

A Research Concerning Increasing Traffic for YouTube Commercial Videos

in Beauty Industry

Jiaying Wu (jw3644)

Table of Contents

INTRODUCTION AND PROPOSAL HIERARCHY.....	2
MANAGEMENT DILEMMA	2
MANAGEMENT QUESTIONS	2
RESEARCH PURPOSE AND BENEFITS	2
EXPLORATORY PHASE AND RESEARCH QUESTIONS.....	3
EXPLORATORY QUESTIONS AND SECONDARY DATA SOURCES	3
RESEARCH QUESTIONS AND HYPOTHESES	4
RESEARCH DESIGN.....	5
CHOICE OF RESEARCH METHOD.....	5
RESEARCH METHODOLOGY.....	6
SAMPLING PLAN	7
OPERATIONALIZE ALL VARIABLES.....	8
LIMITATIONS AND MITIGATIONS	8
ANALYSIS AND RECOMMENDATIONS	9
DATA ANALYSIS.....	9
RESEARCH DELIVERABLE.....	9
RESEARCH JUSTIFICATION	10
REFERENCE	10

Introduction and Proposal Hierarchy

Management Dilemma

Marketers all acknowledge that video communication is much more compelling, engaging and touching than other forms of advertisement, especially in beauty industry - a vibrant, exciting and thriving vertical on YouTube platform¹. Today, beauty commercial video view is challenged due to fierce competition and delicate content design. According to Google Research, fourteen new beauty industry advertisement videos are launched every single second². Content wise, Nielsen Lab Research and HIRO Media revealed that video content affects up to 30% of the video impact³. However, it is by no means easy to compete with numerous competitors and create commercial videos that attract larger view traffic and better meet the preferences of segmented consumer groups in beauty industry.

Management Questions

With the above challenges, the management questions would be – how to generate more views for commercial videos and how to better target different consumers in beauty industry.

Research Purpose and Benefits

This research is designed for a media lab focusing on commercial videos production. The research results can help the lab to figure out the essential aspects of commercial videos including key factors effecting video views, correlations between video settings and video impact, and audience differences in beauty industry. Therefore, the media lab would enhance its capability to produce commercial videos with stronger impact, help them to better understand the consumer features in beauty industry, and brand themselves with more

comprehensive video production expertise. Moreover, for its customers – the companies leveraging video advertising to promote beauty products, publishing a commercial video that attracts more targeted consumer audience can largely increase their online sales leads, brand visibility, consumer impact and ultimately their marketing ROI.

Exploratory Phase and Research Questions

Exploratory Questions and Secondary Data Sources

Three questions could be explored in the scope of the management questions:

- What is the best timing to release a commercial video (from both day selection and time slot selection perspectives)?
- What are the most frequently used key words in video titles, tags and descriptions of those YouTube trending videos in beauty channel? (YouTube trending videos are the most popular videos being displayed both on YouTube website and also external webpages with YouTube videos embedded.)
- What are the overall sentiments or emotions distribution in the content of the trending videos' in beauty channel?

To study the above exploratory questions, text mining analysis methods and ggplot analysis can be utilized based on a secondary data source, Trending YouTube Video Statistics, shared through Kaggle.com (<https://www.kaggle.com/datasnaek/youtube-new>). This dataset has over 24,000 observations and was collected using the YouTube API. It includes detailed information about the daily trending videos of the U.S. from November 2017 to February 2018 and contains

variables such as video title, channel title, category, publish time, ratings, tags, views count, likes count, dislikes count, and comment count, etc.

Research Questions and Hypotheses

Two research questions will be studied to address the management questions.

Research Question 1: What are the correlations between the number of beauty industry commercial video views, ratings, the number of likes, dislikes, comments and sharing? By studying this question, key driver(s) of the view traffic will be found so that further steps can be taken to increase views accordingly.

Research Question 2: For YouTube commercial videos in beauty industry, do the average ratings of the most popular videos differ upon audience's gender, age, and annual income separately? To be specific, gender will be separated by male and female. Age will be separated by 34 years old because it is the watershed between the very different age groups: millennium and generation X⁴. And annual income will be separated by \$ 59,000 as it is the 2016 median household income of U.S. reported by the U.S. Census Bureau in 2017⁵. By researching this question, the media lab would learn the feedbacks of the videos from segmented consumers. Based on this question, hypotheses would be as follows:

H₀ 1: average ratings given by male equal to that by female

H₁ 1: average ratings given by male differ from that by female

H₀ 2: average ratings given by audience above or equal to 34 years old are the same as that by audience below 34 years old

H₁ 2: average ratings given by audience above or equal to 34 years old differ from that by audience below 34 years old

H_0 3: average ratings given by audience with annual income above or equal to \$59,000 are the same as that by audience with annual income below \$59,000

H_1 3: average ratings given by audience with annual income above or equal to \$59,000 differ from that by audience with annual income below \$59,000

Research Design

Choice of Research Method

Research type of this study is a triangulation of quantitative and qualitative methods as both survey and focus group will be applied to answer the research questions. The combination of quantitative and qualitative methods aims to increase the perceived quality of the research.

For the first question - What are the correlations between the number of beauty industry commercial video views, ratings, the number of likes, dislikes, comments and sharing, both the regression analysis of mentioned secondary data source and results collected by a commercial video survey designed by this research as primary data source will be leveraged to figure out the key driver(s) of the video views. (When answering this question, the results of the survey will not be reviewed by gender, age and income but will be reviewed as a whole.)

For the second question - do the average ratings of the most popular videos differ upon audience's gender, age, and annual income separately, both survey and focus group studies will be conducted. The results of the survey will be reviewed upon gender, age, and annual income to learn the different preferences between different consumer groups. The information collected from the focus group will further inspire the media lab to summarize the shared features of different groups and learn their feedbacks upon the most popular commercial videos in beauty industry.

Research Methodology

Three steps will be taken to conduct this research. The first step is to utilize regression analysis by establishing linear regression models upon the secondary dataset - Trending YouTube Video Statistics. Results of this dataset analysis will find the correlations between different variables and answer the first research question.

Step two is to implement a computer-assisted self-administered survey with over 1,000 YouTube user responses. Part I of the survey includes demographic questions such as gender, age, annual income range, etc. Part II will include ranking questions to investigate the key factors when consumers choose to watch a beauty industry commercial video. A sample survey question would be:

Please rate from 1 to 5 for below factors when you choose to watch a commercial video on YouTube Beauty Channel (1 is the lowest priority. 5 is the highest priority.)

	1	2	3	4	5
<i>high rating</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>more likes</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>more dislikes</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>more comments</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>more sharing</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part III of the survey will be a combination of displaying selected videos and asking follow-up ranking questions. Videos will be selected from the top three trending commercial videos of YouTube Beauty Channel from 2016 to 2017. One question will show up following one video, encouraging the survey taker to rate the video from 1 to 5 as well (three videos and its following questions in total). In this step, the survey results will serve as the primary dataset from consumers' point of view and answer both research questions.

The last step is to implement a focus group interview. 108 group members will be randomly selected and clustered to six groups: 1) male, 2) female, 3) above or same as 34 years old, 4) below 34 years old, 5) annual income above or same as \$59,000, and 6) annual income below \$59,000. Since each of the top three videos mentioned above will be discussed, there will be eighteen groups in total. The interview size is six-person per group. Each group will attend a 30-minute semi-structured group discussion to answer both designed questions and open discussion. A sample designed question would be: *will you buy the product or service after watching this commercial video and why*. An open discussion topic would be: *which part of this commercial video do you like most and why*. This step will primarily answer the second research question. Meanwhile, the thoughts generated from focus group are also helpful for the explorative questions, and for the media lab to understand different consumer groups better.

Sampling plan

The target population of this research is all of the YouTube users in the U.S. Using stratified random sampling method, the individual samples will be randomly selected from groups clustered by gender, age and annual income level. Reason for choosing this sampling method is because the stratified sampling reduces selection bias. It gives each YouTube user an equal chance of being chosen and thus assures that the sample is representative for the entire target population. Moreover, different groups of people: female or male, above or below 35 years old), above or below \$ 59,000 annual income, will surely react differently towards the commercial video in beauty industry. Using this sampling method can enhance the conclusions for research question two.

Operationalize all Variables

Variables of secondary dataset	dependent variable	Video views	count of trending video views
	independent variable	Video ratings	ratings of the trending videos
		Number of likes	count of trending videos likes
		Number of dislikes	count of trending videos dislikes
		Number of comments	count of trending videos comments
		Number of sharing	count of trending videos sharing
		Publish time	publishing day and time of the trending videos
		Video titles	titles of trending videos
		Video tags	tag list of trending videos
Video descriptions	descriptions of trending videos		
Variables of survey dataset	dependent variable	Trending video rating	ratings for the selected videos in research survey (1-5)
	independent variable	High rating factor	ratings for the high rating factor in research survey (1-5)
		More likes factor	ratings for the more likes factor in research survey (1-5)
		More dislikes factor	ratings for the more dislikes factor in research survey (1-5)
		More comments factor	ratings for the more comments factor in research survey (1-5)
		More sharing factor	ratings for the more sharing factor in research survey (1-5)
		Gender	genders of survey takers and interviewees (male, or female)
		Age	ages of survey takers and interviewees (≥ 34 or < 34)
Annual income	annual income of survey takers and interviewees ($\geq \$59,000$ or $< \$59,000$)		

Limitations and Mitigations

The limitation comes from the group study quality. As the way of how observers ask the questions and opinions of domain group members will influence each group member, the original thoughts and viewpoints might be hard to capture. Also since the sample size of the focus group is relatively small, the results may not be generalized. Mitigations can be previous training for observers to ask the questions in a standard way, pre-interview notification to encourage interviewees to be themselves and be candid. As for sample size, only shared

features or common answers will be used to address conclusions to avoid bias, or the sample size could be enlarged based on the research budget.

Analysis and Recommendations

Data Analysis

For the secondary dataset, linear regression analysis will be applied to learn the correlation between the dependent variable “number of views” and five independent variables “ratings, numbers of likes, dislikes, comments, and sharing”, which are all continuous variables. The overall alpha value will be set as 0.05.

For the survey dataset, a one-way ANOVA will be used because there will be factor variables of two different levels in the survey: gender as male or female, age as above or below 35 years old, annual income as above or below \$59,000. Since there will be three tests upon different categories (gender, age, annual income), the Bonferroni Method will be used to avoid Type I Error. Corrections will be set for multiple comparison and alpha value will be adjusted as $0.05/3=0.0167$.

Research Deliverable

A final research analysis report that addressed all research questions and connected with actionable business solutions will be delivered to the management team of the media lab. Meanwhile, a presentation version of the final report is also very important as it will use data visualization, logic flow charts and bullet points to communicate and interpret the findings and recommendations in a clearer way.

Research Justification

As data tell the facts, research data analysis itself will be the best evidence to convince the media lab to move forward. There are two implications of potential findings through primary analysis. First, while a large number of likes attracts more views, a big volume of dislikes also has a positive correlation with the views of commercial videos. Consumers have the curiosity to figure out why this video can generate so much dislikes. Second, found through a mock focus group discussion, males tend to give higher ratings to videos that explain the scientific background of a beauty product, while females tend to rate higher for those videos with before and after comparison photos. Therefore, the shared humanity (curiosity) and different thinking pattern of males and females should be considered when design the video content.

Reference

[1] Carla, M. (2014, February 4) YouTube and the Beauty Industry: How Brands are Getting Crushed. Tubular Insights. Retrieved May 4, 2018 from <http://tubularinsights.com/youtube-beauty-industry/>

[2] Google Research. Filtered "video ads", "past hour", "beauty". Retrieved February 11, 2018 (10:40AM-11:40PM). from <https://trends.google.com/trends/explore?cat=44&date=now 1-H&q=video ad>

[3] Nielsen Lab Research and HIRO Media (2016, December 15). Online Video Advertising Effectiveness. Retrieved February 11, 2018 from http://hiro-media.com/nielsen_media_lab_study_commissioned_by_hiro/

[4] Andy, K. (2015, September 8), How different age groups identify with their generational labels. World Economic Forum. Retrieved May 2, 2018 from <https://www.weforum.org/agenda/2015/09/how-different-age-groups-identify-with-their-generational-labels/>

[5] Income, poverty, and health insurance coverage in the united states: 2016. Census Bureau. Retrieved May 1, 2018 from <https://www.census.gov>.