

# Data Visualization of Click on Advertisement

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## Abstract:

Attention to AD click-through rates is critical to understanding customer needs. However, apart from focusing on click-through rates, this study likewise concerns the regional distribution, the age, the time spent on the AD's site, etc., of humanity who click on an AD. Furthermore, visualization presents data in graphical form, making the AD's information easy to understand. It helps companies optimize their advertising investment strategies and adjust the direction of their advertising.

**Keywords:** Advertisement, Click AD, strategies, visualization presents data

## 1. Introduction

Attention to AD click-through rates is critical to understanding customer needs. However, apart from focusing on click-through rates, this study likewise concerns the regional distribution, the age, the time spent on the AD's site, etc., of humanity who click on an AD. Furthermore, visualization presents data in graphical form, making the AD's information easy to understand. It helps companies optimize their advertising investment strategies and adjust the direction of their advertising.

## 2. Target Audience

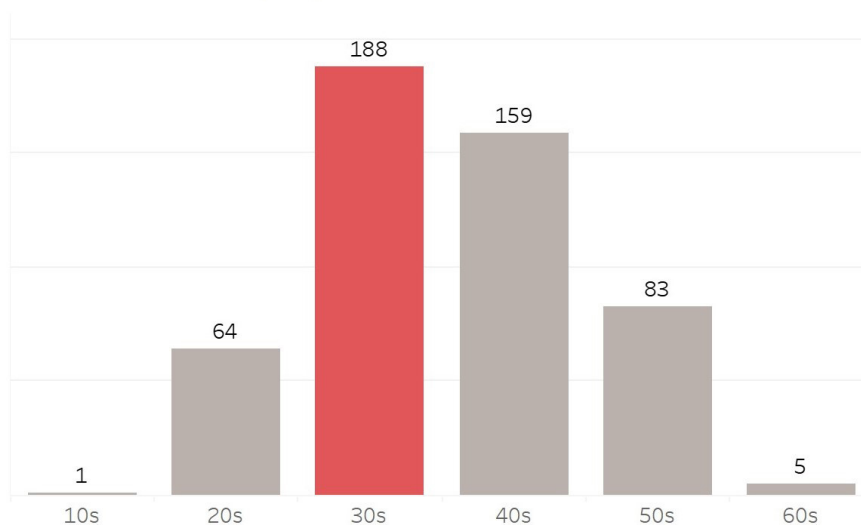
The most significant target audience is companies that need to advertise their products. In this study, the demographic regions of clicks on AD improved

the company's ability to identify target countries for advertising products. By targeting advertising demographics by click-through age, companies can more effectively attract targeted customers by clearly defining the customer age profile of a company's product. The temporal distribution of the advertising population determines the optimal time for the company to advertise and the length of the advertisement.

Another target audience is the potential consumer. Through this research, potential consumers gain a multi-dimensional understanding of click-through advertising information, which reduces impulsive shopping situations in daily life and helps consumers reasonably manage their personal resources and complete asset allocation.

## 3. Data Graphic of Age

Clicked on Ad by age



Yusha Bai(2023)|source: Kaggle

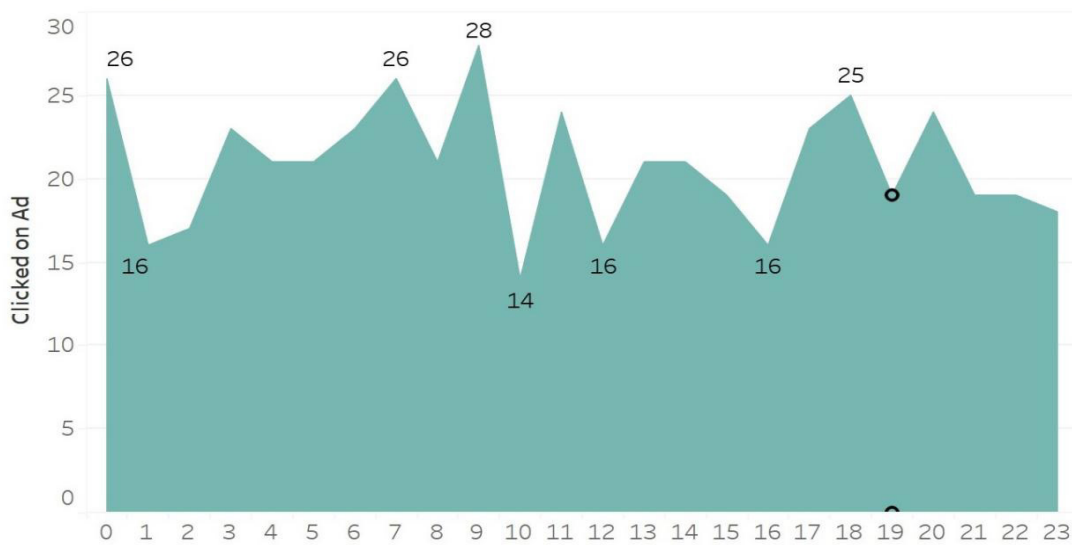
To visualize the age information in the data set more readable, the researcher divided the ages into groups, which were shown to be a group of 10-19 years old, a group of 20-29 years old, and a group of 30-39 years old, for a total of six groups by analogy.

The data graph clearly shows that people in their 30s are the furthest along in their preference to click on ads, followed by people in their 40s, 50s, 20s, and finally, people in their 60s and 10s. This result is what the

researcher expected, as humans in their 30s have the most purchasing power and are similarly curious about new objects. As one grows older, curiosity about new objects gradually diminishes, so humanity is not easily interested in a product because of advertising. Humanity will buy things they need rather than what ads recommend.

## 4. Data Graphic of Timestamp

timestamp

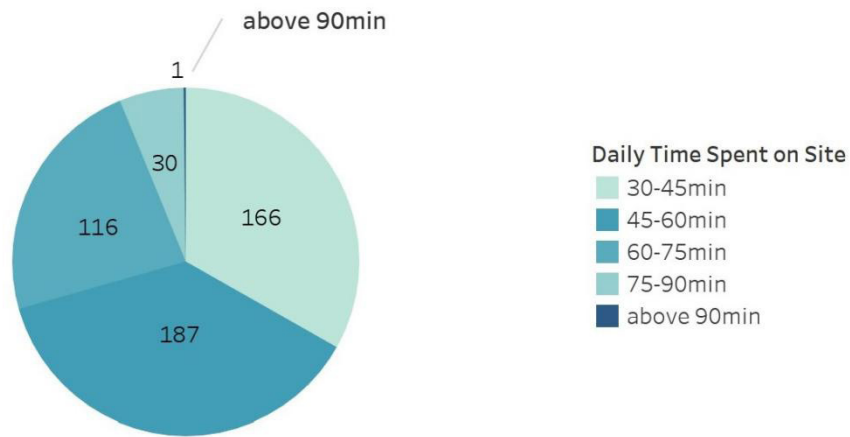


Yusha Bai(2023)|source: Kaggle

The researchers divided the time by the hour and displayed 24 hours. The data icon notes that the number of people who click on an ad at 9 a.m. is 28, followed by the number of people who click on an ad at 7 a.m. and 0 a.m. at 26, and then the number of people who click on an ad at 6 p.m. is 25. These are the four hours when people click on ads more often. The number of people who clicked on the AD at 10 a.m. was 14, and the number of people who clicked on the AD at 1 a.m., 12 a.m. and 4 p.m. was 16. These are the four hours when fewer people click on AD.

Before emerging this data graphic, the researcher thought that the most intensive time to click on the AD would be in the evening (21:00-3:00). However, after visualizing the data, the researchers found no significant difference in the number of human clicks per hour on the ads. In conclusion, humanity's attraction to advertising is independent of time, just as humanity browses computer websites whenever possible.

### 5. Data Graphic of Times Spend on Site



Yusha Bai(2023)|source: Kaggle

The researcher divided time spent on site into five groups, showing groups of 30 to 45 minutes, 45 to 60 minutes, 60 to 75 minutes, 75 to 90 minutes, and above 90 minutes. The data graph shows that most consumers visit the site for about 45 to 60 minutes, with 187 visits, followed by 166 visits for 30 to 45 minutes and 161 for 60 to 75 minutes. A few consumers spent more than 75 minutes browsing, including 30 who spent between 75 and 90

minutes and only one who spent more than 90 minutes. As the researchers expected, most people would watch the ad about an hour. During that hour, consumers would become immersed in the ad’s rendering of the product and would be highly likely to make an impulse purchase to buy the product. This again suggests that the company’s advertising has been fairly successful.

### 6. Data Graphic of the Map

Country distribution



Yusha Bai(2023)|source: Kaggle

To analyze this data set, the researcher shows a map of the countries of consumers who click on this ad. This

map shows that the number of people who clicked on this ad covered almost the entire world. It includes countries

such as the United States, Australia, Canada, Turkey and Russia. As shown on the map, Australia, Turkey, and other countries have a maximum of seven people clicking on AD, South Africa has six people clicking on AD, China has four people clicking on AD, and the United States Australia has three people clicking on AD, etc.

The statistics of this data set are quite comprehensive. It is not limited to countries with a certain level of economic capacity, such as developed or developing countries, making click-on advertisement statistics more convincing.

### **7. Conclusion**

The purpose of advertising is to introduce a product to a

customer and to stimulate the consumer's initial demand by introducing the product's performance, usage, and price. Through visualizations of four data graphs, the surveyors demonstrated to advertising companies and potential consumers that advertising does stimulate consumer consumption of goods and that potential consumers will spend significant time and money on advertised goods. As a result, companies that need to advertise continue to advertise persistently to attract potential customers.

### **Reference**

1. Santello, Gabriel. "Advertisement - Click on Ad Dataset." Kaggle, 1 July 2022, [www.kaggle.com/datasets/gabrielsantello/advertisement-click-on-ad](https://www.kaggle.com/datasets/gabrielsantello/advertisement-click-on-ad).