**Interpreting the effectiveness of PopRunner Pilot Run**

**PopRunner Project Report**

**Manishi Kumar Ankush**

**Omair Abdul Malik**

**Shivang Ashitkumar Patel**

**Anurag Gautam**

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# EXECUTIVE SUMMARY

Based on descriptive statistical analysis, this report outlines key findings and recommendations for online advertising campaigns implemented by PopRunner through pop-up messages with discount codes on its website and sending promotional emails to its subscribers. The end goal of this experimental marketing strategy is to persuade consumers, drive sales and address the recent decrease in website traffic. The analyzed data contains consumer information such as age, gender, loyalty status, individual spending, and consumer activity in the pop-up and email ads.

The research on 9,032 consumers suggested that the pop-up campaign had a broader reach, with 50% of the population receiving the pop-up messages compared to the email campaign’s reachability at 8%. In addition, the email campaign was more effective in generating sales as the average spend of consumers who opened the email was 240.8, 82% higher than that of consumers who opened the pop-up message, with an average spend of 131.7.

Online advertisement does impact sales. While both campaigns have shown good potential to engage consumers, the email campaign was more effective than the pop-up campaign. Further recommendations such as analyzing demographic information, understanding consumer preferences by rolling out surveys, optimizing campaigns by curating ad content, and assessing different campaign types can improve overall effectiveness.

# OBJECTIVE AND QUESTIONS

## Project purpose

### Objective of the project

Improve sales by engaging valued consumers through pop-up messages on the website and sending promotional emails.

### Questions

Our case study aims to address the business questions below:

Did PopRunner effectively reach its intended audience?

How receptive were consumers to this campaign?

Analyze the campaign type that has yielded more lead generation and identify any key takeaways from this approach.

### Data

The data comprises four tables with the below information for the analysis:

1. consumer: This table consists of demographic information such as age and gender. It also has a consumer\_id corresponding to the unique consumer identifier and loyalty\_status information, which PopRunner internally categorizes based on the past spending of consumers.
2. email: This table has opened\_email column that depicts consumer interaction with email blasts in binary language 0 (opened) or 1 (not), alongside consumer\_id
3. popup: This table is similar to the email table and has a field named pop\_up that pertains to consumer interaction of messages as 0 and 1. It also has an additional column, saved\_discount, that further bifurcates consumers who have received the promotional message and applied the coupon or not.
4. purchase: The purchase table consists of the sales\_amoun\_total that denotes the contribution of each consumer based on their consumer\_id.

Two types of advertisement campaigns were implemented to interpret the results:

1. Email campaign: Reach out to consumers via promotional emails
2. Pop-up campaign: Reach out to consumers by displaying a pop-up message on the website with a discount code.

# DATA ANALYSIS AND RESULTS

## Customer background (Query 5 and 6)

From a gender diversity point of view, out of 9,032 consumers, there were 6,903 Females and 2,129 Males in the consumer dataset distributed in a 3:1 ratio approximately, with a mean age of 30.6 for Females and 32.5 for Males. Therefore, in terms of percentages, there is a frequency distribution of 76% Females and 24% Males.

In all, there are five loyalty status levels, namely 0, 1, 2, 3 & 4, comprising 1529, 1740, 2612, 1384, and 1766 consumers, with their mean ages at 29.4, 30.1, 30.7, 31.6, and 33.5 years respectively. The mean age is the youngest in the loyalty status level 0, but loyalty status level 4 has the highest mean age. Loyalty level 2 has the highest number of consumers and contributes to 29% of the population.

|  |  |  |  |
| --- | --- | --- | --- |
| **Gender distribution** | | | |
| **Variable** | | **Frequency distribution** | **Mean (Age)** |
| Gender: Male | | 2,129 (24%) | 30.61394 |
| Gender: Female | | 6,903 (76%) | 32.45186 |
| **Loyalty distribution** | | | |
| Loyalty level = 0 | 1,529 (17%) | | 29.37345 |
| Loyalty level = 1 | 1,740 (19%) | | 30.10345 |
| Loyalty level = 2 | 2,612 (29%) | | 30.69908 |
| Loyalty level = 3 | 1,385 (15%) | | 31.59278 |
| Loyalty level = 4 | 1,766 (20%) | | 33.51302 |

**Table 1: Customer background**

## Sample Size (Query 7 and 9)

Of 9,032 consumers, 4,516 have not received a pop-up message or a discount code. 3,029 consumers received a pop-up message but did not add a discount code. 1,487 consumers received the pop-up message and added the discount codes.

From the data comprising 9,032 consumers, 716 have opened the email blast, 8316 have not opened or are yet to open the email.

|  |  |
| --- | --- |
| **Variable** | **Frequency distribution** |
| Pop-up = 0, discount code = 0 | 4516 (50%) |
| Pop-up = 1, discount code = 0 | 3029 (34%) |
| Pop-up = 1, discount code = 1 | 1487 (16%) |
| Opened email = 0 | 8316 (92%) |
| Opened email = 1 | 716 (8%) |

**Table 2: Sample distribution**

## Sales (Query 8, 10, and 12)

* On average, consumers spent 135.2142 during their online purchases.
* From a conversion standpoint, the pop-up advertisement was not a successful campaign. Consumers who did not receive a pop-up had a total sales of 626,324.5 with 138.7 as its average, but consumers who received a pop-up made sales of 594,929.8 worth, and their average sales were 131.7.

|  |  |  |
| --- | --- | --- |
| **Variable** | **Average (in $)** | **Total Sales (in $)** |
| Total sales | 135.2142 | 1,221,254 |
| Pop-up = 0 | 138.6901 | 626,324.5 |
| Pop-up = 1 | 131.7382 | 594,929.8 |
| Opened email = 0 | 126.1210 | 1,048,822 |
| Opened email = 1 | 240.8268 | 172,432 |

* The email blast has been a successful campaign for the consumers who have opened the email. The average sales are at 2x (240.8) compared to consumers who have not opened the email (126.1), indicating that advertisement impacts sales. However, it is noteworthy that the sales for consumers who have not opened emails are much higher than those who have opened emails.

**Table 3: Sales data by advertisement (pop-up and email)**

## Use cases (Query 11 and 13)

One of the consumers who spent the least during online shopping did not open the pop-up message. In contrast, the highest-spending consumer opened the email, suggesting a better engagement from the two campaign approaches.

# RECOMMENDATIONS AND CONCLUSION

Evidently, the pilot run has succeeded, but there is scope for improvement. By narrowing the audience, PopRunner can ensure that its marketing campaigns are more effective from a reachability standpoint. Consumers were receptive to both campaigns, as many reacted to this advertising drive. In addition, the pop-up campaign was more extensive in reachability, while the email campaign was more effective in generating sales.

Advertisement does impact sales, as substantiated by the higher average sales amount for consumers who received and opened emails compared to those who opened the pop-up message. Hence, the recommendation is to prioritize the email campaign with a similar targeted approach used in sending out pop-up messages with discount codes to the subscribers. This coverage can be achieved by:

1. Further analyzing demographic information like gender, age, and loyalty status groups led to more ads-to-sales conversion ratio.
2. Roll out consumer surveys to understand their preferences and satisfaction levels to meet their requirement.
3. Campaign optimization by curating ad content with customized suggestions and experimenting with various discount offers.
4. Other practical approaches by assessing different campaigns such as messaging, visuals, and calls to action.