**Capstone - Funnel Analysis**

**Business Case: Swiggy**

Swiggy is one of the largest food eCommerce platform in the country. Every day more than 1 million users are transacting on the platform. Let’s say you are growth and strategy analyst of Swiggy and you need to generate insight on the company’s performance in 2019. For this, you are going to use the ‘Funnel Case Study Data’ workbook which has 3 worksheets. You can find the details of the sheets below:

***Session Details*** sheet has date wise session count. You can find listing sessions, menu sessions, cart sessions, payment sessions and order sessions day over day

***Channel wise traffic*** sheet has traffic (listing sessions) breakup at the date level.

***Supporting Data*** sheet has other information at the date level which might help you solve the case. The description of the columns is written below

|  |  |
| --- | --- |
| **Metric** | **Description** |
| Count of restaurants | Number of operating restaurants for the day |
| Average Discount | Average discount given to all the transacting customers |
| Out of stock Items per restaurant | Average out of stock items per restaurant  (total out of stock items/total restaurants) |
| Avg. Packaging charges | On an average what is the packaging charges paid by customer while placing the order |
| Avg. Delivery Charges | On an average what is the delivery charges paid by customer while placing the order |
| Avg Cost for two | Cost for two is approximate spent for creating meal for two. |
| Number of images per restaurant | Count of images listed per restaurant on menu page |
| Success Rate of payments | ratio of successful transactions and payments initiated |

**Your Task:**

* You need to identify the increase or decrease in the number of orders using ***Session Details***sheet
  + Fill all the remaining columns of Session details based on the definition mentioned above the column names
  + Identify date of highs and lows in the orders with respect to same day last week
  + Hint: on weekends, Swiggy is getting extra orders naturally. Hence you might see so many highs.
  + Hint: You can ignore difference of less than 20% and above -20% from the same day last week. Hence you can define highs which are above 20% or lows below -20%
* Check if there is change in traffic as compared to same day last week
  + If there is change in traffic, identify the source of traffic change using Channel wise traffic sheet
* Check if there is change in **Overall Conversion** as compared to previous dates
  + Break the overall conversion into smaller part in the following metrics, and create fresh columns on the following metrics in the Session Sheet
    - L2M
    - M2C
    - C2P
    - P2O
  + Identify which one of the conversions is fluctuating
  + Create hypotheses on what could be the possibility for fluctuation in conversions
  + Validate the hypotheses using Supporting data

**Funnel Analysis Report (word doc):** Create a document, mention all the insights related to the business case and submit it. The report should have a list of dates having any order drop and hike as compared to last same day last week. Mention the reason for the drop in front of the date itself.

* Identify if traffic fluctuated as compared to the same day last week
  + If yes, then try to identify the source of the traffic creating fluctuation
* Identify if Overall conversion fluctuated as compared to same day last week
  + If yes, then try to identify smaller conversions leading to the impact (L2M, M2C, C2P, P2O)
  + Once you identify the smaller conversion leading to an increase or decrease in the orders, use supporting data to explain the reason for the same
* Extra marks for structured and formatted doc (10%)

**Supporting excel file (excel file)**: Create a workbook having all the calculations (charts, tables, conditional formatting etc) to your insights.

**CAPSTONE- FUNNEL ANALYSIS**

**-Varsha Vaidya**

**OBJECTIVE**

The objective of the analysis is to examine the conversion rates at various customer stages of Swiggy and significant drop-off points that may lead to a decrease in the company’s overall performance and generate insights on the company’s performance in 2019. Also, as a growth and strategy analyst suggest improvements to boost Swiggy’s performance as well as profits for long term.

**DATA DESCRIPTION**

***Session Details*** sheet has date wise session count consisting of listing sessions, menu sessions, cart sessions, payment sessions and order sessions day over day. It also consists of overall conversion, order change with respect to same day last week, traffic change with respect to same day last week, conversion change with respect to same day last week, L2M, M2C, C2P, P2O.

***Channel wise traffic*** sheet has traffic (listing sessions) breakup at the date level. And also, traffic change across all platforms with respect to same day last week.

***Supporting Data*** sheet has other information at the date level which has count of restaurants, average discount, out of stock items per restaurant, average packing charges, average delivery charges, average cost of two, number of images per restaurant and success rate of payments.

**LIST OF DATES HAVING HIGH AND LOW IN ORDERS WITH RESPECT TO SAME DAY LAST WEEK**

|  |  |
| --- | --- |
| **Date of highs w.r.t same day last week** | **Date of lows w.r.t same day last week** |
| 17-01-2019 | 10-01-2019 - External factors such as public holidays in previous week which contributed to a higher order number as compared to this week. Other factors could be less traffic, seasonal decline, dietary trends, lack of promotions, less advertising, reduced discounts, behavioural changes, customer fatigue, technical issues that may have contributed to the drop in orders. |
| 21-01-2019 | 29-01-2019 External factors such as high number of orders in previous week compared to this week. Other factors could be less restaurant listings, dietary trends, lack of promotions, less advertising, reduced discounts, behavioural changes, traffic only on certain platforms, customer fatigue, increased competition, technical issues, month-end budgetary constraints that may have contributed to the drop in orders. |
| 22-01-2019 | 19-02-2019 Factors such as lack of promotions, less advertising, increased competition, technical issues may have contributed to the drop in orders. |
| 31-01-2019 | 02-03-2019 Factors such as lack of promotions, less advertising, user experience problems, menu changes, increased competition, technical issues, festivities or events may have contributed to the drop in orders |
| 05-02-2019 | 19-03-2019 Factors such as less restaurant listings, low quality images, higher average cost for two, increased competition contributed towards a low M2C conversion, technical issues in payment gateways which lead to a very less P2O conversion leading to the drop in orders. |
| 26-02-2019 | 04-04-2019 Factors such as lack of promotions, less discounts, increased competition, higher average cost for two, increase in out-of-stock items, user experience issues, technical issues may have contributed to the drop in orders |
| 28-02-2019 | 12-04-2019 Factors such as lack of promotions, less discounts, increased competition, higher average cost for two, increase in out-of-stock items, user experience issues, technical issues may have contributed to the drop in orders |
| 09-03-2019 | 25-04-2019 Factors such lack of promotions, increased competition, higher average cost for two, low quality images, user experience issues, technical issues may have contributed to the drop in orders. |
| 24-03-2019 | 20-06-2019 Factors such as less traffic across all platforms, less restaurants, lack of promotions, lack of advertising, less discounts, increased competition, higher average cost for two, increase in out-of-stock items, user experience issues, technical issues may have contributed to the drop in orders. |
| 26-03-2019 | 16-07-2019 Factors such as lack of promotions, lack of advertising, less discounts, increased competition, higher average cost for two, increase in out-of-stock items, low quality images, user experience issues, technical issues may have contributed to the drop in orders. |
| 11-04-2019 | 11-08-2019 Factors such as lack of promotions, less advertising, increased competition, higher average cost for two, user experience issues, technical issues, payment gateway issues may have contributed to the drop in orders. |
| 14-04-2019 | 14-09-2019 Factors such as too many restaurants creating overwhelms, lack of promotions, lack of advertising, less discounts, increased competition, higher average cost for two, extremely high out-of-stock items, low quality images, user experience issues, technical issues may have contributed to the drop in orders. |
| 18-04-2019 | 17-11-2019 Factors such as lack of promotions, lack of advertising, less discounts, increased competition, higher average cost for two, too many out-of-stock items contributing to a very low M2C conversion, low quality images, user experience issues, technical issues may have contributed to the drop in orders. |
| 19-04-2019 |  |
| 27-06-2019 |  |
| 23-07-2019 |  |
| 18-08-2019 |  |
| 21-09-2019 |  |
| 09-10-2019 |  |
| 21-10-2019 |  |
| 09-11-2019 |  |
| 24-11-2019 |  |
| 01-12-2019 |  |
| 22-12-2019 |  |

**SESSIONS SHEET ANALYSIS**

* We can observe that certain dates like 10-01-2019, 29-01-19 and 20-06-2019 have less orders as well as traffic with respect to same day last week. And dates like 17-01-2019, 22-01-2019 and 27-06-2019 have high orders as well as traffic with respect to same day last week indicating strong relationship between listings across platforms and orders.
* Among all platforms Facebook, YouTube and others have significantly contributed to an increase in overall orders on all days as compared to twitter except one day i.e. 22-01-2019 where twitter had maximum traffic indicating possible reasons such as site-specific ad campaigns, discounts, app updates, viral tweets or content, endorsements from influencers or a prominent figure or a brand promoting itself.
* Most fluctuations in orders and traffic with respect to same day last week is seen on Tuesdays and Thursdays.
* Upon performing descriptive analysis for overall conversions as well as breakdown of conversions the following was observed.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Overall conversion w.r.t same day last week** | **L2M** | **M2C** | **C2P** | **P2O** |
| **Mean** | 0.052770287 | 0.237901895 | 0.381420171 | 0.711055397 | 0.806468814 |
| **Standard error** | 0.000605277 | 0.001153462 | 0.002070477 | 0.002263607 | 0.002016794 |
| **Median** | 0.05747485 | 0.244999957 | 0.391999921 | 0.71399997 | 0.811199801 |
| **Mode** | 0.056292693 | 0.237499961 | 0.411999978 | 0.646 | 0.811799885 |
| **Standard deviation** | 0.011579634 | 0.022067027 | 0.039610555 | 0.043305351 | 0.038583535 |
| **Sample variance** | 0.000134088 | 0.000486954 | 0.001568996 | 0.001875353 | 0.001488689 |
| **Kurtosis** | -0.124014113 | 4.978331492 | 16.54042995 | 31.21468173 | 37.52027144 |
| **Skewness** | -0.741119639 | -1.52762462 | -1.0104228 | -3.78192882 | -3.623008822 |
| **Range** | 0.076043488 | 0.162499984 | 0.535999954 | 0.440100266 | 0.475600652 |
| **Minimum** | 0.015671594 | 0.099999985 | 0.135999973 | 0.326399893 | 0.385399884 |
| **Maximum** | 0.091715082 | 0.26249997 | 0.671999928 | 0.766500158 | 0.861000536 |
| **Sum** | 19.31392507 | 87.0720935 | 139.5997826 | 260.2462754 | 295.1675861 |
| **Count** | 366 | 366 | 366 | 366 | 366 |

**DESCRIPTIVE ANALYSIS FOR ALL CONVERSIONS**

1. **DESCRIPTIVE ANALYSIS FOR OVERALL CONVERSION WITH RESPECT TO SAME DAY LAST WEEK**

* Distribution of overall conversion rates is slightly skewed to the left.
* Kurtosis value suggests that the distribution is platykurtic meaning fewer extreme values than in normal distribution.
* Range also indicates that overall conversion rates do not vary widely.
* The data suggests that the overall conversion rates are stable, with minor fluctuations.

1. **DESCRIPTIVE ANALYSIS FOR L2M**

* Distribution of L2M conversion rates is heavily skewed to the left.
* Kurtosis value suggests that the distribution is leptokurtic having sharp peaks meaning frequent extreme values. This indicates more outliers or days with L2M conversion rates are significantly different from the mean.
* Range also indicates that conversion rates vary widely.
* The data suggests that the conversion rates are high however some days experience much lower conversion rates and contribute to fluctuations.

1. **DESCRIPTIVE ANALYSIS FOR M2C**

* The negative skewness indicates that there are some days with significantly lower M2C conversions which bring the mean down.
* Kurtosis value suggests that the distribution is leptokurtic having sharp peaks meaning frequent extreme values. This indicates more outliers or days with M2C conversion rates are significantly different from the mean.
* Range also indicates that conversion rates vary widely depending on days or some specific conditions.
* The data suggests that the conversion rates are stable across most days. However, certain factors lead to variable deviations resulting in lower performance.

1. **DESCRIPTIVE ANALYSIS FOR C2P**

* The strong negative skewness indicates that there are several days with significantly lower C2P conversions compared to major data. Presence of outliers on lower end.
* Kurtosis value suggests that the distribution is highly leptokurtic having sharp peaks meaning frequent extreme values. This indicates more outliers or days with C2P conversion rates are significantly lower than the mean.
* Range also indicates that conversion rates vary widely depending on days or some specific conditions with some days having very low conversion rates.
* The data suggests that the conversion rates are inconsistent across most days.

1. **DESCRIPTIVE ANALYSIS FOR P2O**

* Distribution of P2O conversion rates is strongly skewed to the left indicating most days with high conversion rates and some with much lower rates.
* Kurtosis value suggests that the distribution is highly leptokurtic having sharp peaks meaning frequent extreme values. This indicates more outliers at the lower end. Some days with P2O conversion rates are very low.
* Range also indicates that conversion rates vary widely depending on days or some specific conditions with some days having very low conversion rates.
* The data suggests that while most days perform well in converting payments to orders, some days have substantial drop-offs that affect the overall performance.

**CHANNEL WISE TRAFFIC ANALYSIS**

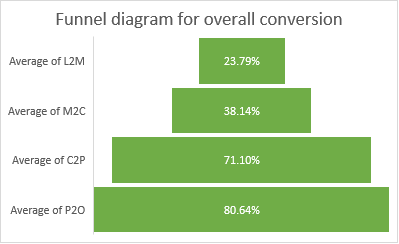
* There is steady traffic across all platforms on weekends and weekdays.
* Maximum traffic is observed on weekends especially for Facebook, YouTube and others.
* There is maximum fluctuation on Twitter and Facebook as compared to same day last week. And most fluctuation is observed on Tuesdays and Thursdays.
* Least traffic is observed for twitter for all days except one day i.e. 22-01-2019 indicating site specific promotions, viral posts, algorithmic changes etc.
* According to the pivot charts, most traffic is observed on Facebook, followed by Youtube, then others and finally twitter which we can use to vigorously promote ads to boost conversions.

**SUPPORTING DATA ANALYSIS**

* The average discount rate is a strong motivator for users to explore more listings and move to the menu. However, these discounts have to be displayed prominently to grab users’ attention.
* The average of 35 images per restaurant is indicative of visual content being used effectively. High- quality images can increase user engagement and encourage users to explore menus.
* The average delivery charge across all months is reasonable, however any unexpected or high charges may cause users to abandon their cart at this stage.
* With an average payment success rate of 93%, technical issues seem minimal. However, remaining portion represents a significant portion of lost orders.
* The average count of restaurants, average price for two, average out of stock items and average packing charges seem reasonable across most months. However, too many listings can confuse the user eventually leading to abandonment of order. Higher out of stock items may disappoint users especially on weekends.

**FUNNEL OBSERVATIONS**

* The funnel shows a progressive drop-off in conversion rates at each stage, with significant variability, especially in M2C and C2P stages.
* The skewness and kurtosis indicate frequent outliers and fluctuations are common possibly due to certain technical issues, UI/UX issues and external factors like promotions and competition.



**REASONS FOR FLUCTUATIONS**

* **Technical issues:** Bugs in checkout process, slow page loading times or errors across different stages.
* **User experience:** Poor design, difficult navigation or unclear information at different stages preventing users to move forward.
* **Pricing inconsistencies**: Hidden costs and pricing inconsistency cause users to drop-off at the payment stage
* **External factors**: Better competitor promotions, changes in customer behaviour or seasonal fluctuations.

**OPTIMIZATION OF THE APP TO BOOST PROFITS AND CONVERSIONS**

* **Improve UI/UX experience:** 
  + - * 1. L2M stage: Enhance listings with good quality pictures, better descriptions and personalized recommendations to keep users engaged.
        2. M2C stage: Optimize menu layout and overall product presentation with sorting based on popularity or relevance.
        3. C2P stage: Simplify cart review and checkout process, clearly display costs or surcharges to minimize surprise charges.
        4. P2O stage: Ensure payment process is simple and seamless, with multiple payment options and easy-to-use interface.
* **Monitor and reduce technical issues:** Regularly test and monitor the platform for any issues, errors or bugs that might disrupt the user journey.
* **Personalization and incentives:** Nudge customers with data-driven personalization to offer discounts or promotions to users who drop-off at critical stages. Also introduce and boost loyalty programs for users who complete their orders regularly.
* **Optimize pricing strategy:** Review pricing strategies, including delivery charges or surcharges at the beginning to maintain transparency and competitiveness.
* **Optimize delivery charges:** Offer free delivery on orders for a short span of time to encourage users to complete their orders.
* **A/B testing:** Conduct A/B testing on different elements of the funnel to identify what works best for the company and implement these changes to boost conversions.

**CONCLUSION**

* The funnel shows that as users generally progress through the stages there are significant drop-offs particularly in the middle stages i.e. M2C and C2P.
* By improving the user experience, addressing technical issues and optimizing pricing strategies, we can enhance and stabilize conversion rates, leading to increased profitability and overall success of the company.