AutoBasket

"With AutoBasket, it's never been easier to get everything you need for a great meal!"

Dhiraj Kumar Sah
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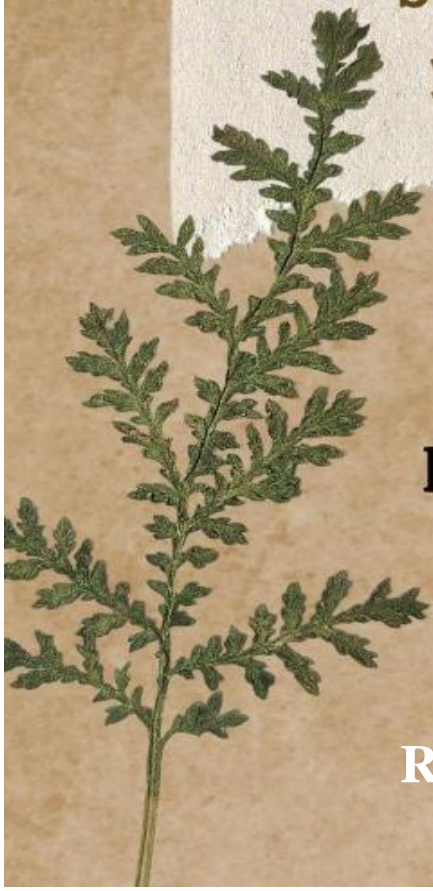**Harshil Bhavsar**
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ABSTRACT

This week, the project was on data analysis for the AutoBasket platform feedback; in order to spot the areas for improvement and strategic potential. Employing sentiment analysis and exploratory data examination methods assisted in identifying and deriving insightful data that worked in favor of increasing customer satisfaction and retention.

According to the analysis, the vast majority of the customers expressed very positive feelings even though the satisfaction scores varied between 4 and 5. Nevertheless, the project revealed a small unhappy segment of the site's visitors, thus the measures including the website optimization, extension of the product assortment and perfection of the order fulfillment process were implemented. Moreover, some issues like adding gluten-free products and smoothing the procedure of purchasing the products were pointed out as main techniques to improve customer satisfaction. The implementation of user feedback form is an initiative to directly get customer insights, which will constitute a source for the platform of refinement of services and recommendation systems to keep competitive edge and also to promote further growth.

INTRODUCTION

AutoBasket is a company founded by Larry and Veronica Smiles with the purpose of simplifying the grocery shopping experience for individuals and families. Situated in the heart of Toronto, the company's headquarters pulsate with the energy of a city known for innovation and diversity. The company's app automates grocery and recipe lists, linking recipes to required products, and streamlining the shopping process. Today, AutoBasket assists households across the world to save time and energy on their weekly grocery runs, making it easier for busy families and individuals to get everything they need for a great meal.

AutoBasket has hired us as interns to focus on all areas of development for the organization and to help create solutions to common issues within the industry. Our role as interns is not only focused on the knowledge you have learned in school but also on developing your soft skills, including presentations, teamwork, and leadership. This internship will provide us with valuable real-world experience and an opportunity to contribute to the continued success of AutoBasket.

SENTIMENT ANALYSIS

We have received useful inputs from the customers reviews, helping to discover the opportunity points and the areas we are good at. A positive experience is derived from majority of your customers as captured by the uniformly spread-out scores of satisfactions ranging between 4 and 5. Yet, a customer segment with lower satisfaction scores and requiring intervention is unearthed, pointing at areas deserving of attention. On the other hand, the sentiment trend analysis shows mostly positive opinions that are consistent with different aspects of customer satisfaction with the AutoBasket platform. That positive however, a high percent of the comments that classified negatively may reveal the area that need to improvement.

The dataset at our disposal encompasses essential dimensions, including user Id, satisfaction scores, and corresponding reviews. Leveraging NLTK's sentiment analysis library, we meticulously calculated sentiment scores for each review, enriching our understanding of customer sentiment and preferences. The dataset was of the 15 rows.

It identifies the main opportunities for enhancement. In the beginning, web site optimization and a better user experience are the most important aspects focused by our customers' feedback on the slowness of navigation and the confusion. In a similar way, assorting products hence providing a wider variety of choices gives customers the ability to make more informed decisions too. Also, problems with the order fulfillment which include the completeness as well as the effectiveness of the refund processed to be addressed priority. On top of that, getting more gluten-free items on the menu and improving the purchasing procedure by simplifying it and introducing clarity to shoppers are the recommended ways of ensuring positive customer experience and retention.
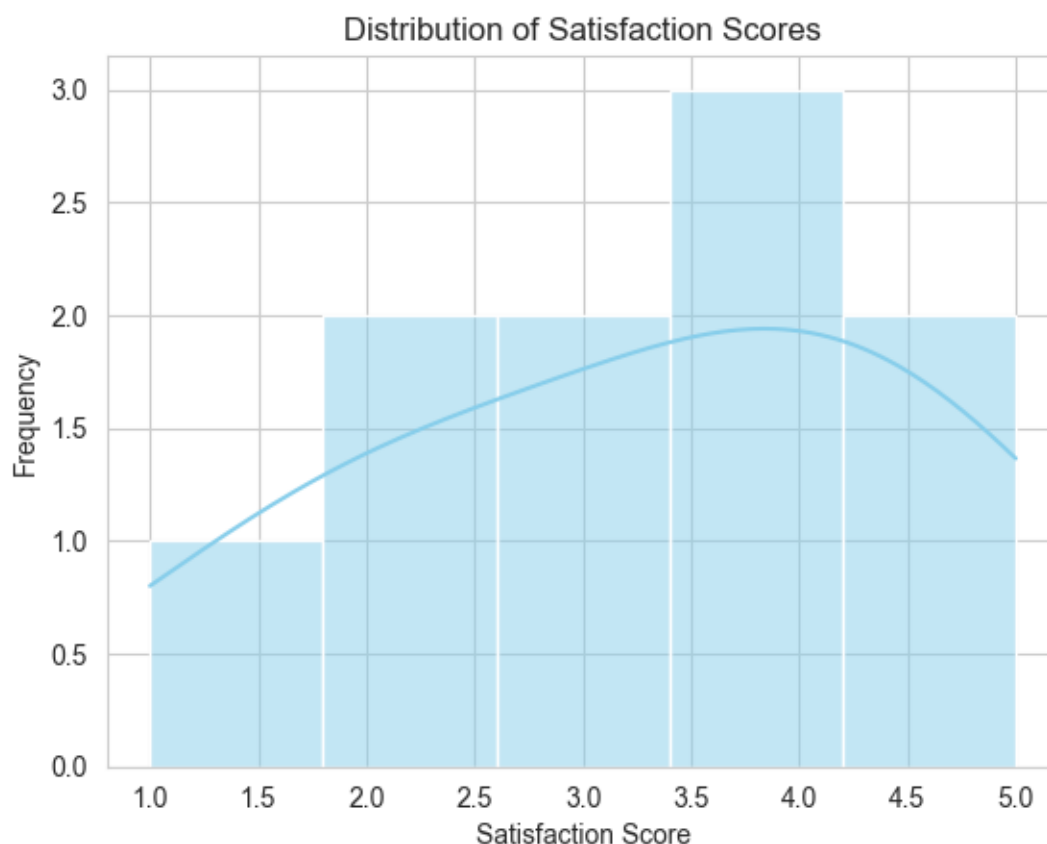
EXPLORATORY DATA ANALYSIS

Figure-1: Distribution of Satisfaction Scores

       The figure below is a line graph which illustrates the distribution of the customer satisfaction ratings. The x axis shows the satisfaction score and the y axis depicts that how frequently each score occurs. The graph illustrates that the majority of the answers are located in the circle with a score of 3. This kind of thing suggests that a big chunk of respondents have 3 as their level of satisfaction. The curve on the graph, which is termed a frequency curve, helps to represent an occurrence of these scores. The form of the curve implies that the distribution of scores is about normal, which as a rule, is the case for most natural processes. The normal distribution is a curve with bell shape and at the same time is about its mean, median and mode coinciding. In this case, the mean satisfaction score seems to average up to 3. The graph is very informative as it shows no (sentiment-analysis-concept-analysis-and-applications, 2018)t just the average level of satisfaction, but its fluctuation as well. It can be employed in drawing conclusions about the targeted population from which the sample came. Thus, in case this is the customer satisfaction survey, there is the most common score, i.e. 3 which is the indicator of moderate level of satisfaction among consumers.
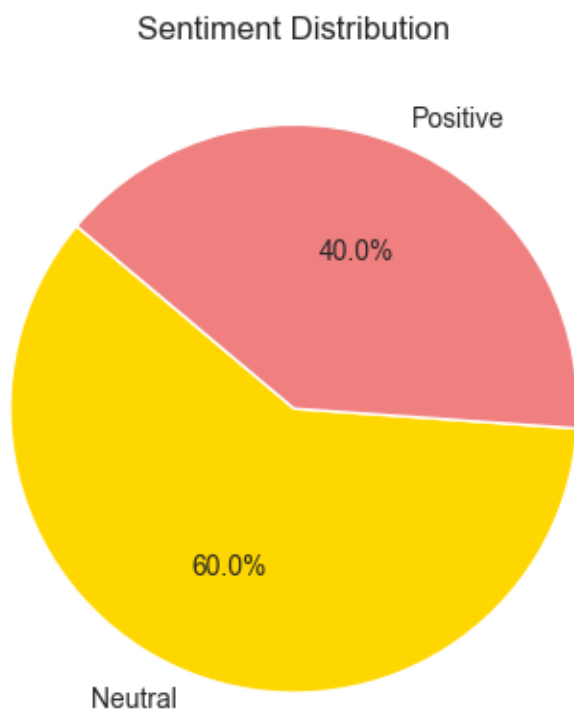
Sentiment Distribution

Figure-2: Sentiment Distribution

This pie chart depicts a visualization of the sentiment analysis data, which can be used to have an insight into the overall image of a database like customer feedback or social media posts. On this occasion, neutrals prevail in terms of sentiments.

- **Positive**: Pink consists of 40% of the whole pie as displayed in this pie chart. This means that 40% of the customer reviews are positive.
- **Neutral**: Shown by the yellow segment, which comprises about two-thirds of the pie. This demonstrates that 60% of sentiment being classified as neutral.
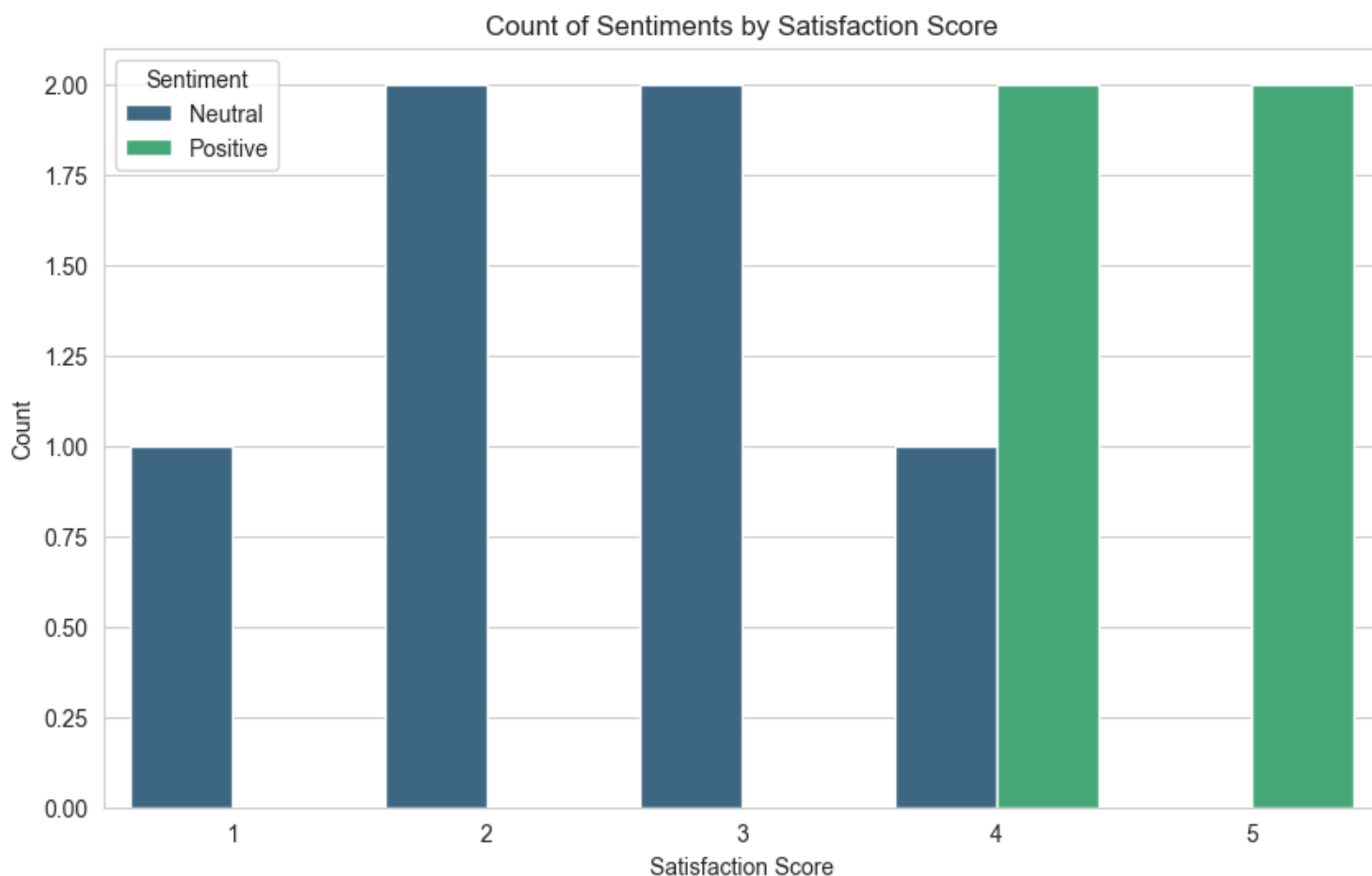
Figure-3: Count of Sentiment by Satisfaction Scores

The picture is bar graph titled "Count of Sentiments by Satisfaction Score". It illustrates that there is a lot of neutral and positive ones throughout the distribution of satisfaction scores, which ranges from 1 to 5.

- X-Axis (Satisfaction Score): The x-axis stands for satisfaction scores where numbers are from 1 to 5.
- Y-Axis (Count of Sentiments): The y-axis expresses the sentiments count, which is the number of times a certain sentiment (either a neutral or a positive one) appears.

The chart shows that as the satisfaction score goes upward the number of positive sentiments rises along with. This proposes that a higher satisfaction rating correlates to more favorable sentiments. The opposite way, the neutral attitudes are mostly frequent at the same time of lower degrees of satisfaction. By looking at the chart, it gets clear that the connection between satisfaction scores and feelings.

Proportion of Customer Satisfaction Scores

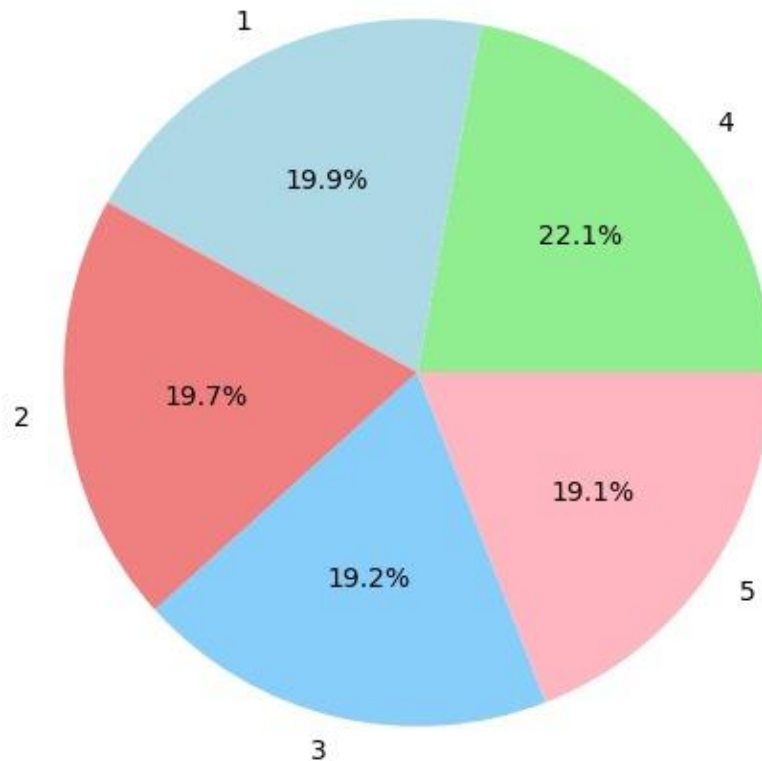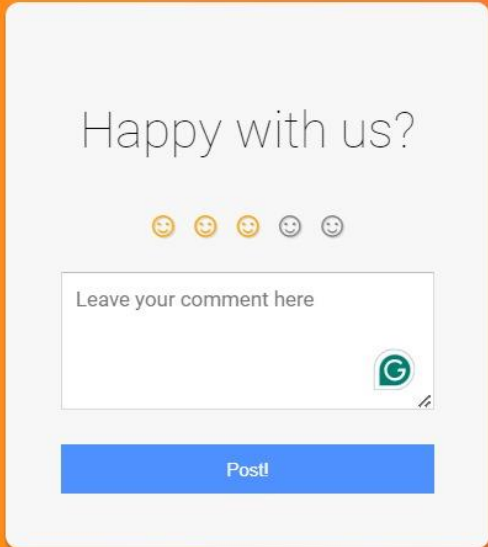Figure-4: Proportion of Customer Satisfaction Scores

The picture is an illustration of pie chart subtitled "Petition of Customer Satisfaction Scores" which depicts divergent customer satisfaction scores that range from 1 to 5. The pie chart segments are colored and numerically and percentage scores are mentioned next to them in their corresponding colors.

Consumers tend to rate our client's products more specifically on a range from 1 to 5, the grade distribution curve has a relatively even spread with minor deviations between the scores. Nevertheless, 4 among the scores is a one that holds a crucial position as it is a topper of the scores chart, accounting for 22.1% of the population, a little more than the lowest segment, a score of 1 that reveals 19.9% share in the respective chart. Moreover, we can point out that relatively equal scores of 2, 3, and 5 are somewhat similar since they each cover about 20 percent of general responses.

Hence, this pie chart does on the whole reveal useful details to us by showing what areas of spray connection service is good as well as the areas of improvement. It helps in an efficient manner to grasp customer feedback as well as guide the company on how to meet customer's expectations and increase the level of satisfaction.

IMPLEMENTATING USER FEEDBACK FORM

To address the point where we have to collect the user feedbacks we thought of approaching this point with implementing a simple user feedbac form where one customer can give the ratings from least happy to most happy and can give suggestive comments as well. At the top of the feedback form, we have put the question that asks, "Happy with us?". This friendly way allows the customer to express their level of satisfaction to us. Moreover, they can choose from five emoji reactions that range from unhappy to happy. If customer have more to say, there's a comment box where one can leave their thoughts in more detail. Once done, one can hit the blue "Post!" button to submit their feedback. It's a simple and effective way for the customer to share their experience and opinions. This user feedback form will help Autobasket to collect constructive advices from the customers and incorporate that into our next model learnings. it will also help us to implement our recommendation system more accurately and increase our performance index.

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CONCLUSION

Finally, our in-depth customer feedback through sentiment analysis and investigates the forces of the AutoBasket platform are based on the strength of the provider and the identified areas of improvement. The data indicates a general positive direction-of-feelings among customers, that is, evenly high customer satisfaction scores, which fall between 4 and 5. It reflects the system's effectiveness in the sense that the majority users are fulfilled. Regardless, the segment also reflects the existence of another distinctive group of customers with the lowest satisfaction scores which offer a clue to the problems requiring immediate attention and resolutions.

During analysis certain key opportunities for making the website more usable and fulfilling client needs as well as expanding the products range to offer a wider range of choices came to light; among them there were issues related to delivery process and order cancellation and refunds execution which area needed improvement. Similarly, ensuring that more gluten-free products are available on the menu and stress on the checkout procedure to streamline shopping are two of the most significant implications. By focusing on the specified areas, this issue can be improved high enough to lead to customers' satisfaction and retention.

Next, the application of a user feedback form will unveil a course, which might show how customers tend to provide ideas that are construction in nature. This program will not only give customers a platform where they can indicate their level of satisfaction or share their valuable suggestions but also would assists incorporating feedback into future models and recommendation systems. Through the adoption of a customer-oriented strategy and the subsequent improvement of its services based on users' opinion, AutoBasket is well-equipped to maintain its competitive advantage in the end and bring the company's further growth and success in the long run.

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