**DATA 3960 – Mid Point Documentation – Group 1**

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**Business Case Description:**

The Canadian Brewhouse recognizes the imperative of customer retention in its quest for sustained growth and profitability. The challenge lies in creating effective strategies that ensure customer consistently choose The Canadian Brewhouse for their dining and entertainment experiences.

The first business goal is leveraging customer loyalty, utilizing a dedicated app to keep track customer behavior, The Canadian Brewhouse incentivizes repeat visits by offering loyalty points, redeemable for complimentary snacks such as yam fries and cheese sticks. This approach not only aims to strengthen existing customer relationships but also to acquire new ones. By transforming loyal customers into advocates, The Canadian Brewhouse influence others within their social circles to choose a place as dining and entertainment.

The second one is maximizing revenue potential, The Canadian Brewhouse aims for sustained growth in a competitive market by emphasizing repeat business from loyal customer. Recognizing that consistent customers contribute significantly to the overall revenue stream, this strategy underscores the importance of cultivating long-term relationships.

The third one is building a positive brand image, beyond repeat transactions, it involves enhancing customer experiences and satisfaction to build a favorable brand image. By creating memorable moments and exceeding customer expectations, such positive brand associations not only attract new customers but also contribute to the strengthening of customer loyalty over time.

The business opportunity is the potential for increased revenue, and market share through the strategic enhancement of customer retention at The Canadian Brewhouse. The first opportunity is repeat business, encouraging existing customers to choose repeatedly for dining and entertainment, directly contributing to revenue growth. It’s a win-win, where customers get the good times, and they get to keep the lights on.

The second one is word-of-mouth marketing and brand advocacy, satisfied customers also potential to become advocates. The goal is to prompt these advocates to share their positive sentiments with friends and family. This organic, word-of-mouth promotion contributes to new customer acquisition, expanding the customer base organically.

The third one is building a community and enhancing engagement. Through events such as hockey games and any Canada sport games, The Canadian Brewhouse seeks to foster a sense of belonging among its customers. The establishment recognizes that going beyond a venue for dining and entertainment, it can transform into a community.

To address the business goal of enhancing customer retention for the Canadian Brewhouse, it is crucial to demonstrate a deep understanding of the relevant industry. It involves acknowledging the competitive landscape and consumer behaviors that may impact business operations.

The first competitor is Brewsters Brewing Company, its strength lies in its diversity of craft beers, complementing their beer offerings is a diverse menu featuring pub-style food. However, it faces a challenge with its limited geographic presence compared to larger chains. While the brand’s strength is indisputable, expanding its footprint could present an opportunity for increased market share and exposure. (*Brewsters Brewing: Pub, Restaurant & Microbrewery*)

The second competitor is The Keg Steakhouse + Bar, for delivering high-quality steaks. Its strength lies in providing customers with an upscale dining experience. The Keg’s national presence, marked by multiple locations. However, a potential weakness could be limited emphasis on craft beer offerings, potentially leaving a gap catering to the beer lovers. In addition, the challenge of rising meat prices poses a dilemma, impacting consumer perceptions of steak affordability. (*Keg Swot*)

For consumer behavior, Canadian often seek casual social dining experience especially in the weekend. Establishments that offer a lively and welcoming atmosphere, tailored for socializing with friends and family, resonate exceptionally well with consumers. Apply to The Canadian Brewhouse, they can host more promotions to attract customer during weekend.

Background of The Canadian Brewhouse, it started in West Edmonton in 2002 and expanded with the first franchise in Sherwood Park in 2011. The plan is to grow in western markets and expand eastward. Founded with a passion for craft beer and sports, it's known for a wide variety of craft beers on tap. The setup includes a sports bar with large screen TVs for a sports-centric and social experience. (*About us: Our House is your House*)

For the project objective, the primary goal is to enhance overall customer retention at The Canadian Brewhouse by achieving a targeted percentage increase over a specified timeframe.

Utilize the feedback dataset to identify specific areas for improvement and address pain points within the customer journey. By leveraging direct feedback, The Canadian Brewhouse seeks to refine its services and enhance overall customer satisfaction.

We will evaluate the loyalty program to examine its impact on customer retention and the overall satisfaction of program participants, as well as participation. Furthermore, the project will explore opportunities to enhance the loyalty program by introducing features that align with customer preferences. For example, notifications about special events, such as hockey games, will be integrated to provide an added layer of engagement.

To maximize the impact of promotions and boost the traffic, the project will identify the busiest and most popular locations. It aims to concentrate promotional efforts where they can have the most influence on customer retention and satisfaction.

Lastly, it will focus on enhancing the referral program. By refining incentives and outreach strategies, it aims to encourage customers to actively participate in the program, attracting new customers to the establishment.

**Research Questions:**

In an increasingly competitive market, understanding customer behavior and preferences is paramount for businesses seeking to optimize their promotional strategies and foster long-term loyalty. This study focuses on the Canadian Brewhouse, aiming to delve into the intricate dynamics of customer engagement, feedback, check-ins, redemption behaviors, and referral programs. By examining these diverse datasets, we seek to uncover insights that can guide the strategic optimization of promotional campaigns, enhance customer satisfaction, and ultimately drive business growth. Through the lens of data analysis and hypothesis testing, this research endeavors to shed light on how the Canadian Brewhouse can effectively leverage its loyalty app, customer feedback, check-in patterns, reward redemption, and referral programs to attract, retain, and delight its clientele.

The Guest Dataset aims to address the research question: How can promotional campaigns be optimized to increase customer visits and spending at the Canadian Brewhouse? We hypothesized that higher rewards offered through the loyalty app will lead to increased customer visits and spending. To identify optimal reward levels, the study will explore the relationship between reward magnitude and the frequency of customer visits, analyzing historical data to determine the threshold for noticeable engagement upticks. The customization of rewards based on individual preferences and purchase history will also be investigated, along with an assessment of the long-term impact on loyalty associated with different promotional strategies.

In the Feedback Dataset, the focus shifts to understanding the correlation between customer feedback and higher retention and satisfaction. Our hypothesis suggests that positive feedback on promotions and the overall store experience, especially when considering location-specific factors, positively impacts customer retention. The study will conduct a location-specific analysis, comparing feedback ratings across different branches, isolating promotion-specific feedback, and integrating feedback data with check-in data to explore the association between positive feedback and increased visit frequency.

The Check In Dataset explores patterns of customer check-ins within the Canadian Brewhouse to inform targeted campaigns. The hypothesis proposes that special promotions during peak times, such as Oilers Game Days, will increase customer check-ins. The analysis will include location-specific check-in data, an examination of average points earned during check-ins across different locations, a comparative analysis of events driving check-ins, and integration with feedback data to understand correlations with positive feedback.

The Redemption Dataset investigates how redeemed rewards impact subsequent customer behavior and contribute to sustained loyalty. We hypothesized that the redemption of rewards leads to increased customer loyalty and higher spending. The study will compare the count of redeemed rewards with total check-ins, examine the average points earned during redemption events, and integrate redemption data with check-in data to explore the interplay between different loyalty initiatives and their impact on overall customer engagement. Additionally, a comparative analysis of different redemption types will be conducted.

Finally, the Referral Dataset explores the contribution of the referral program to increased customer visits and its impact on referrer loyalty. We believe that customers participating in the referral program significantly contribute to new visits, and referrers display higher loyalty compared to non-participants. The study will analyze the referral dataset, comparing new visits attributed to the program with total check-ins, conducting a comparative analysis of referred and non-referred customers, and integrating check-in data to identify unique trends among referred guests.

In conclusion, the analysis of the Guest, Feedback, Check In, Redemption, and Referral datasets provides valuable insights into optimizing promotional campaigns and fostering customer loyalty at the Canadian Brewhouse. By exploring the relationships between reward magnitude, customization, feedback sentiment, check-in patterns, reward redemption, and referral program effectiveness, this study has identified actionable strategies for enhancing customer visits, spending, and retention. Leveraging these findings, the Canadian Brewhouse can refine its promotional tactics, tailor offerings to individual preferences, and cultivate lasting relationships with its patrons. Moving forward, a continued emphasis on data-driven decision-making and proactive customer engagement will be essential for the Canadian Brewhouse to thrive in an ever-evolving marketplace.

**Preliminary Data Analysis:**

After developing our research questions in relation to how to increase customer retention we examined our five chosen datasets and devised an analysis strategy. Each research question has a different goal and so each dataset has to be approached in a different way. Throughout our analysis we used data visualizations to help us understand the relationships that existed in the data, as they could be more easily seen at a glance. For example, with a scatterplot we can see if there is a positive or negative relationship between two variables.

We determined that the basis for our research would be the number of check-ins and total points, as this appears to be the best way to measure customer behavior. Customers that have higher check-ins and higher points obviously returned to the Canadian Brewhouse more often, and if this data is compared with factors such a redemptions and referrals, we should be able to make some conclusions about them and their effectiveness. All of the other factors and parameters can then be related back to this central measure of customer behavior.

Data Analysis Methods:

The guest dataset was used to analyze the total number of loyalty points and total check-ins and was the basis for our analysis. We can combine the different datasets together through User ID as the primary key, and then compare them to each other in various ways.

The feedback dataset was used to understand the amount and quality of the customer feedback to each location, and common positive or negative topics. We can aggregate and compare the ratings of the feedback to the number of check-ins and determine if there is any correlation.

The check in dataset was used to understand the most popular locations and the locations that provided the most points. From this we could compare the different locations and determine if there were any patterns in what caused a location to be more popular, and on which days.

The redemption dataset was used to understand patterns in the reward system such as when the different rewards were redeemed, and which users redeemed the most. Additionally, we can then create two customer groups, ones who did redeem and ones who did not. From there we can compare the two and determine if there is a difference in check-ins or points between them, and if the rewards program is proving to be successful.

The referral dataset was used to understand the pattern of customers who were referred to the loyalty program by an existing user. Again, by create two groups of customers, those who were referred and those who were not, we can compare the two groups and determine if the referral program is successful at driving customer retention and engagement.

One of our methods for data exploration was combining the datasets by using Power BI’s power query editor to then use different data types to create visualizations and gain a better understanding of the relationships. This was necessary because some of the relationships would be from across different datasets, such as number of check-ins compared to number of redemptions. The main data point of connection was User ID, as this would be relevant to any dataset that listed users. These visualizations helped us to determine the direction we would need to take the analysis to gain the best results because certain relationships can be understood at a glance while using a scatterplot. Other information such as the most popular store or the highest number of check-ins could be determined from bar charts. Python was used to perform data cleaning when it came to removing rows and columns and imputing missing values, it will also be used for modelling.

Data Cleaning:

For the data to be effectively used for modelling or comparisons the datasets need to be cleaned and prepared. Overall, the data is fairly clean but there are certain factors that have to be addressed. First of all, any data on personal information or relating to the geographical information of the store could be removed as this was either blank or not relevant to our research.

When it comes to missing values in the data, we devised a strategy based on the type of data it was. For categorical data such as the method of sign up or redemption, the best strategy was to replace the missing value with the most common value of the column. However sometimes changing the low frequency values into an “other” category was more useful. With numerical columns, depending on the dataset, the values could be an indication of a barcode or ID number, or a value of points. For those barcode columns it mostly depends on the relevance of the data, but usually they were able to be removed as they weren’t particularly useful. In the case of points or some other quantitative value, using 0 was the best solution as it would make sense to not always have received points. Some columns and rows were removed if they had too many missing values and would not be useful for analysis. This situation was mostly related to certain technical aspects of the data collection process used by the app. Our overall goal with the data cleaning process was to make the data as condensed as possible but structured in a way that modeling and comparisons can be done to produce the best results.

**Initial Findings:**

In our preliminary analysis, we've unearthed compelling insights that shed light on crucial aspects of customer behavior and preferences within The Canadian Brewhouse ecosystem. One significant revelation is the dominance of the Lewis Estates location, which emerges as the preferred destination for patrons. This finding underscores the importance of understanding location-specific dynamics in shaping customer experiences and engagement. Moving forward, deeper investigation into location-specific trends, such as correlation with loyalty points and customer segmentation, can provide valuable insights for tailoring marketing strategies and operational decisions to optimize customer satisfaction and loyalty at individual locations.

Furthermore, our exploration of signup channels has uncovered the profound impact of MobileEmail engagement in driving customer participation in the loyalty program. With approximately 63.12% of total check-ins originating from these channels, it's evident that mobile and email-based communication play a pivotal role in fostering ongoing engagement and interaction with customers. Understanding the nuances of customer engagement across different media channels can inform targeted marketing efforts, content strategies, and communication tactics to effectively reach and resonate with diverse customer segments. Additionally, we will explore how this value affects the return on investment (ROI) for the loyalty point program, further aligning our strategies with business objectives.

Additionally, our analysis of customer feedback through word cloud analysis has yielded valuable insights into the sentiments and perceptions of patrons. The prevalence of the term "great" in positive feedback underscores widespread satisfaction among customers, while the prominence of "disappointed" in negative feedback signals areas of concern or dissatisfaction within the customer experience. These insights provide a nuanced understanding of customer sentiments, enabling us to identify areas for improvement and prioritize initiatives that enhance overall customer satisfaction and loyalty.

Visualization Plan

We'll delve into customer segmentation by comparing groups based on purchasing patterns, engagement levels, and other relevant factors. Segmented scatter plots will reveal correlations between loyalty points and variables such as visit frequency or redemption of coupons. Segmented bar charts will display the distribution of loyalty points among different customer segments, guiding targeted incentives. Heatmaps will illustrate relationships between customer attributes and coupon redemption, enabling tailored loyalty program strategies. These advanced visualizations will optimize customer engagement and loyalty at The Canadian Brewhouse.

Challenges and Solutions

Despite encountering challenges with data transformation preferences, our collaborative efforts between Python and Power BI users have yielded tangible results. By establishing common standards, fostering effective communication, and leveraging Power BI's robust visualization capabilities, we've been able to overcome these challenges and ensure a seamless integration of data analysis and visualization processes.

Moving forward, our focus will be on leveraging these insights to inform strategic decision-making and drive initiatives aimed at enhancing customer retention, satisfaction, and loyalty across The Canadian Brewhouse locations. Through targeted marketing campaigns, personalized experiences, and continuous optimization efforts, we aim to solidify The Canadian Brewhouse's position as a preferred destination for dining and entertainment experiences.

**Future Analysis:**

As we continue with this project, our plan is to use modelling and comparisons on the datasets to understand the significance of the relationships that these factors have towards customer retention. Our hope is that these results will be a good indication of which factors are important, and we can then analyze those results and provide recommendations towards how the Canadian Brewhouse can maintain and improve their customer base.

The types of models we intend to implement are a combination of statistical and predictive models. Statistical models will be used when comparing groups of customers to understand trends, such as with the referral and redemption datasets, and predictive models will be used to determine how accurately check-ins and points can be predicted based on those same factors. However, comparisons between groups will likely be the focus of our future analysis as this is the best way to determine if there is a difference between groups, and if the rewards and referral programs are proving to be successful, or if they need to be improved.

**References:**

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