

Facebook Ads Split Testing Analysis with Campaign Budget Optimization Techniques Using Tableau

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Abstract— The Covid-19 pandemic has had a major impact on the national economy, including MSME. The impact of Covid-19 caused the decline and bankruptcy of some MSME due to declining sales due to social restrictions. The solution to survive and thrive is to change a conventional business into an online business. One of the media used for online business is social media marketing, especially Facebook and Instagram with the most users. However, with this great potential, many MSME cannot take advantage of it due to lack of knowledge and fear because of the disadvantages of advertising with Facebook ads. To reduce advertising losses, this study provides a split testing analysis of Facebook ads with the campaign budget optimization (CBO) technique so that the optimal budget for advertising has potential and terminates ads that are not potential. The results of the study obtained that the budget was optimized on ad set1 of Rp. 139,943, CTR 2.58% shows good creative ads, CPC, and low link clicks with an average of Rp. 615 and 59 content serving below the standard 65% due to slow speed web. This research is expected to help MSME avoid advertising losses because they do not go through the testing stage and do not optimize the CBO technique provided by Facebook.

Keywords—Facebook ads, Split Testing, CBO, Tableau.

I. INTRODUCTION

The Covid-19 pandemic has had a major impact on the national economy, including Micro, Small and Medium Enterprises (MSMEs) which are the backbone of the community's economic system [1][2]. The impact of Covid-19 caused a decrease in income and even the bankruptcy of most MSMEs [3][4]. To be able to deal with this, a strategy is needed to survive and even continue to grow in a pandemic condition. The problem for most MSMEs during the pandemic is that sales continue to decline because there are no consumers, especially for conventional sellers due to social restrictions. This social restriction causes a decrease in income even though various ways are done to stay afloat [5]. This decline in income has led to many layoffs of workers, workers affected by dismissal try to survive by running an online business to survive [6].

One of the government's solutions for MSMEs to survive during the pandemic is to change conventional businesses into online businesses with digital marketing [7][8]. Digital marketing to reach new consumers is a solution for MSMEs, so optimizing digital marketing, especially in social media marketing, online advertising, search engine marketing, needs to be studied and applied. The utilization of social media has surged dramatically throughout the pandemic, particularly the use of Facebook and Instagram. From Statista, user of Facebook increased by 2,936 million in April 2022 [9]. Facebook stands as a social media platform boasting the highest number of users,

specifically 2.9 billion globally, while Instagram ranks fourth with 2.1 billion users [10]. User of Facebook and Instagram is not only limited to promotional media, but also acts as a medium to communicate with consumers and potential consumers, with good communication built with consumers can increase consumer confidence in the products or services offered through educational content in the form of images or videos [11][12].

The great potential of social media has caused many businesses to migrate online, which has an impact on increasingly fierce competition. This competition causes many MSMEs who are just starting to use social media to market unsold products and don't even get consumer traffic because competitors use advertising to reach more consumers [13][14]. The marketing method using advertising is an alternative to speed up marketing and sales because it reaches a large and targeted audience according to the product or service offered. However, the majority of MSMEs are afraid to use advertising because of the high risk of loss because marketing funds are not in line with product sales [15]. This problem occurs not because of Facebook or Instagram ads, but because of the wrong way of advertising that did not go through the testing process.

So, this study has the aim of analyzing how to carry out the advertising testing process with the campaign budget optimization (CBO) method to measure ads that reach many audiences and get sales conversions by analyzing creative ads used for advertising.

II. RESEARCH METHOD

This research has several stages, the first stage is to create a product or service sales website (landing page) in accordance with the buyer persona that has been created, the second stage is to do a page like test, which is to advertise business fan pages that have interacted on Facebook and Instagram, the third stage is to do split testing, the fourth stage is to carry out campaign budget optimization (CBO) techniques and the fifth stage is the testing stage.

A. Landing Page

A sales website or landing page is a website specifically designed for selling a product or service with a marketing mindset. This page will later be used to advertise and be accessed by potential consumers. The function of the sales website is to make people interested in buying, to make people interested, the sales website must at least have three elements, namely focusing on one product with a clear solution so that targeted potential consumers are interested in reading the offer.

The website contains problem solving for targeted consumers and the website provides special offers to potential customers [16][17].

B. Page Like Test

Page like tests are run to strengthen ad accounts so that they are not easily banned by Facebook, in addition to strengthening the fan pages used for advertising so that they are not easily hacked and also add followers to business pages. The page like test is run for three days with a minimum budget of Rp. 15,000/day to get maximum results. The purpose of advertising a page like test is only to increase likes on the fan page, not sales conversions, so creative ads are used that can make people like and comment on the ad account that is run [18].

C. Split Testing

Split testing, also commonly known as A/B testing when only two variations are involved, is a method of conducting a randomized, but controlled experiment. This type of testing is often associated with website optimization, to increase traffic, clicks, or purchases. The traffic for the website is distributed between the formats and variations of the control website. These variations can include a different title, layout, color, or image. The data from these tests were then reviewed to determine which version of the website resulted in the most improvement [19][20].

The first stage of the campaign was carried out in this study using split testing on the Facebook ads manager. Split testing is done by creating a campaign with three ad sets and nine ads as shown in Figure 1. The purpose of this split testing is to find out which ads are performing well, optimize the pixels embedded in the ads to make them more optimal in advertising, and analyze poor ad performance. so that running ads can be in accordance with marketing targets and to find out which ads are still running or which ads are turned off so that there is no loss when advertising [21].

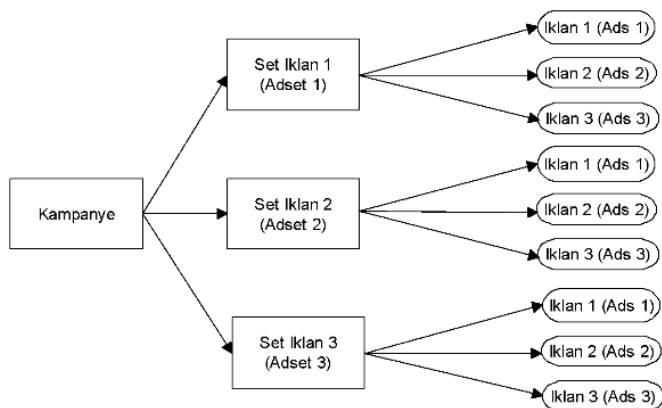


Figure 1. Split Testing Campaign Structure

Running split testing requires one campaign of three ad sets to determine the number of people to target, gender, ad locations and excluded locations. In addition, ad set can regulate consumer behavior that will be exposed to campaigned ads, both behavior as business admins, payments via Facebook, excluding 2G network users and many other behaviors. The ads that are run from each ad set are three ads with different location,

behavior, gender, and exceptions that have been set in the ad set so that it becomes nine ads with differences in each ad [22]. Ads one, ads two and ads three have different creative ads with the same format, namely video as shown in figure 2.

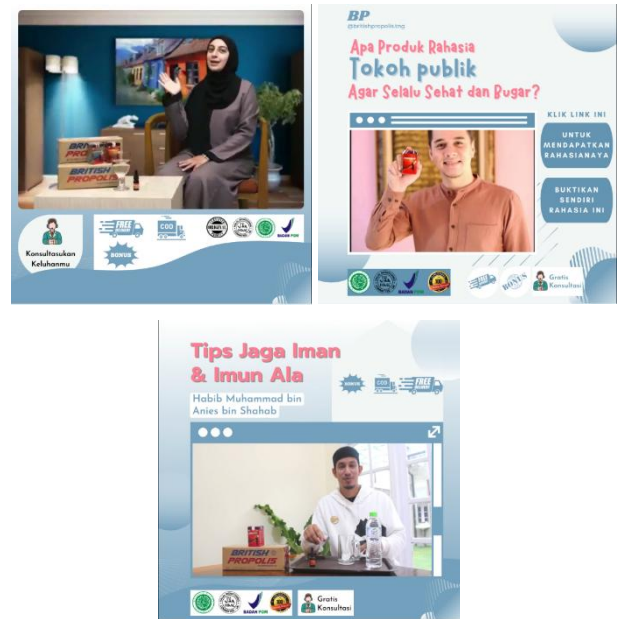


Figure 2. Ads Creative Ads

Figure 2 illustrates the creative ads of each ad that is run in video format. Each ad also has different copywriting to test the appropriate copywriting for the ad being run. Ads that are run with different creative ads and their copywriting to see the best ad performance with creative ads that get the most clicks and make the target consumer stop for a moment to watch the running ad and read the ad caption.

D. Campaign Budget Optimization (CBO)

Facebook introduced campaign budget optimization in 2017 to manage advertising budgets. campaign budget optimization also allows advertisers to set budget levels that will automatically be allocated to the ad set according to the available budget or bid strategy [23]. Before the CBO, advertisers had to allocate their budget per day or forever at the ad set level. This CBO allows advertisers to choose campaign budgets or create budget levels in ad sets. Facebook claims CBO is very effective at optimizing advertising budgets.

The way CBO's work is to set an overall budget on a single campaign. This budget has the flexibility to spend more on the ad sets with the best odds, and less on the ad sets that are underperforming. The set amount can apply every day when the campaign is running, or for the entire life of the campaign. If you're on an all-time budget, you can choose to run your ads on a schedule. The benefits of CBO include setting campaign budgets flexibly with respect to and budgets used across ad sets, getting the best results from campaigns at the lowest cost and simplifying campaign setup and reducing the amount of budgets manually managed.

This study uses three ad sets where each ad set has three ads. The budget used in this research is Rp. 85,000 per day for one

campaign. With the distribution of targets ad set 1 16 million targets, ad set 2 20 million targets and ad set 3 22 million targets.

E. Testing

Tests conducted to analyze good ads at low costs by running ads for three days with a total budget spent of Rp. 191835. There are four columns that are assessed, namely budget spent, CTR (link click through rate), CPC (cost per link click), link clicks and content impressions. The standard used for CTR is > 1.5% if more than that standard creative ads are campaigning successfully, CPC is low if CRT is above 1.5%, link clicks and content impressions are interconnected. If the content impression is <65% then the website used is slow or has malware. All diagram image data is processed using tableau to visualize the data [24] [25]. Tableau is widely used to visualize data because it is easy to use and features for complete data visualization [26].

III. RESULTS AND DISCUSSION

The results of the ad campaign testing for three days are in accordance with the testing stages carried out starting from the budget spent, CTR (link click through rate), CPC (cost per link click), link clicks, content impressions and all data in the dashboard.

A. Spending Budget

Budget spent in this research is Rp. 85,000 per day for one campaign and Rp. 191,835 during the three-day campaign. For each ad set 1 spends a budget of Rp. 139,943, ad set 2 spent Rp. 37,730, ad set 3 costs Rp. 14,162 as shown in figure 3.

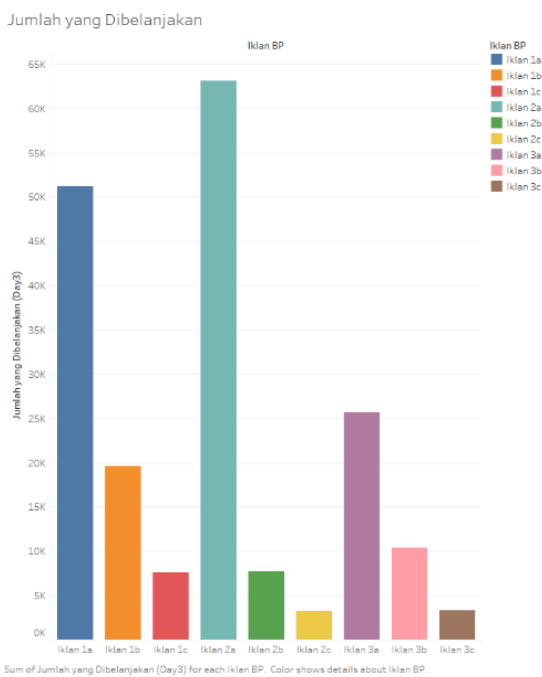


Figure 3. Table of Budget Expenditure

From Figure 3, it can be concluded that budgeting using campaign budget optimization is optimized for advertisements that have the best potential among other advertisements. In this study, an ad set with a high budget is ad set 1, which shows that

ads in ad set one have the opportunity for consumers to match the target, so the funds are optimized for ad set 1 while the other ad set runs with a small budget.

B. CTR

CTR used in this study is a comparison of the total CTR of all advertisements from the three ad sets. The test shown is data per day the ad is run, starting from the first day to the third day. The results obtained are shown in Figure 4.

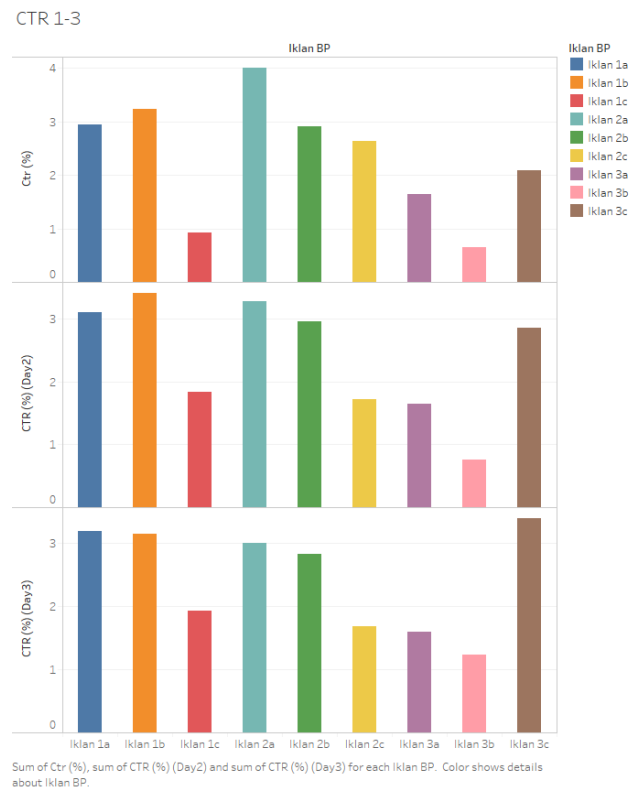


Figure 4. CTR Data Comparison

During the three days of testing there were some ads on the first day less than 1.5%, but on the last day of testing all ads exceeded 1.5%, meaning that the creative ads that were campaigned could attract the attention of the target market because of the high percentage of clicks. In addition, the copywriting used is in accordance with the advertisement and is accepted by the target market. From the graph above, it can be concluded that creative ads include winning campaigns.

C. CPC and Click Link

In this study, CPC and link clicks are compared in a single graph to show the number of people who clicked on a link in proportion to the budget spent. For more details, the comparison chart is in Figure 5.

From the graph above shows the cost per click for each ad is cheap, because the CTR on all ads is above 1.5%. During the campaign, the average cost per click to bring in one customer who clicks a link is Rp. 615 with a total of 312 link clicks. From the graph above, it is noted that the highest CPC cost is Rp. 951 with the click of link 8, this is due to the target set on the ad set.

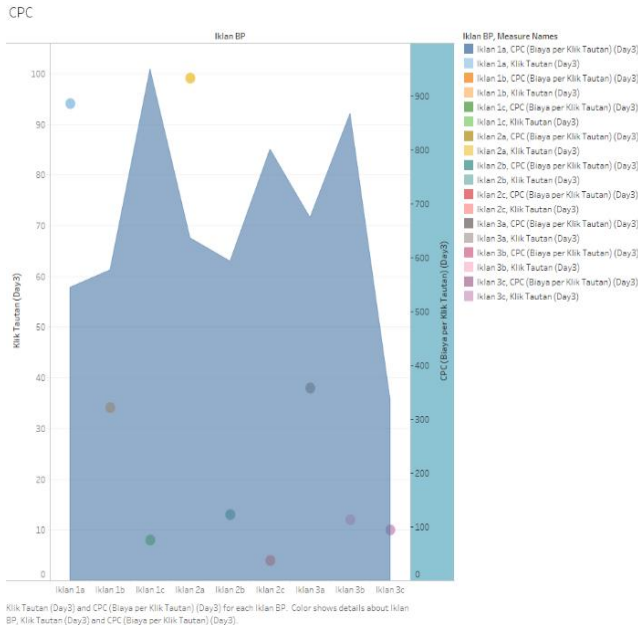


Figure 5. Comparison of CPC and Click Link

D. View Content

The number of content views or view content means the number of people who enter the sales website after clicking the link on the ad. Comparison of the content of each ad for three days is shown in Figure 6.

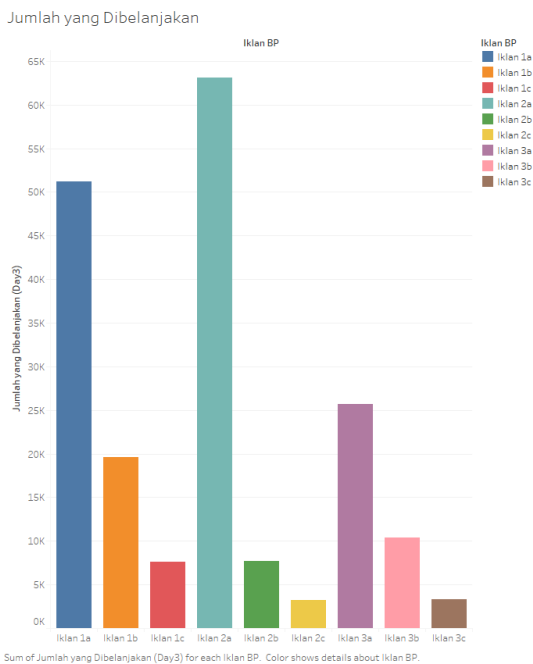


Figure 6. View Content Graph

From the view content graph, ad 1c has no visitors, while other ads are visited by some people who click on the link from the ad. Content serving has not reached 65% of the content delivery standard that generates visitors to the website because the total visitors are only 59 while the standard is 109 people. The small number of content impressions is caused by a slow

website, so the website speed needs to be increased so that everyone who clicks directly goes to the sales website page.

E. Campaign Test

Campaign testing is done by looking at the ad data in the campaign column. With a budget of Rp. 85,000 and the total spent Rp. 191,835, CTR per impression 2.58%, CPC Rp. 615, click link 312 and show content 59, showing that split testing with CBO techniques is proven to be able to maximize funds on potential ads and reduce budget on non-potential ads. All creative ads used in the campaign are in accordance with the target market, there are only problems with the sales website which causes fewer people to visit the website after clicking the link on the ad. Testing the campaign is shown in figure 7.

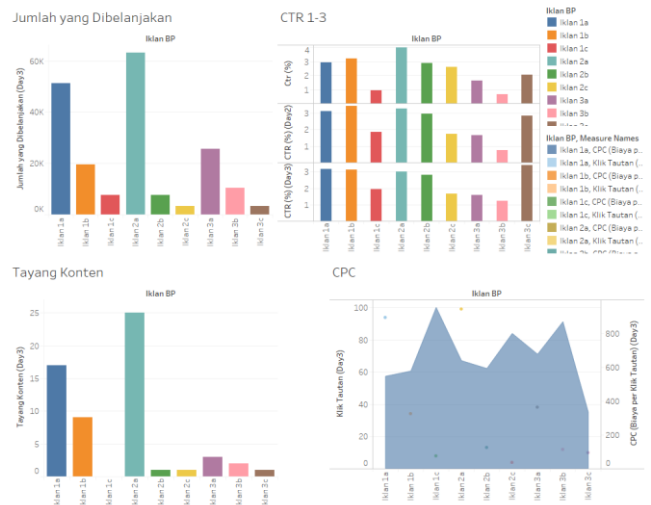


Figure 7. British Propolis Advertising Campaign Data

IV. CONCLUSION

Split testing analysis of Facebook ads with campaign budget optimization techniques runs optimally, where ads that have good performance will get a bigger budget, while other ads get a smaller budget. In this study, the largest budget was on ad set 1 with a budget of Rp. 139,943. CTR on this campaign exceeds 1.5% indicating good creative ads performance. The number of link clicks is cheap because of the high CTR with an average of Rp. 615 clicks. The content serving is below the standard 65% compared to the number of link clicks. The conclusion of this campaign is that creative ads are good and can be used, while the website needs to be increased in speed.

This research is running optimally but not perfect because there are several aspects that are not measured, including speed web, and the number of people who click the buy button on the sales website and enter WhatsApp. Likewise the distribution of ad set locations that are not analyzed and displayed with a tableau. This research can be expanded by adding the mentioned shortcomings along with the amount of budget added to reach more audiences.

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