance at the number of rides per season reveals several things. We can see that annual members ride more frequently in all seasons than casual riders, especially in winter. We can also see that regardless of membership type, summer is the most popular season. It seems that annual members take advantage of their memberships to ride more often, regardless of the season, as is evident by a disproportionate increase in winter activity when compared to casual riders. Using this information, Cyclistic can create ad campaigns in the summer stressing the health and environmental benefits of cycling while also demonstrating to casual riders the costs saving advantages of the annual membership if the casual rider intends on renting a Cyclistic bike for more than 7 days a year, or more than 9 and a half hours a year.

Further examination of rides per month is explored in the appendix (Figure 10).

The two following tables were created to observe the most popular stations at which riders began their bike rides. The left shows the top ten stations for annual members, and the right for casual riders.

Figures 3 and 4 respectively.

Top 10 Start Stations for Annual Members

start_station_name	num_rides
Kingsbury St & Kinzie St	24,060
Clark St & Elm St	21,452
Wells St & Concord Ln	20,608
Clinton St & Washington Blvd	20,114
University Ave & 57th St	19,256
Loomis St & Lexington St	18,975
Ellis Ave & 60th St	18,896
Clinton St & Madison St	18,559
Wells St & Elm St	18,473
Broadway & Barry Ave	17,111

Top 10 Start Stations for Casual Riders

start_station_name	num_rides
Streeter Dr & Grand Ave	55,294
DuSable Lake Shore Dr & Monroe St	30,379
Millennium Park	24,179
Michigan Ave & Oak St	24,002
DuSable Lake Shore Dr & North Blvd	22,330
Shedd Aquarium	19,696
Theater on the Lake	17,559
Wells St & Concord Ln	15,405
Dusable Harbor	13,318
Clark St & Armitage Ave	13,176

On initially observing these tables, it is revealed that the annual members' top 10 are all within a range of under 7,000 ride counts of one another, while casual riders' top 10 are within a range of more than 42,000 rides. Knowing that annual members tend to commute to work, it can be reasoned that annual members visit a wide range of stations, and while some are more popular than others, none dominate the ride counts. Looking at the most popular stations for casual riders, the opposite is revealed. Streeter Dr & Grand Ave has almost 25,000 more bike rides starting there than the next most popular location. Recalling that annual members take more rides per year than casual riders further demonstrates the strong propensity for casual riders to visit a specific group of stations.

By examining these stations, we see that while both contain places that visitors to Chicago might like to see, the casual riders tend to visit more typical tourist locations, such as the Navy Pier, Millennium Park, and the Shedd Aquarium. Annual members are visiting places with thriving nightlife activities, neighborhoods, and places like the Merchandise Mart, the world's largest commercial building, likely as part of their commute to and/or from work.

By curating bike routes that showcase popular tourist attractions, Cyclistic can attract new users and encourage them to become annual members.

These locations and the popular end stations are further explored in the appendix (Figures 12 and 13.

Why Casual Riders May Opt for Annual Membership

Two tables were created to demonstrate the difference in ride duration and ride distance. Ride distance was calculated by the distance between the start and end location, not the distance traveled, as that data was unavailable.

Figures 5 and 6 respectively.

Average Ride Duration in Seconds per Rideable Type

member_casual	rideable_type	avg_duration_s
casual	classic_bike	1,703
casual	electric_bike	975
member	classic_bike	797
member	electric_bike	680

Average Ride Distance in Meters per Rideable Type

member_casual	rideable_type	avg_distance_m
casual	classic_bike	2,112
casual	electric_bike	2,252
member	classic_bike	1,972
member	electric_bike	2,317

By looking at these two tables, it is clear that casual riders take much longer rides than annual members on average. Conversely, the average ride distance is barely longer, and in the case of the electric bike, it is actually shorter. This can be explained by the fact that casual riders take more round-trip rides in which their start and end stations are the same. *This can be seen in the appendix.* In part this is due to sight-seeing, though the especially large number of classic bikes being ridden can better be explained by many riders using the bikes for exercise.

It is known and further explored in the appendix that regular cycling can lead to a general improvement to both your physical and mental health, is good for training strength and stamina, and is an easy way to get exercise in which the rider can control the intensity of the workout.

An economic argument can also be made for becoming an annual member. If a rider plans on purchasing a day pass more than 7 times a year, it would be cheaper to purchase an annual membership. If a rider plans to pay by the minute, it is economically beneficial to purchase the annual pass if they intend to ride more than 9 and a half hours a year. This coupled with the fact that health experts recommend cycling a minimum of 2 to 4 hours a week to receive health benefits from cycling, and the argument can be made that casual members with a desire to be healthy should strongly consider upgrading to an annual membership.

The appendix also explores the fact that regular cycling has environmental benefits, such as cutting down on pollutants, greenhouse- gas emissions, and gas consumption. Riding a bike is 4700% more energy efficient than driving a car. Because up to 15 bikes can fit in a single parking spot, mass adoption of regular cycling can reduce the need for parking lots, cutting down on land clearing, and because bikes also use much less rubber and lubricants than cars and buses, increased bicycle use can help to combat deforestation.

Cyclistic can create an ad campaign around the argument that, by buying the annual membership, members gain access to a fun, pleasurable, convenient, and easy way to greatly improve their health, their physical and mental well being, and the well being of the planet's wildlife, by reducing our dependence on fossil fuels, helping to combat the effects of climate change, fighting deforestation, and cutting down on the expulsion of greenhouse gasses entering our atmosphere.

If so inclined, Cyclistic could also set aside a small portion of net profits to give to a popular charity relating to global poverty, animal welfare, ending hunger, reducing homelessness, or improving education. This coupled with the environmental, economic, and ecological advantages outlined earlier would make Cyclistic that much more attractive to someone who is unsure if 130.90 dollars annually is really worth it. They can get a sense of helping the world while also helping themselves to be happier and healthier.

Cyclistic could improve their app by implementing social media-like functions, like friends, optional shared ride statistics, messaging, newsletters, and customizable avatars. By doing so, Cyclistic can foster a sense of community within their annual members, further encouraging casual users to upgrade their memberships. These functions are further explored in the appendix.

Other marketable strategies for persuading casual riders to annual members include highlighting the time saved for commuters by paying once and riding all year, offering a one time purchasable one month membership, offering a rewards program in which points are accrued as members use bikes. All of these strategies are further explored in the appendix.

Using Digital Media Marketing Strategies to Convert Casual Riders into Annual Members

In order to respect user privacy, certain specific data points such as age, gender, and individual ride history are unable to be analyzed. However, we can leverage proven digital media marketing strategies to effectively convert casual riders into annual members.

As stated earlier, Cyclistic can enhance their app with social media elements, such as friends, groups, messaging, custom avatars, and shareable progress, to incentivize casual riders to become annual members. Exclusive rewards programs within the app, like redeemable minutes for ebike rides or loyalty-based discounts, can create a sense of exclusivity and urgency for casual users, encouraging them to upgrade.

A targeted email marketing campaign leveraging user data can be developed to identify trends among casual riders. Personalized email campaigns highlighting popular routes and tailored to individual riding patterns can effectively convert casual riders into annual members.

Engaging social media content showcasing the benefits of annual membership can further encourage casual riders to join. Targeted advertising on platforms like Instagram,

YouTube, Twitter, and Facebook can reach specific demographics and locations. Collaborating with relevant social media influencers can amplify the promotion of annual membership.

Offering limited-time promotions during historically low sign-up periods and incentivizing referrals can increase membership numbers. These strategies create a sense of urgency among casual riders and motivate them to become annual members.

Collaborating with influencers aligned with the brand's values and target demographic, such as fitness and lifestyle influencers in Chicago, can effectively promote annual memberships. Sponsored posts, influencer takeovers, and other activities can help reach a wider audience and showcase the benefits of becoming an annual member.

Encouraging annual members to share their positive experiences through customer reviews and testimonials on social media and review platforms can build trust and persuade potential customers to join. Shareable graphics and snippets of positive reviews can be incorporated into social media posts, Cyclistic kiosks, and targeted ads. Incentives for sharing experiences can further encourage participation.

Tracking key metrics such as website traffic, email open rates, and social media engagement is crucial for measuring the effectiveness of digital marketing campaigns. By optimizing strategies based on data trends, Cyclistic can improve engagement and conversion rates, ensuring effective reach and conversion of their target audience.

A comprehensive breakdown of these strategies can be found in the appendix (Digital Media Marketing Breakdown), providing detailed insights and implementation guidelines.

Conclusions

In regards to the question of the behavioral differences between casual riders and annual members, the key difference is in where they travel to and from. Casual riders tend to go sightseeing and visit popular tourist locations. Annual members tend to travel all over the city, and do so most often during peak rush hours, when commuting to and from work. While season is less of a factor for annual members than it is for casual members, both tend to cycle most in the summer and least in the winter.

There are several compelling reasons why casual riders may choose to purchase an annual membership. Regular cycling is known to have significant physical and mental health benefits, improving overall well-being, strength, and stamina. From an economic perspective, an annual membership becomes cost-effective if a rider plans on using the service frequently throughout the year. Furthermore, regular cycling has environmental advantages, including reduced pollution, greenhouse gas emissions, and energy consumption.

Cyclistic can utilize digital media marketing strategies to influence casual riders into becoming annual members. This includes enhancing the app with social media features, offering exclusive rewards programs and personalized email campaigns based on user data.

Engaging social media content, targeted advertising, limited-time promotions, and collaborations with social media influencers can also be effective. Leveraging customer reviews and testimonials, as well as tracking key metrics to measure campaign effectiveness, are crucial for optimizing marketing strategies.

Discussion and Recommendations

To encourage casual riders to become annual members, Cyclistic could create marketing strategies that emphasize the health, environmental, and cost-saving benefits of commuting to work on Cyclistic bikes. As an example, Cyclistic could launch a campaign that showcases the contrast between a fatigued, dissatisfied commuter driving alone in a dimly lit car to work and a healthy, content cyclist in stylish and well-fitted professional attire riding to work with a sleek briefcase or a trendy backpack on a pleasant morning.

To encourage more frequent use of Cyclistic bikes by annual members, Cyclistic could create a “commuter” membership option that includes additional benefits specifically tailored for those who use the bikes to commute to work. This membership could offer discounted pricing for rides taken during peak hours, access to preferred parking spots, and a guarantee that a bike will be available during commuting hours. To support this initiative, new stations could be built in popular commuting locations such as Kingsbury St & Kinzie St, located near Merchandise Mart, the world’s largest commercial building. By analyzing individual rider data, Cyclistic could create rider archetypes and identify the ideal locations for new “commuter” member stations.

Cyclistic could implement a referral program to incentivize annual members to refer their friends to join. The referral program could offer discounts on future rides or a free month of membership for both the referrer and the new member. This program could provide an opportunity for existing members to save on their membership fees while also expanding Cyclistic’s user base.

Curating bike routes that highlight popular tourist attractions can provide significant benefits for Cyclistic and its users. By offering these unique routes through the app, Cyclistic can attract new users, including casual riders who are looking to explore the city. As more riders discover and enjoy the curated routes, Cyclistic can then offer incentives and promotions to encourage them to become annual members. This approach not only establishes long-term loyalty but also increases brand exposure and revenue potential. By analyzing rider data, Cyclistic can further personalize these curated routes to specific rider archetypes, making the experience even more enjoyable for all users. Overall, this investment in curated bike routes is a valuable opportunity for Cyclistic to expand its user base, generate steady revenue, and enhance the overall user experience.

To further encourage casual riders to become annual members, Cyclistic can launch targeted marketing campaigns during the summer months when riders prefer to use their bikes more. The marketing campaigns can offer promotions, discounts, or other incentives such as providing free accessories like water bottles or hosting summer-themed events at popular bike

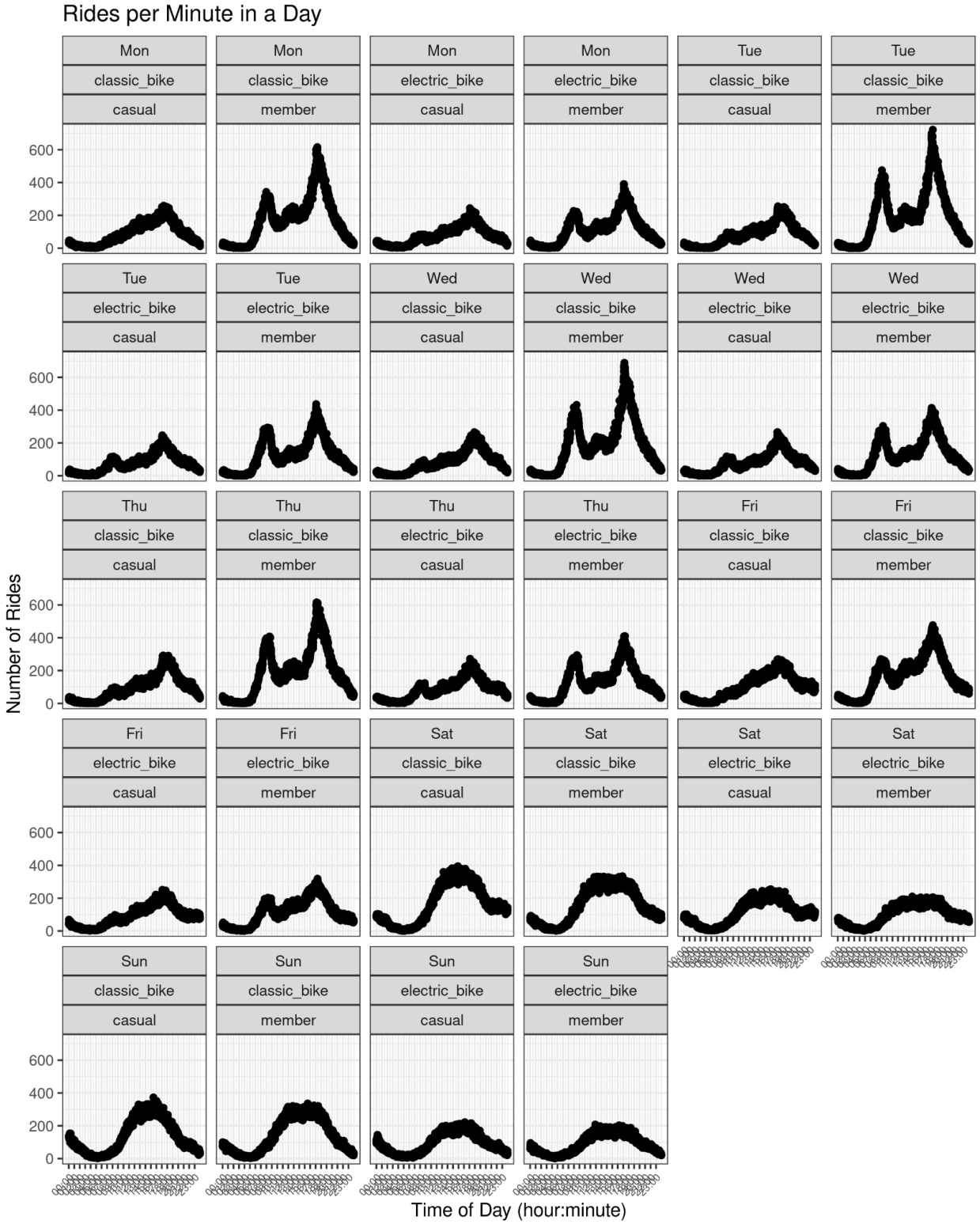
stations. For example, Cyclistic could offer a discount on annual memberships for riders who complete a certain number of rides during the summer months. This approach can help convert casual riders into annual members and increase revenue for Cyclistic during peak riding season.

To effectively use influencer marketing, Cyclistic should identify influencers that align with its brand values and target audience. These influencers could promote the benefits of cycling and using Cyclistic bikes and offer discounts to incentivize their followers to try the bikes. User-generated content could be leveraged to showcase positive experiences and generate brand awareness. To measure the effectiveness of campaigns, Cyclistic could track metrics such as engagement rates, conversion rates, and brand mentions.

Additionally, Cyclistic could collect more data on the reasons why casual riders use the bikes and create rider archetypes to identify common patterns. With this information, Cyclistic could develop tailored marketing strategies that highlight the benefits of an annual membership, such as cost savings and health benefits, to encourage more casual riders to become annual members.

Appendix

Figure 7.



Our Rides per Day of the Week graph shows that annual riders ride more often during the week. That coupled with our Rides per Minute in a Day (page 4) shows the number of rides

for each minute of the day graphed for each day of the week, for each bike type, and for members and casual riders. These graphs show that our annual members are using these bikes to commute to and from work much more often than casual riders.

We would do good to encourage casual riders to commute to work using Cyclistic bikes, while pointing out the health, environmental, and cost saving benefits of the annual membership. Perhaps an advertisement contrasting a tired, unhappy worker in loose fitting business wear driving in a dimly lit car on their way to work (briefcase flung into the passenger seat), versus a fit and happy cyclist in sharp well fitting business attire, riding to work with a briefcase (or a sharp/fancy backpack) on a partially cloudy morning.

The Rides per Minute in a Day analysis was conducted in R Studio using the tidyverse package. The following code was used for the analysis:

```
divvy_cleaned$minutes_since_midnight <- divvy_cleaned$hour * 60 +
divvy_cleaned$minute

memcas_time_day_rides_plot <- ggplot(divvy_cleaned, aes(x =
minutes_since_midnight, y = ..count..)) +
  geom_point(stat = "count") +
  labs(title = "Rides per Minute in a Day",
       x = "Time of Day (hour:minute)",
       y = "Number of Rides") +
  scale_x_continuous(
    labels = function(x) format(as.POSIXct(x * 60, origin =
as.POSIXct("1970-01-01")), "%H:%M"),
    breaks = seq(0, 23*60, by = 60)
  ) +
  theme_bw() +
  theme(axis.text.x = element_text(angle = 45, hjust = 1, size = 6)) +
  guides(fill = "none") +
  facet_wrap(ride_day_of_week~rideable_type~member_casual) +
  scale_y_continuous(labels = comma)
```

The rest of the code used throughout the analysis is located in the Cyclistic_Case_Study.rmd file.

Number of rides per weather condition was also calculated using weather data obtained from the Visual Crossing Corporation's Weather Query Builder.

During the initial data analysis, it was observed that there was a notable increase in the number of rides on days with partially cloudy weather conditions. Although this finding was not included in the report, it is worth mentioning its significance in this context.

Figure 8.

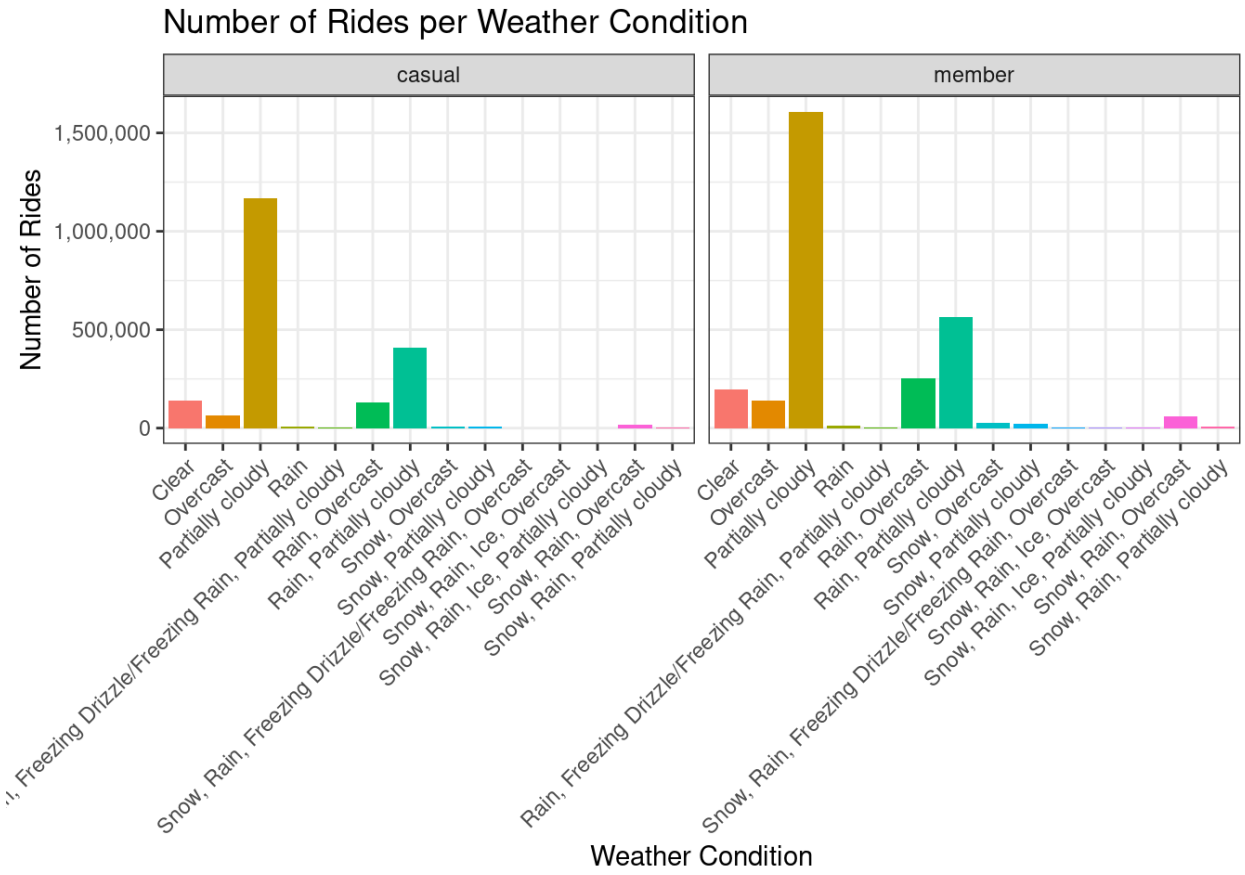


Figure 9 (next page) compares the percentage of rides during each weather condition to the expected percent based on the weather during the year the data was collected.

Figure 9.

Percent Days per Weather Condition and Percent Rides Per Weather Condition per Member Type

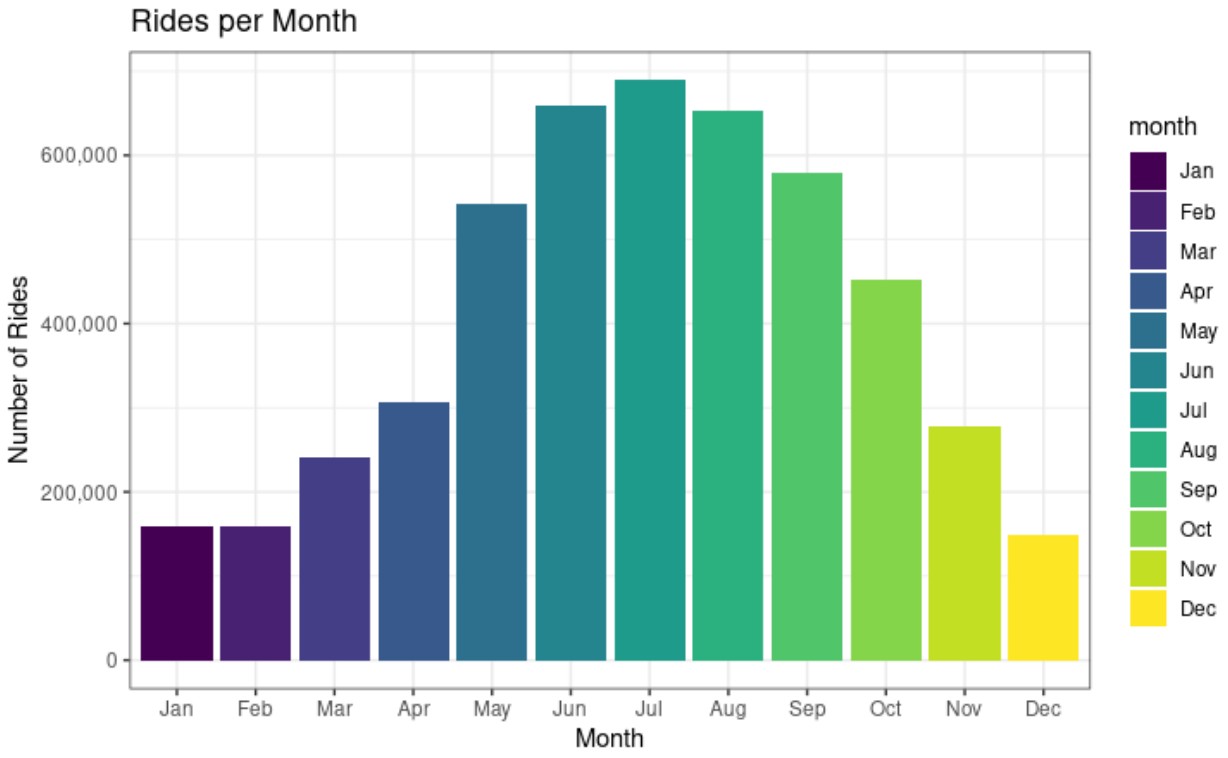
conditions	expected_percent	casual	member
Partially cloudy	49.59	59.6215	55.375
Rain, Partially cloudy	16.16	20.9082	19.467
Clear	5.75	7.1440	6.804
Rain, Overcast	11.78	6.6839	8.703
Overcast	6.85	3.3867	4.847
Snow, Rain, Overcast	4.11	0.8110	2.096
Rain	0.27	0.4483	0.408
Snow, Partially cloudy	1.64	0.3272	0.713
Snow, Overcast	2.19	0.3215	0.913
Snow, Rain, Partially cloudy	0.55	0.1423	0.280
Rain, Freezing Drizzle/Freezing Rain, Partially cloudy	0.27	0.1364	0.154
Snow, Rain, Ice, Partially cloudy	0.27	0.0267	0.098
Snow, Rain, Ice, Overcast	0.27	0.0234	0.086
Snow, Rain, Freezing Drizzle/Freezing Rain, Overcast	0.27	0.0190	0.057

Note: expected_percent refers to the percent of days in our year that these conditions occurred. members refers to the percent of member rides with these conditions, and casual refers to the percent of casual rides with these weather conditions. n is number of days in the year and can be ignored.

The above table shows the expected percent of rides under that condition if weather had no impact on rides (expected_percent). This was determined by finding the percent of days in the year in which those conditions were observed in Chicago. It also shows the observed percentage of rides under each condition, both for casual riders (casual) and annual members (members).

Rides per month were also calculated. As discussed on page 5, riders tend to prefer to ride during summer months. This is further explored in the associated .rmd file, in which you can also find all associated code.

Figure 10.

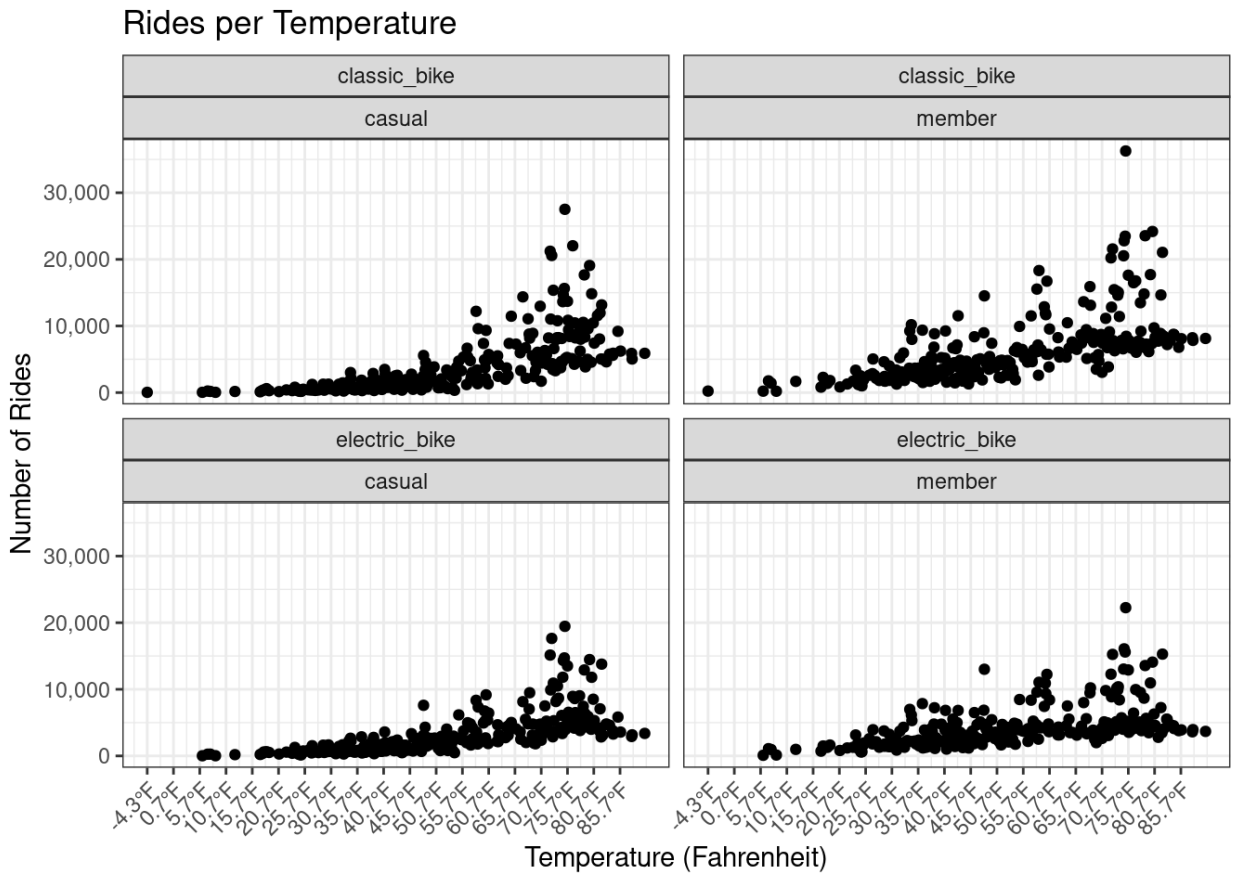


By comparing Figure 9 and Figure 10, we can see that, while November has the most partially cloudy days over the last 3 years, and July has the third most partially cloudy days, more rides take place in July, with it being the number one month on the rides per month chart. November falls into 8th place. Perhaps Partially Cloudy isn't as favorable if it's not in Summer.

Along with rides per month, rides per temperature was also examined as shown in Figure 11 below.

In all graphs, the temperature with the highest number of rides is close to 75 degrees Fahrenheit, past that temperature and the number of rides per temperature starts to fall off. The classic bikes of both the casual and members has a higher number of rides at its peak than their electric bike counterparts. This is to be expected seeing that the classic bike has always been more popular.

Figure 11.



What's interesting is the left side of the scatter plot. Low temperatures for casual riders have very few rides per each low temperature. This can be seen by how closely together each point is, with each point below 20 degrees being close to zero. The members display a similar trend, though a close look reveals that their lower temperatures have outliers in which low temperatures have slightly more rides per temperature. This trend continues as the temperature increases and becomes more apparent when we reach 35 degrees Fahrenheit. At this point the difference between casual and member riders becomes apparent. It seems that, at least at lower temperatures, temperature has less of an effect on annual members than it does on casual riders.

The overall trend for each graph is that as the temperature increases, the number of rides increases, though each graph also shows that 75 degrees seems to be the most popular temperature to ride at, and while higher temperatures are still very popular temperatures to ride at, once the temperature goes beyond 75 degrees Fahrenheit, people tend to take less rides.

Let's take a look at the top 10 ending stations for casual and annual members. The top 10 starting stations can be found on page 6, see Figures 3 and 4.

Figures 12 and 13 respectively.

Top 10 End Stations for Casual Riders

end_station_name	num_rides
Streeter Dr & Grand Ave	58,038
DuSable Lake Shore Dr & Monroe St	28,662
Millennium Park	25,950
Michigan Ave & Oak St	25,555
DuSable Lake Shore Dr & North Blvd	25,398
Theater on the Lake	18,886
Shedd Aquarium	18,244
Wells St & Concord Ln	14,954
Clark St & Armitage Ave	13,366
Clark St & Lincoln Ave	13,127

Top 10 End Stations for Annual Members

end_station_name	num_rides
Kingsbury St & Kinzie St	24,016
Clark St & Elm St	21,867
Wells St & Concord Ln	21,187
Clinton St & Washington Blvd	20,831
University Ave & 57th St	20,497
Clinton St & Madison St	19,195
Ellis Ave & 60th St	19,035
Loomis St & Lexington St	18,920
Wells St & Elm St	18,420
Broadway & Barry Ave	17,407

To reinforce a previously highlighted observation, it is noteworthy that the top 10 end stations for annual members exhibit a remarkably narrow range, with ride counts differing by less than 7,000 from one another. In contrast, the top 10 end stations for casual riders display a significantly wider range, exceeding 42,000 rides. Particularly striking is the substantial gap between the most popular station for casual riders, Streeter Dr & Grand Ave, and the second most popular station. This discrepancy suggests that casual riders tend to frequent a more limited array of locations, displaying a pronounced preference for well-known tourist destinations, notably Streeter Dr & Grand Ave.

Let's take a look at this station, and other stations popular with casual riders.

- Streeter Dr & Grand Ave is located near Navy Pier, one of the top tourist attractions in Chicago. It has various restaurants, shops, and entertainment options such as the Chicago Shakespeare Theater and the Chicago Children's Museum.
- DuSable Lake Shore Dr & Monroe St is located near Grant Park, a large urban park in downtown Chicago, that has various attractions including the Art Institute of Chicago,

Buckingham Fountain, and the Museum Campus, which contains the Field Museum, the Shedd Aquarium, and the Adler Planetarium.
- Millennium Park is widely popular, being home to the Cloud Gate sculpture (known as “The Bean”) and the Crown Fountain. It also holds several outdoor concerts and events throughout the year.
- Michigan Ave & Oak ST is located near the Magnificent Mile, a popular shopping district in Chicago, containing various luxury retailers, restaurants, and department stores. It is also close to the historic Water Tower, one of the few buildings that survived the Great Chicago Fire of 1871.

Let’s also check out some of the stations that are popular with annual members.

- Kingsbury St & Kinzie St is located within the River North neighborhood, known for ‘trendy’ restaurants, art galleries, and a nightlife. It’s also close to the Merchandise Mart, the world’s largest commercial building, which houses various showrooms and offices.
- Clark St & Elm St is located withing the Gold Coast neighborhood, known for it’s luxury shopping, historic mansions, and beautiful architecture. It is also close to Lincoln Park, the largest park in Chicago, which contains the Lincoln Park Zoo and the Lincoln Park Conservatory.
- Wells St & Concord Ln is located within the Old Town neighborhood, known for historic architecture, theaters, and charming shops. It is also close to Second City comedy club, a well known comedy club famous for launching the careers of many famous comedians.
- Clinton St & Washington Blvd is located within the West Loop neighborhood, with a thriving nightlife, popular restaurants, and art galleries. It is also near the United Center, home of the Chicago Bulls and the Blackhawks.

While the destinations visited by both casual riders and annual members encompass various attractions in Chicago, a distinction can be observed. Casual riders predominantly gravitate towards popular tourist destinations like Navy Pier, Millennium Park, and the Shedd Aquarium. In contrast, annual members are drawn to vibrant nightlife areas, neighborhoods, and landmarks such as the Merchandise Mart, renowned as the world's largest commercial building, likely due to their commute to and from work.

Digital Media Marketing Breakdown

Building upon the comprehensive analysis presented on pages 8 and 9, the following section delves into a detailed exploration of highly effective digital media marketing strategies:

Cyclistic could incentivize casual riders to become annual members by further developing the app by adding optional social media elements such as friends, groups, messaging (even if only within groups or on group bulletin boards), shareable progress such as distance biked and number of rides, and community events. We can offer exclusive rewards programs for annual members within the app, such as redeemable minutes for ebikes or small loyalty based discounts on renewed annual memberships. This will create a sense of exclusivity and urgency for frequent casual users, encouraging them to become annual members.

We can work with the Cyclistic team to develop a targeted email marketing campaign that leverages user data obtained from the app to identify trends among casual riders. For instance, we can look at which start and end stations are most frequently used by casual riders, and use this information to create personalized email campaigns that highlight these popular routes and incentivize riders to become annual members. By using the usernames or IDs of individual riders, we can further tailor the emails to their specific riding patterns and behaviors. This targeted approach can be a powerful tool for converting casual riders into annual members, and we can work with the Cyclistic team to test and refine different email campaigns to optimize their effectiveness.

To further encourage casual riders to become annual members, Cyclistic could also create engaging social media content that showcases the benefits of annual membership, such as getting fit, cheap and fun commutes to work while skipping the traffic, and cutting back on pollution. This content could be visually appealing and posted on platforms like Instagram, YouTube, Twitter, and Facebook. Cyclistic could use targeted advertising to reach specific demographics and geographic locations that are most likely to convert to annual members. For example, if data shows that college students are frequent casual riders, Cyclistic could target Instagram ads to college campuses and use language and visuals that appeal to that demographic. Additionally, Cyclistic could use social media influencers or brand ambassadors to promote annual membership and showcase the benefits to their followers. By leveraging the power of social media and targeted advertising, Cyclistic can reach a wider audience and potentially convert more casual riders into annual members.

Cyclistic could use social media to offer limited-time promotions, such as discounted annual memberships during periods when subscription rates are typically lower. By analyzing subscription data and identifying times when sign-ups are historically lower, Cyclistic can strategically offer promotions during those periods to encourage more casual riders to become annual members. Additionally, incentivizing riders with minutes or discounts to refer friends to sign up for annual memberships could also help increase membership numbers. These promotional offers and referral incentives could create a sense of urgency among casual riders, and motivate them to become annual members and spread the word to others.

Cyclistic could collaborate with social media influencers who align with the brand's values and target demographic, such as Chicago-based fitness and lifestyle influencers. Influencers like @chicagofoodauthority on Instagram, @ChicagoParent on Twitter, and Luis Gusto (@GoLuisGusto) on YouTube could be ideal partners to promote annual memberships to their followers. For example, @chicagofoodauthority could showcase how cycling is a healthy and fun way to explore Chicago's food scene, while @ChicagoParent could highlight how annual memberships can make family outings more affordable and eco-friendly. Luis Gusto could create YouTube content featuring the benefits of cycling for fitness and transportation, and encourage his followers to become annual members. Collaborative efforts with these influencers could include sponsored posts or videos, influencer takeovers of Cyclistic's social media accounts, or other promotional activities. By partnering with relevant influencers, Cyclistic can reach a wider audience and promote the benefits of becoming an annual member to potential customers.

Cyclistic could tap into the power of customer reviews and testimonials by encouraging annual members to share their experiences on social media and other review platforms. By showcasing positive reviews and testimonials in digital marketing efforts, Cyclistic can demonstrate the benefits of becoming an annual member to potential customers. This approach could include creating shareable graphics that feature testimonials or incorporating snippets of positive reviews in social media posts and targeted ads. Additionally, Cyclistic could incentivize annual members to share their experiences by offering rewards or recognition for their participation. Leveraging customer reviews and testimonials can help build trust with potential customers and persuade them to become annual members.

Measuring the effectiveness of digital marketing campaigns is crucial for understanding what works and what needs improvement. Cyclistic should track key metrics such as website traffic, email open rates, and social media engagement to gauge the success of their campaigns. With this information, Cyclistic can identify trends and adjust their marketing strategies accordingly to improve engagement and conversion rates. By optimizing campaigns for maximum impact, Cyclistic can ensure that their digital marketing efforts are effectively reaching and converting their target audience.

This appendix provides a comprehensive overview of the analysis conducted, offering a deeper understanding of the insights gained. However, it is important to note that this analysis represents only a fraction of the extensive research conducted. For a more thorough examination, please refer to the corresponding markdown file (Cyclistic_Case_Study.rmd) and its associated pdf (Cyclistic_Case_Study.pdf). Should you have any inquiries or require further clarification, please do not hesitate to contact the Analyst via email or phone.