758T

Hello, everyone!

Whether it's a humble neighborhood corner shop or a famous multinational retail giant, they all hinge on one common factor - happy and satisfied customers. Without customers, businesses can't thrive, and that's where we step in with our speciality - Customer Analysis.

We assist our clients, ranging from mom-and-pop grocery stores to big-name corporations, by offering comprehensive customer analysis. We don't just throw raw numbers or model outputs. Instead, we help them decipher how these numbers can bolster their business performance and apply this knowledge in real, practical steps.

Moreover, we equip our clients with tailored promotional strategies and future marketing plans that they can implement right away to boost their KPIs and ROI.

So, you might ask, how exactly do we help improve these crucial business metrics? And where do we start? Well, our approach involves three key steps: analyzing existing customers, predicting future customer behavior, and crafting potential marketing strategies.

We first address crucial questions: Who are our most valuable customers? Who are likely to return? Which customers are we at risk of losing? Once we identify these groups, we strategize on how to retain those at risk and keep our loyal customers satisfied.

But it's not just about analyzing existing customers. To optimize business performance, we also need to anticipate future customer behavior, as these customers will be the ones driving our future profits.

We want to understand what drives their decision. Is it their buying habits, background, or personal traits? What factors influence this choice, and which are the most impactful?

And remember, customers are not static. Their preferences evolve. What if someone turns vegan and their spending on other categories decreases? And what about deal hunters versus full-price shoppers?

By answering these questions and more, our team created a customer analysis model that doesn't just look good on paper. It provides tangible solutions to help our clients improve their business performance across the board.

Alright, let's dive into our client's data. We'll be examining five key dimensions: customer demographics, customer activities, the amount spent by customers across different

categories, customer participation in promotional activities, and the number of purchases made across channels.

Moving on to the analysis of existing customers, we take a unique approach tailored to our client's market. Here's where the Recency-Frequency-Monetary model, or RFM as it's often called. Think of it as a way to get a handle on customer behavior. We kick things off by building an RFM matrix, which results in an RFM score.

Let's have a peek at this pie chart. It's a visual demostration of how our customers are spread out, and it's our guide to advising clients on specific actions for each customer group.

Now, for those die-hard fans, the loyal customers, we highly recommend our clients roll out the red carpet. Personalized communication and top-notch customer service are key here.

Next up, we have the potential loyalists, the ones on the way to become loyal fans. For them, we advise our clients to put in place a strategy that includes regular follow-ups.

And then, we have those customers who aren't likely to add much value in the future. It might sound harsh, but for this group, we suggest our clients might want to consider letting it go. Considering about the resource allocation.

In conclusion, customer analysis is a crucial aspect of any successful business strategy. Without understanding customer behavior, preferences, and needs, it is impossible to create a successful marketing and promotional strategy that leads to a steady flow of satisfied and happy customers. The process of customer analysis involves a thorough examination of past and future customer data to identify key customer groups, behaviors, and preferences. We use three steps to understand our customers, an analysis of past customers, a forecast and predict of the future, and find potential marketing strategies. For understanding our customers we transformed customer behavior using RFM and later used different machine learning methods to make predictions. After RFM, we split customers with different levels of loyalty, which means we had to design different business strategies. For forecast and predict of the future, we use Regression Tree method, Naive Bayes method, and logistics regression, and all method have good performance in accuracy of prediction. The final step to develop target marketing strategies that could improve KPI and ROI and directly impact business performance is we used the method of association rule to build different business strategies that should be efficient. By taking the time to understand customers, businesses can improve their bottom line and build long-lasting relationships with their customers.

Association Rule Model

Since association rules only accept factor or categorical variables, we had preprocessed our initial dataset in order to perform the analysis.

Income, Age

Since income and age are both numerical, therefore we have to factor them into three levels based on the 25%, and 75% quartile of the overall dataset. For example, for customer whose income is in the lower quartier will have a label as ‘low’.

# Kidhome, Teenhome, Complain, Response

For numerical columns including Kidhome, Teenhome, Complain, and Response, we convert them into binary variable. For example, if Kidhome = 0, we labeled it as “No”, if Kidhome is greater than 0, we labeled them as “Yes”. Do the same thing for the Teenhome and Complain. For the Response variable, we renamed the column name to “last\_campaign”.

Max\_Spent: Wine, Meat, Gold, Fish, Sweet

We have computed a max amount spent based on these numerical columns ('MntFruits','MntWines', 'MntMeatProducts', 'MntFishProducts', 'MntSweetProducts', 'MntGoldProds'), and label the customer max\_spent accordingly. For example, if customers spend the most on wine, we will label the max\_spent as Wine.

purchase\_mdeia: Web, Catalog, Store

We have computed a max number of purchase through all the media these numerical columns ('Num Purchases', 'NumCatalogPurchases', 'NumStorePurchases'), and label the customer purchase\_mdeia accordingly.

deal: prefer,not prefer  
webvisit: more-likely,less-likely

We have labeled deals and webvisit based on whether their number is higher than the median of the overall datasets, and assign labels accordingly.

accept\_campaign: yes,no  
If the customer accepts any of the five campaigns then yes, other no.

758D

“The Tour de France is not just a bike race—it's a test of human endurance, a tactical mind game, and a vibrant display of regional culture and camaraderie. From nail-biting sprints to steep mountain climbs, and cheering crowds, this iconic race has it all. So, strap on your helmets, let's gear up and get ready to explore the heart-pounding excitement of the world's most prestigious cycling event – the Tour de France!"

Here is the brief overview of the Tour de France. The first edition took place in 1903, although there were only 173 riders participating in, it was still a hard race with 2428 kilometers. A Italian-born Frenchman Garin became the first yellow jersey winner.

In 1987, the 74th edition, both of the numbers of participation teams and riders reached the peak. Since then, the number of teams stayed stable. In the recent decade, top 18 world tour cycling team and 4 local teams will be invited to the tour. Dont look down upon these wildcard riders, they can always become the troublemakers. While the total number of riders may float because of something unforeseen, for example, the covid.

The tournament lasts for over 20 days, so it is a game more about endurance and teamwork. the younger riders may not have more advantages comparing to the older. In fact, the experienced riders intend to know more about how to save the power and strive to win in such a hard competition. So the average age does not float that much.

Now let’s take a look at some detailed information. Since 2000, riding in a big group on the flat road, became harder to filter those superstar riders. So the committee is increasing the portion of mountain stages. A better performance at mountain stages probably leads to a shorter total finish time, Lance Armstrong and Chris Froome are the best examples. They are two of epoch-making riders in the history.

Despite the mountain stages, the time trial stages are also exciting. In a time trial race, cyclist rides alone on a fancy TT bike The only opponent is the time, so heroic stories sometimes happens within the short tt stages. Armstrong is also a impressive TT rider, that is one of the reason of his outstanding achievements.