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FINAL PROJECT REPORT

DIGITAL MARKETING ANALYSIS

TOPIC: FAST_FOOD MCDONALD's

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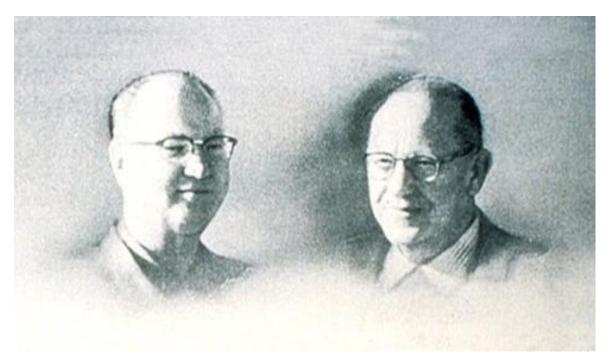
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A. Overview of MCDONALD's

I. History of MCDONALD's



Brothers Richard and Maurice McDonald opened the first McDonald's at North E Street at West 14th Street in San Bernardino, California, on May 15, 1940. The brothers introduced the "Speedee Service System" in 1948. , extended to use the principles of modern fast-food restaurants that their predecessor White Castle had put into practice more than two decades earlier. McDonald's original mascot was the chef's hat on the hamburger, which was



called "Speedee".

In 1962, the Golden Arches

replaced the Speedee as the universal mascot. Clown mascot Ronald McDonald, introduced in 1965. It appeared in advertisements aimed at children.

On May 4, 1961, McDonald's first filed a trademark application in the United States under the name "McDonald's" with the description "Drive-In Restaurant Services", which was further renewed. On September 13, McDonald's, under the direction of Ray Kroc, filed a

McDonald's

trademark application for a new logo—an "M" symbol.

overlapping

double domes. But before the double dome, McDonald's used a single dome for the



architecture of their buildings. Although the logo "Golden Arches."

appeared in various forms, but the current version was not used until November 18, 1968, when the company took precedence over trademark registration in the United States. The present corporation is credited with being a Ray Kroc franchise founded on April 15, 1955. In fact, it was the ninth McDonald's restaurant to open overall, although the location has since been opened. demolished and rebuilt in 1984. Kroc was noted as an aggressive business partner, driving the McDonald brothers out of the industry.

Kroc and the McDonald brothers vied for control of the business, as documented in Kroc's autobiography. In 1961, he bought the McDonald brothers' shares in the company and began to expand the company's reach around the world. The purchase was worth \$2.7 million Kroc, a huge sum at the time. The last San Bernardino restaurant was demolished in 1971, and the site was sold to the Juan Pollo chain in 1998.

The area serves as the headquarters of the Juan Pollo chain, and a McDonald's and Route 66 museum. With McDonald's expansion into many international markets, the company has become an icon of globalization and the spread of American style of life. Its prominence makes it a frequent subject of public debates about obesity, corporate ethics, and consumer responsibility.

II. Product of MCDONALD's



McDonald's mainly sells burgers, a variety of chicken, chicken sandwiches, french fries, soft drinks, breakfast items and desserts. In most markets, McDonald's offers salads and

vegetarian dishes, rolls, and other local dishes. On a seasonal basis, McDonald's offers McRib



sandwiches. Some speculations about McRib.'s seasonality

lis a

barbecue-flavored pork bun periodically sold by the international fast-food chain McDonald's) adding to its appeal. Every March, McDonald's offers a Shamrock Shake in honor of Saint Patrick's Day. In addition, the chain also sells a number of items in the United States on a regional basis; e.g. Hatch Green Chile Double Cheeseburgers, topped with New Mexican green peppers, are only available in the southwestern state of New Mexico.

Products are offered as "eat in" (when the customer chooses to eat in the restaurant) or "take away" (when the customer chooses to take the food out of the premises). "eat-in" meals are served on paper-lined plastic trays on the tray floor. "Takeaway" meals are usually delivered with the food packaged in a special McDonald's-branded brown paper bag. In both cases, individual items are wrapped or boxed as appropriate.

Since Steve Easterbrook became the company's CEO, McDonald's has streamlined its menu, which in the United States has nearly 200 items. The company sought to introduce healthier options and remove high-fructose corn syrup from hamburger buns. The company removed the artificial preservative from Chicken McNuggets, replacing the chicken skin, safflower oil and citric acid found in Chicken McNuggets with powdered pea starch, rice starch, and lime juice.

In September 2018, McDonald's USA announced that it is no longer completely using artificial preservatives, flavors and colors from seven classic burgers sold in the US, including hamburgers, cheeseburgers, and cheeseburgers., double cheeseburger, McDouble, Quarter Pounder with Cheese, double Quarter Pounder with Cheese and a large Mac. However, pickles will still be made with artificial preservatives, although customers can choose not to receive pickles with their burgers.

In November 2020, McDonald's announced McPlant,

a plant-based burger, with plans to develop additional meat substitutes on the menu including chicken substitutes and breakfast sandwiches. This announcement comes after a successful trial of the plant-based meat substitute Beyond Meat.

III. Customer of MCDONALD's

1. McDonald's Demographic Segmentation

McDonald's target age group is consumers from 6 to 70 years old, both male and female.

McDonald's demographics are particularly focused on multi-generational families who enjoy a wide range of products and experiences, such as Happy Meals and playgrounds for kids, and McCafe coffee and breakfasts for kids. moms and combo meals for family outings.

McDonald's target market includes employees, professionals as well as students, who are attracted by the value-conscious meal options and free Wifi offered in McDonald's restaurants.

2. McDonald's Geographic Segmentation

McDonald's serves an international audience with restaurants in 120 countries, in both urban and rural areas. More than 37% of McDonald's stores are located in the US.

In 2021, France and Germany will have the most McDonald's restaurants of any European country. In 2021, McDonald's in the United States generated more than \$8 billion in revenue, while the rest of the world combined accounted for more than \$12 billion.

McDonald's is continuously expanding in Asia Pacific – in 2020, China has the largest number of restaurants (4,400 stores), compared with 2,900 in Japan and 1,023 in Australia.

3. McDonald's Behavior Segmentation

McDonald's target audience is mainly middle-class consumers who are interested in fast, cheap and convenient food.

During the pandemic, McDonald's famous drive-thru service became even more popular. In 2020, the average drive-to-drive purchase took 349 seconds. McDonald's target market has become increasingly health-conscious in recent years, and the company has taken significant steps toward becoming a healthier brand. For example, in 2016, McDonald's removed artificial preservatives from Chicken McNuggets, and in 2015, liquid margarine was replaced with butter in breakfast items such as English muffins, cookies and round bread.

4. McDonald's Psychological Segmentation

Typical McDonald's customers are characterized as 'easygoing' and 'careless', but at the same time, they are loyal to the brand and eat fast food frequently.

Mostly working-class people, McDonald's target audience has an annual household income of \$48,000 to \$65,000, and these customers are likely to use coupons and take advantage of menu items. McDonald's \$12 \$2 menu.

For a savvy millennial customer base that includes a wide range of foodies, McDonald's is looking to innovate with gourmet ingredients and healthier options. The brand also localizes the menu by region; In India, for example, 50% of the menu is vegetarian.

IV. Competitors

1. MCDONALD's vs BurgerKing:

Like PepsiCo, Inc., v. in the history of American business. For more than 60 years, McDonald's has been a pioneer in setting the standard by which all other franchises operate. But there are signs that that role could be reversed. The resurgent Burger King is forcing McDonald's to adjust to it, not the other way around.

McDonald's and Burger King started food franchises in 1955 and 1954, respectively. McDonald's has always been the bigger company, but no doubt each has influenced the other for more than six decades. their competitive era.

Each restaurant boasts iconic products. Burger King has a Whopper sandwich, and McDonald's has a Big Mac and a Quarter Pounder. Whopper and Big Mac are the two best-selling burgers of all time.

Burger King boasted 1.7 billion Whopper sales per year in 2002.

McDonald's achieved similar numbers with the Big Mac in 2017.

Each company continues to strengthen its international presence, albeit with different results. One reason is culture. For example, many Europeans consider fast food an quintessential American tradition. Burger King and McDonald's menus sometimes struggle to attract foreign consumers, leaving the international market underdeveloped, especially in the Asia-Pacific region.

McDonald's: The Real Burger King

McDonald's has the highest market capitalization of any fast food chain in the United States, with over \$168 billion in October 2020. (It's worth noting that Subway has more stores and Starbucks. have higher revenue). , employs 1.9 million people and serves more than 70 million meals a day.

McDonald's locations brought in more than \$21 billion in 2019. Even as growth figures have declined since early 2014, McDonald's still tops the fast food world.

But those falling numbers should worry investors, who haven't realized big returns for several years. MCD has had an admirable track record during and immediately after the 2008–2009 global recession. Turns out cheap fast food is essentially recession-proof, but 2014 was the worst year for the company since 2003.

Under Ray Kroc, the visionary founder of the franchise, McDonald's became the world's leading food brand by selling the rights to run a McDonald's store. With this model, MCD reduces input costs and allows local owners to handle individual units. Food costs remain low and service remains prompt for an ever-evolving culture.

Burger King: The revival of fast food

After a tumultuous and disappointing start to the 21st century, Burger King shareholders have seen The Wendy's Company, Subway and Starbucks overtake them as McDonald's main competitors, respectively., at least in terms of sales revenue.

Then private equity firm 3G Capital bought the struggling giant for \$4 billion in 2010. It triggered a recovery effort that has been quite successful. Burger King merged with Canada's coffee staple Tim Hortons in 2014, to form a new publicly traded company called Restaurant Brands International (NYSE:QSR).

- CUT REDUCED FAT

By the third quarter of 2017, Burger King had surpassed McDonald's and Wendy's by significant margins. A report by Citi Research concludes that 3G Capital has made two important strategic adjustments: cutting business fat and simplifying its public image. It worked, and operating margins jumped from 17% in Q2 2011 to over 40% in Q3 2018.

Burger King Global (BKW)'s main source of revenue comes from franchises, including royalties and fees; Royalties come from a percentage of sales from each unit. As of 2020, 99.7% of Burger King locations are franchised.

DOUBLE SHARES

According to Citi Research, at a time when McDonald's menus are more complex than ever, creating record wait times, Burger King is repackaging or rebranding older items to help consumers get out.

Part of the revival strategy is a direct challenge to McDonald's products. In November 2013, Burger King introduced the Big King sandwich, with two patties, three-layer dumplings and a special sauce, as a no-nonsense competitor to McDonald's successful Big Mac.

When McDonald's brought back the McRib sandwich, Burger King unveiled the \$1 BK BBQ Ribs as a cheaper alternative. In 2018, Burger King announced a quarter-pound burger in a direct hit to McDonal's quarter-pound burger.

COFFEE WAR

Next up is a new group of coffee products from Burger King to challenge the McCafe menu. McDonald's made waves years ago by partnering with Starbucks to create recyclable and compostable coffee cups. So Burger King targeted and acquired Tim Hortons, Inc., Canada's leading donut and coffee shop. The stock prices of both companies skyrocketed following a CA\$12.5 billion deal, including a CA\$3 billion funding from Warren Buffett's Berkshire Hathaway.

There's nothing wrong with Burger King's value proposition. It's as good as McDonald's with the same products, just a little more premium and sometimes, lower prices.

FRANCHISING

Making a meaningful investment in Burger King and McDonald's often means buying and operating a new franchisee. Since each company operates on an international level and no two markets are exactly alike, the easiest way to compare franchise options is to look at Franchise Disclosure Documents (FDDs).

According to the 2020 FDDs for McDonald's, the initial investment amount for a McDonald's franchise ranges from \$1.3 million to \$2.3 million. The company also charges an initial franchise fee of \$45,000.

Burger King franchises require similar investments. BK FDD 2020 suggests that, excluding property acquisition and improvement costs, the total initial investment falls between \$333,100 and \$3.4 million, with an initial franchise fee of up to 50,000 dollars.

2. MCDONALD's vs KFC:

McDonald's:

Economic Environment

Organizations in the fast food industry are not excused from any disputes and troubles. Specifically, they do have their individual concerns involving economic factors. Branches and franchises of fast food chains like McDonald's has the tendency to experience hardship in instances where the economy of the respective states is hit by inflation and changes in the exchange rates. The customers consequently are faced with a stalemate of going over their individual budgets whether or not they should use up more on these foreign fast food chains.

Hence, these chains may have to put up with the issues of the effects of the economic environment. Particularly, their problem depends on the response of the consumers on these fundamentals and how it could influence their general sales. In regarding the operations of the company, food chains like McDonald's tend to import much of their raw materials into a specific territory if there is a dearth of supply. Exchange rate fluctuations will also play a significant role in the operations of the company.

Technological Environment

McDonald's generates a demand for their own products. The company's key tool for marketing is by using the television advertisements. There are similarly some claims that McDonald's are inclined to interest the younger populations more. The existence of play spots as well as toys in meals offered by the company shows this actuality. Other demonstration of such a marketing strategy is apparent in the commercials of they use. They employ animated depictions of their characters like Grimace and Hamburglar. They also employ popular celebrities to promote their products. The like Justin Timberlake has become endorsers for McDonald's worldwide "lovin' it" campaign.

Moreover, the operations of McDonald's have significantly been infused with new technology. Elements like the inventory system and the management of the value chain of the company allows for easy payments for their suppliers and other vendors which the individual stores in respective markets deal with.

Competitive Environment

The main competitors generally identified with McDonalds are the KFC. McDonald's product value is its greatest strengths. McDonald's launches several different innovative products regularly to attract the customers such as the happy meals for kids, giving away small toys with the kids meal, organizing birthday parties and other events in the stores for the customers. The customers know what to expect when they walk into a McDonalds store. It gives great emphasis to human resources by satisfying both the customer and the employees. Next is the innovation aspect wherein new products line up to catch up with the new trends and tastes of the people. Its diversity into other new business ventures can also be considered as its strengths.

Social Environment

Articles on the international strategies of McDonald's seem to function on several fields to guarantee lucrative returns for the organization. To illustrate, the organization improves on establishing a positive mind-set from their core consumers. McDonald's indulge a particular variety of consumers with definite types of personalities. It has also been noted that the company have given the markets such as the United Kingdom, an option with regards to their dining needs. Pointed out that McDonald's has launched a sensibly valued set of food that tenders a reliable level of quality for the respective market where it operates. In the case of McDonald's they establish a good system in determining the needs of the market. The company uses concepts of consumer behavior product personality and purchasing decisions to its advantage. It is said to have a major influence on the understanding of the prospective performance of the organization in a particular market.

- KFC:

Economic Environment

Economic rate is very important in doing business. It will affect the currency exchange rate in Malaysia which impacts on businesses costs and operations. When come to outsourcing currency is a determination of company's success. If there is positive growth in economic, that means businesses are doing great in the market. KFC may enjoy a short period of high profit due to increasing economic growth but they also have to prepare in case economic rate of Malaysia falls. It is normal that a company borrow money from the bank. So if there is

any change in the interest rate, it will somehow affect debt repayment and also the incentive to borrow. Little changes in the interest rate will affect the operating profit of KFC and their debt ratio.

Technological Environment

For a fast food restaurant, technology does not give a very high impact on the company and it is not a significant macro environment variables.

However KFC should be looking to competitors innovation and improve itself in term of integrating technology in managing its operation. For example in inventory system, supply chain management system to manage its supply, easy payment and ordering systems for its customers and wireless internet technology. Implementation of technology can make the management more effective and cost saving in the long term. This will also make customer happy if cost savings results in price reduction or promotional campaign discount which will benefits them from time to time.

Competitive Environment

The main competitor of KFC Malaysia currently is McDonald. McDonalds's in particular is a direct competitor, as they have already successfully introduced their Salads which directly targets 'healthy food' conscious Malaysian. But, there are a number of other competitors that is also focusing on 'chicken' types products. All this competition makes it quite difficult for KFC to maintain or even broaden their customer base. However, with the introduction of a new and healthy product range, KFC can differentiate itself from most competitors and will gain a competitive advantage. One of the most significant advantages that KFC has over McDonald is the early entry and establishment of KFC in Malaysia. The first restaurant of KFC in Malaysia was opened in year 1973 while the first restaurant of McDonald in Malaysia was opened in the year 1982. This early entry into the market is very important because first comer usually gain more from the experience curve.

Social Environment

KFC has made it their responsibility to consumers that they will provide quality chicken in a fast, efficient way. They also say that their meat comes about ethically and through humane treatment. This has not always proved true in the past, since the PETA has become involved

with their warehouses that 'grow' the chickens. KFC has made statements to the patrons of KFC, that the chickens will not be treated badly in the progression from birth to the processing plant. KFC also has the Colonel's Kids program, a charity organization that helps kids become educated and grow up in a better world than that which they have known. It addresses the child care crisis and steps up to the plate to help out where possible. KFC has done all it can to ensure that people are happy with the facilities and means by which their food comes about.

V. Marketing Channel

What can marketers learn from McDonald's digital marketing strategies?

1. Post regularly/schedule posts

All McDonald's social media accounts are always up to date. They post regularly and always engage their audience. You'll find a McDonald's post for every occasion – a festival, a national event or a boring Monday; McDonald's always finds a way to make it look interesting and unique!

2. Post information relevant to their target audience.

From introducing a separate menu to Indian customers to having a separate social media page for them, (even for different parts of India – West and South, East and North), McDonald's always make sure their information is relevant to the target audience. They know when to post what and how to post it. This is one of the most important aspects that marketers should learn.

3. Customers & Followers are engaged in both fun and customer service ways.

If you go to McDonald's Instagram account, you'll find all sorts of posts that engage your audience and make them laugh, as well as those that sell their products and advertise their services. It is important to always have the perfect balance between these post types.

4. They combine current and seasonal events.

A personal favorite element of McDonald's strategy is their creativity in various events and festivals. The number of McD logos that have been used to convey different things is unrealistic. Let's take a look at some of their MANY creations: ...and we could go on, but you got it right.

5. Use a warm, fun, and helpful tone for your brand.

The main purpose of social media is to talk to your audience and interact with them. McDonald's uses a warm tone that makes readers feel like they're one of them when speaking to their audience.

6. Leverage the unique characteristics of each platform and customize the content across channels.

Most of the brands we studied often post the same images and videos across all social media platforms. However, McDonald's guarantees the use of different types of content on all platforms. They have realized that each platform is different and has a different audience, so the posts should be different as well.

VI. Digital Marketing Strategy.

1. McDonald's Social Media Marketing Strategy.

McDonald's has ensured that its marketing strategies involve a strong presence of social media platforms. All of their campaigns take into consideration social media platforms and include the interests of their respective target audiences.

For McDonald's, social media platforms are discussion forums. They allow them to engage in short and quick conversations with visitors, fans, and critics. Furthermore, transparent, accessible, and "informable" eye-level communication – whether by chat, posting, tweeting or other means – results in positive cognitive effects. brand pole. According to research results, practically any corporate issue can be successfully posted on channels as long as it is relevant enough, relevant to the channel and prepared for the target group; the only difference in channel processing is in this preparation.

2. McDonald's Instagram Marketing Strategy.

Instagram has become increasingly important for McDonald's in reaching younger demographics since late 2017.

Prior to the Corona pandemic, you might have noticed safety and cleanliness concerns on McDonald's Instagram page. They have included their concepts and measures in conversations with users. Furthermore, they communicate regularly and consistently with their contactless touchpoints (McDrive, McDelivery, ordering & in-app payments) on Instagram. Their audience enjoys and appreciates these frequent reminders and trust-building contacts.

3. McDonald's Facebook Marketing Strategy.

McDonald's Facebook network continues to be larger and more dynamic than average.

Despite its declining relevance, Facebook remains McDonald's most popular communication channel. This is partly due to the technical comment options.

4. McDonald's Twitter Marketing Strategy.

McDonald's maintains a friendly and warm tone even on Twitter. They still market their products and do so very subtly and friendly.

5. McDonald's YouTube Marketing Strategy.

McDonald's has used YouTube to achieve a variety of short- and long-term goals to increase their revenue and brand awareness. Here are the results McDonald's can get from YouTube:

In the short term, YouTube helped McDonald's increase sales by up to 37% compared to web TV.

Speaking of long-term impact, YouTube generated a brand impact of 138% from an average YouTube campaign:

Listening to Stay on Trend

McDonald's uses their social accounts to advertise new products, promote sweepstakes, and report on community engagement. These campaigns and initiatives are timely and relevant, capitalizing on the speedy nature of social to stay involved in their customer's conversation.

For example, as consumers become more health conscious and <u>trends</u> shift towards more nutritional food, McDonalds uses social media to stay competitive and position their brand as a healthy, all natural choice for the whole family. After recognizing this trend, the chain increased healthier menu options such as salads and wraps and provided more accessible nutritional information. These timely actions allow the chain to compete with more customizable Limited Service Restaurants such as Panera and Chipotle.

Remaining Authentic and Transparent

Transparency is key to any successful social media strategy and McDonalds makes honesty a major priority in their social communications. After learning the hard way from PR crises and cover ups such as the "pink slime" controversy, the fast food chain now strives to be open and honest about all of their operations.

Currently, McDonald's is running a <u>Q&A campaign</u> encouraging consumers to ask questions about their ingredients, products and, food preparation. These questions are answered both on social and through a video series that shows the entire story behind their operations. The brand acknowledges consumer concerns about the quality of their products and is working to set the record straight.

Personal social engagement

For a large brand, McDonald's strives to make their social channels feel personal and friendly. Customer service personnel respond to comments and tweets, both positive and negative, in a patient and cheerful manner. Using listening to pick up on keywords, the fast food brand jumps in on conversations, often to the delight of the user.

Frequently, individuals will comment questioning the legitimacy of McDonald's food and ingredients. In this case, account admins respond quickly, providing ingredient information and links to the website in order to stop rumors in their tracks. Similarly, when a customer has a complaint about an experience, representatives ask for the store and employee name in order to deal with the problem directly. As a global brand, McDonald's faces many challenges with customers on a daily basis. Using the power of social, customer service personnel are able to address and help as many customers as possible and improve their experience with the brand.

Quality content

McDonalds uses their social networks to promote various types of content. Using Sprinklr's Social Business Index tool, we are able to easily examine McDonald's top-performing content pieces.

Of these, we noticed a couple trends:

Successful posts often focused on the consumer's experience. McDonald's strives to associate its food with positive moments such as having a morning coffee. These highly relatable campaigns foster a bond with the consumer on an emotional level. Post by McDonald's.

- Specific campaigns, such as the Q&A campaign, also result in successful posts.
 These daily visual posts promote initiatives by staying on the forefront of the consumer's mind and creating social buzz across all channels. <u>Post by McDonald's</u>.
- · Many of the highest performing pieces were not in English. This is a reflection on the global nature of the McDonald's brand and the importance of having personnel and community engagement software that understand local dialects and culture.

 Post by McDonald's.

Overall, McDonalds uses their social accounts on both a large scale, growing brand equity, and a smaller scale, tending to specific and local customers. When both methods are used in tandem, the result is a successful and robust social strategy.

As seen by the case of McDonald's, social can be a powerful tool for the restaurant industry brand and beyond. Download the <u>full report</u> to see the Top 25 restaurant brands in social and dive deeper into the data.

B. DATA COLLECTION

I. Get data to your device: by google colab code

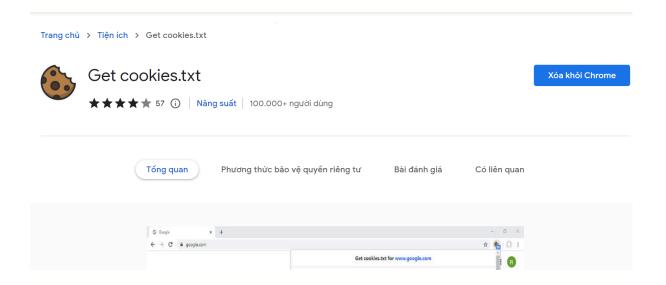
Get data from facebook:

The library allows scraping information about articles and comments in those articles from a page on Facebook so that users can use analytics. After connecting to the drive, start downloading the library

%pip install facebook_scraper

```
%pip install facebook_scraper
 Looking in indexes: <a href="https://pypi.org/simple">https://us-python.pkg.dev/colab-wheels/public/simple/</a>
             Collecting facebook_scraper
                 Downloading facebook_scraper-0.2.59-py3-none-any.whl (45 kB)
                           45 kB 2.1 MB/s
             Collecting demjson3<4.0.0,>=3.0.5
                   Downloading demjson3-3.0.6.tar.gz (131 kB)
                            131 kB 8.8 MB/s
             Collecting dateparser<2.0.0,>=1.0.0
                  Downloading dateparser-1.1.4-py2.py3-none-any.whl (292 kB)
                            Collecting requests-html<0.11.0,>=0.10.0
                   Downloading requests_html-0.10.0-py3-none-any.whl (13 kB)
             Requirement already satisfied: regex!=2019.02.19,!=2021.8.27 in /usr/local/lib/python3.8/dist-packages (from the control of th
             Requirement already satisfied: pytz in /usr/local/lib/python3.8/dist-packages (from dateparser<2.0.0,>=1.0
             Requirement already satisfied: python-dateutil in /usr/local/lib/python3.8/dist-packages (from dateparser<:
```

Data scraping tool: Get cookies.txt. After adding the application to chrome, start getting cookies on facebook to get the txt file.



Page used to scratch posts:

Company data used for main analysis: McDonald



Page of rival companies: KFC Vietnam, Burger King Vietnam.





II. Introduction to data and data analytics McDonald.

Includes 796 rows x 21 columns (data is scraped out with 52 columns but only 21 columns are used for analysis)

The data was taken between 2020-11-05 14:00:02 to 2022-12-19 04:20:06.

Below is a summary of the variables required for data analysis:

	Attribution	Type Data	Description
1	post_id	numeric	the post's ID address
2	post_text	nominal	the description of the article
3	time	datetime	the time the article was posted
4	images	nominal	The link of the article has an image

5	image_id	numeric	the image's ID address
6	video	nominal	The link of the article has an video
7	comments_full	nominal	include the comment's ID, and the comment's content.
8	reactions	nominal	including emotional types of interaction in the form of words
9	reactors	nominal	all information of a comment including: FB ID, FB name and comment content
10	type_post	nominal	Post type classification: image, video, text
11	comments	numeric	total comments
12	image_description	nominal	Description of the image e.g. can be a text image
13	reaction_count	numeric	total reactions
14	like	numeric	total likes

15	sad	numeric	totals sads
16	haha	numeric	total hahas
17	wow	numeric	total wows
18	love	numeric	total love
19	thuong thuong	numeric	total Thuong thuong
20	angry	numeric	total angry
21	shares	numeric	total shares

The first 5 lines of the MCdonald dataset: raw data

post_id		text	post_	text :	shared_text	origina	l_text	time	timest	amp	image	image_low	wquality
0 5488063964649144	NẾU ĐỘI ARGENTINA Đ MÀO\nTHÌ Mơ	à KHƠI	NẾU ĐỘI TU ARGENTINA ĐÃ K MÀO\nTHÌ McDO	(HO'I	NaN		NaN	2022-12- 19 04:20:06	1671423	606 https://sco 2.xx.fbcdn.net/	ntent-dfw5- /v/t39.308	https://sconte 2.xx.fbcdn.net/v/t	
1 5477090475746493	McDONALI	UẬN 7,	BELLO THE GR QUẬ McDONALD'S ĐÂY!	N 7, TÓI	NaN		NaN	2022-12- 16 14:00:02	1671199	202 https://sco 2.xx.fbcdn.net/	ntent-dfw5- v/t39.308	https://sconte 2.xx.fbcdn.net/v/t	
2 5477041329084741	[MINIGAME] NGÀY KHAI TR NHÀ MỚI M	U'O'NG	[MINIGAME] Đ NGÀY KHAI TRƯC NHÀ MỚI McDO	D'NG	NaN		NaN	2022-12- 15 14:00:04	1671112	804 https://sco 1.xx.fbcdn.net/	ntent-dfw5- v/t39.308	https://sconte 1.xx.fbcdn.net/v/t	
3 5476403969148477	METRO MAN MÊ McDONAL	.D'S\n\n	METRO MAN CI MÊ McDONALD'S Là fan cứi	3\n\n	NaN		NaN	2022-12- 15 05:00:19	1671080	419 https://sco 2.xx.fbcdn.net/	ntent-dfw5- /v/t39.308	https://sconte 2.xx.fbcdn.net/v/f	
4 5474038072718400	[#HappyMea GIÁNG SIN CHO CÁC Mo	H SÓM	[#HappyMeal] GIÁNG SINH S CHO CÁC McFAI	ΘÓΜ	NaN		NaN	2022-12- 14 14:00:39	1671026	https://sco 1.xx.fbcdn.net/	ntent-dfw5- /v/t39.308	https://sconte 1.xx.fbcdn.net/v/f	
images	rea	ctions	reaction count	with	n	age id	sharers	ima	ge id	image ids	was live	fetched time	header
['https://scontent-dfw5- 2.xx.fbcdn.net/v/t39.3	{'thi 'yêu th	ich': 74, ich': 11, ha': 12}	97		•	-	NaN			'5488063604649180']	False	2022-12-19 08:32:07.956	NaN
['https://scontent-dfw5- 2.xx.fbcdn.net/v/t39.3	'yêu thi	ich': 73, ich': 16, ithương ương'	91	NaN	402822549	840003	NaN		NaN	0	False	2022-12-19 08:32:11.532	NaN
['https://scontent-dfw5- 1.xx.fbcdn.net/v/t39.3	'yểu thi	:h': 237, ich': 10, n nộ': 1}	248	NaN	402822549	840003	NaN	5.47703	9e+15 [ˈ	'5477039239084950']	False	2022-12-19 08:32:18.094	NaN
['https://scontent-dfw5- 2.xx.fbcdn.net/v/t39.3	'yêu tl 'h	ich': 58, hich': 7, aha': 1, 'phẫn	67	NaN	402822549	840003	NaN	5.47640	4e+15 [ˈ	'5476403925815148']	False	2022-12-19 08:32:26.531	NaN
['https://scontent-dfw5- 1.xx.fbcdn.net/v/t39.3	'yêı	': 2570, u thích': , 'haha':	2982	NaN	402822549	840003	NaN	5 47403	8 <u>o</u> ±15 ['5474038042718403']	False	2022-12-19 08:32:31.102	NaN

Use code: info() to get information about each variable, which variables are quantitative and qualitative variables.

raw data:

```
RangeIndex: 796 entries, 0 to 795
Data columns (total 52 columns):
  # Column
                                                                               Non-Null Count Dtype
                                                                               796 non-null int64
 0 post_id
          text
                                                                              791 non-null object
  2
          shared_text
          post_text
                                                                             786 non-null object
                                                                               6 non-null object
0 non-null float64
          shared_text
original_text
                                                                               0 non-null
                                                                             796 non-null datetime64[ns]
          timestamp
                                                                             796 non-null int64
  6
         image //44 Non-null 796 non-null 796 non-null
                                                                                                                   object
                                                                                                                   object
  2
 10 images_description 796 non-null object 11 images_lowquality 796 non-null object
  12 images_lowquality_description 796 non-null
                                                                                                                  object
 12 images_lowquality_description 796 non-null video 45 non-null 45 non-null 15 video_duration_seconds 0 non-null 16 video_id 45 non-null 17 video_quality 0 non-null 18 video_size_MB 0 non-null 19 video_thumbnail 45 non-null 20 video_watches 0 non-null 21 video_width 0 non-null 22 likes 5 non-null 25 non-null 27 video_width 5 non-null 28 video_width 5 non-null 29 likes 5 non-null 5 non-null 5
                                                                                                                   float64
                                                                                                                   float64
                                                                                                                   float64
                                                                                                                  float64
                                                                                                                   float64
                                                                                                                   object
                                                                                                                  float64
                                                                                                                  float64
  22 likes
                                                                               5 non-null
                                                                                                                   float64
                                                                              796 non-null int64
  23 comments
 25 post_url
26 link
27 links
28 user_id
                                                                             796 non-null int64
                                                                             796 non-null object
                                                                               601 non-null
                                                                                                                   object

        26
        link
        601 non-null
        object

        27
        links
        796 non-null
        object

        28
        user_id
        796 non-null
        int64

        29
        username
        796 non-null
        object

        30
        user_url
        796 non-null
        object

        31
        is_live
        796 non-null
        bool

        32
        factcheck
        0 non-null
        float64

        33
        shared_post_id
        1 non-null
        datetim

        34
        shared_user_id
        1 non-null
        object

        35
        shared_username
        1 non-null
        object

        36
        shared_username
        1 non-null
        object

        37
        shared_username
        1 non-null
        object

        38
        available
        796 non-null
        object

        39
        comments_full
        796 non-null
        object

        40
        reactors
        791 non-null
        object

        41
        w3_fb_url
        796 non-null
        object

        42
        reaction_count
        796 non-null
        object
    </
                                                                               796 non-null
                                                                                                                   obiect
                                                                                                                  float64
                                                                                                                   datetime64[ns]
                                                                                                                  float64
  46
          sharers
                                                                               0 non-null
                                                                                                                   float64
                                                                           654 non-null float64
  47 image_id
  48 image_ids
                                                                              796 non-null object
                                                                               796 non-null bool
791 non-null datet
  49 was_live
                                                                                                                 datetime64[ns]
  50 fetched_time
  51 header
                                                                                 9 non-null
                                                                                                                   obiect
dtypes: bool(3), datetime64[ns](3), float64(14), int64(7), object(25)
```

In 52 variables, there are many variables that are in the null state, because there are posts that do not have shares, or are not posts about videos.

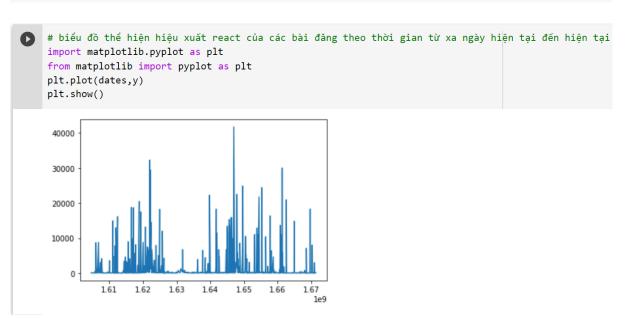
Information for a post:

Get the user's comments too, convert each new post from the list into a dataframe

After successful crawl data continue to save data in .xlsx and .npy

```
path=FOLDER_PATH + FANPAGE_LINK + ".xlsx"
post_df_full.to_excel(FOLDER_PATH + FANPAGE_LINK + ".xlsx", index=False)
print(path)
```

```
path1=FOLDER_PATH + FANPAGE_LINK + ".npy"
np.save(path1, arr)
print(path1)
```



Here we can notice that, after crawling the data, the total number of reacts scraped will take

reactions {'thích': 74, 'yêu thích': 11, 'haha': 12} {'thích': 73, 'yêu thích': 16, 'thương thương'... {'thích': 237, 'yêu thích': 10, 'phẫn nộ': 1} {'thích': 58, 'yêu thích': 7, 'haha': 1, 'phẫn... {'thích': 2570, 'yêu thích': 352, 'haha': 12, the form of a summary of the post's react states, including: like, sad,...

so to be able to analyze, it is imperative to conduct the split command:

```
[15] #convert string to dict
     import ast
     def check_react(react, i):
             r = ast.literal_eval(post_df_full1['reactions'][i])[react]
         except:
            r = 0
         return r
     post df full with reactions = pd.DataFrame()
     for i in range(len(post_df_full1)):
         post_df_full_with_reactions = post_df_full_with_reactions.append([{
                     'post_text': post_df_full1['post_text'][i], 'time': post_df_full1['time'][i],
                     'thich':check_react('thich', i),
                     'yêu thích':check_react('yêu thích', i),
                     'haha':check_react('haha', i),
                     'wow': check_react('wow', i),
                     'buồn':check_react('buồn', i),
                     'phẫn nộ':check_react('phẫn nộ', i),
                     'thương thương':check_react('thương thương', i),
                     'shares':post_df_full1['shares'][i],
                     'comments':post_df_full1['comments'][i],
                     'reaction_count':post_df_full1['reaction_count'][i]
         }])
```

The following variables are split and NaN encoded:



Variables after being separated from reactions are all quantitative variables.

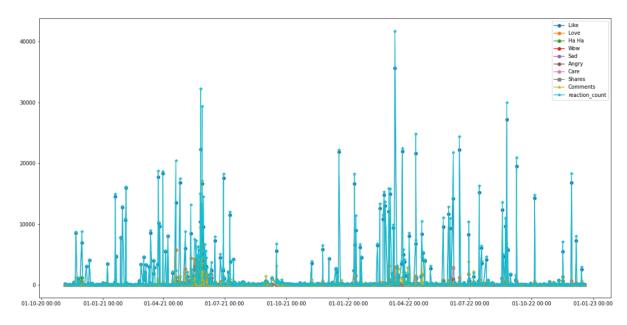
C. Data analysis and result

I. Analysis and EDA

Relative difference of emotions for shares

thích	0.399770				
yêu thích	0.734567				
haha	0.528231				
WOW	0.183471				
buồn	0.366499				
phẫn nộ	0.389263				
thương thương	0.190707				
dtype: float64					

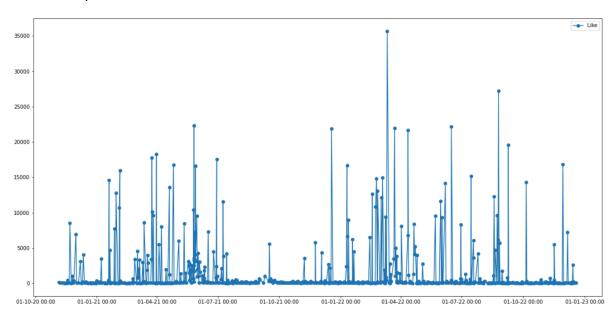
The graph shows the number of McDonald's reactions over each period: Calculated by each post in each different day.



Specific analysis of each react:

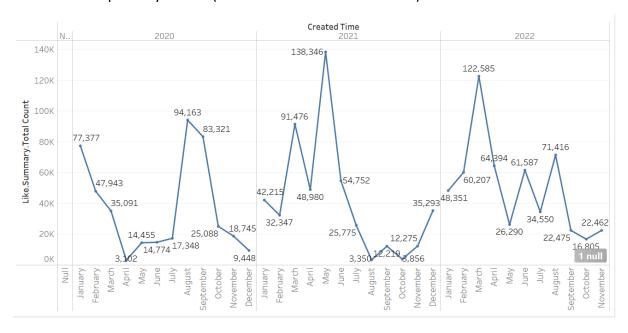
1. Likes

- Calculated by each Post:



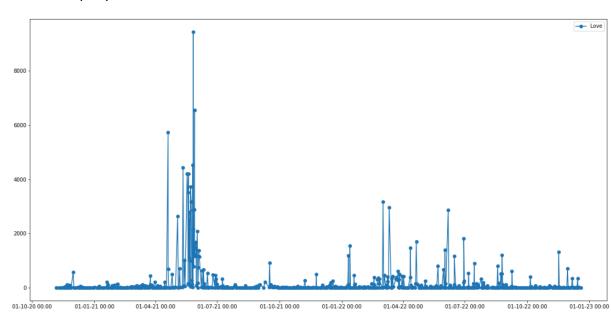
The post with the highest number of Likes is between March and April 2022. With a total of > 35,000 likes.

- Calculate total posts by month (from November 2022 onwards):

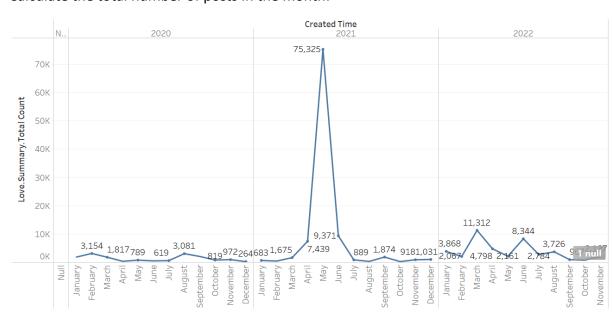


2. Love

- Calculated per post:

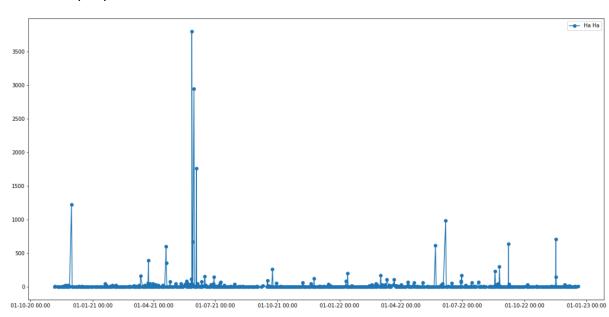


Calculate the total number of posts in the month:

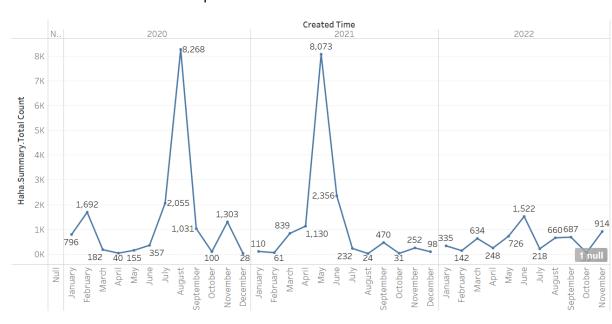


3. Haha

Calculated per post:

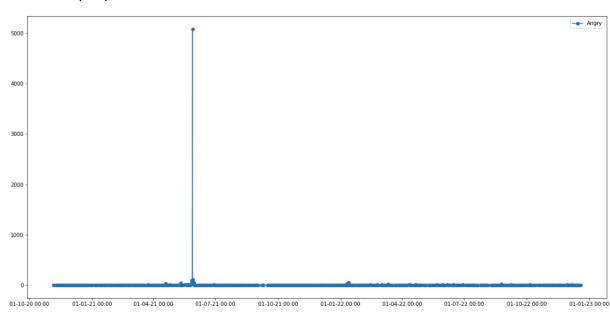


- Calculate the total number of posts in the month:

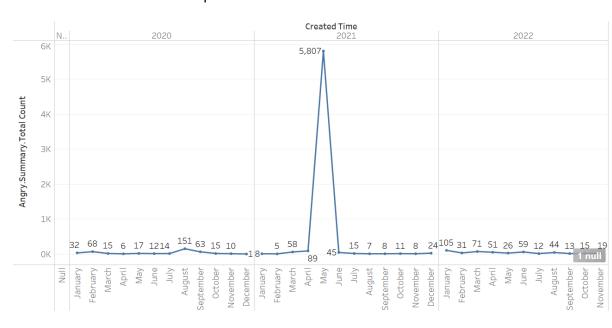


4. Angry

- Calculated per post:

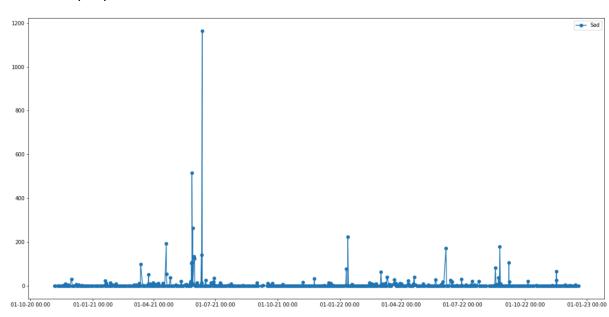


- Calculate the total number of posts in the month:

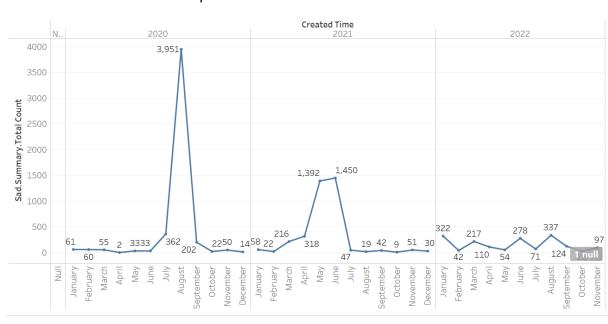


5. Sad

- Calculated per post:

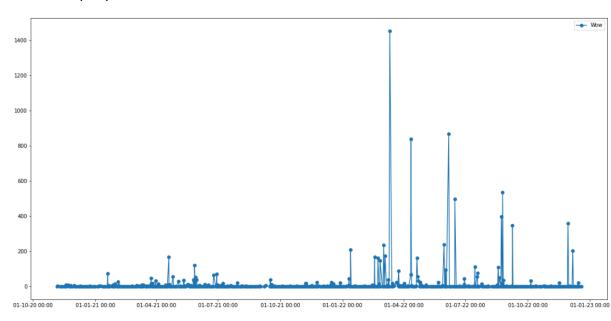


- Calculate the total number of posts in the month:

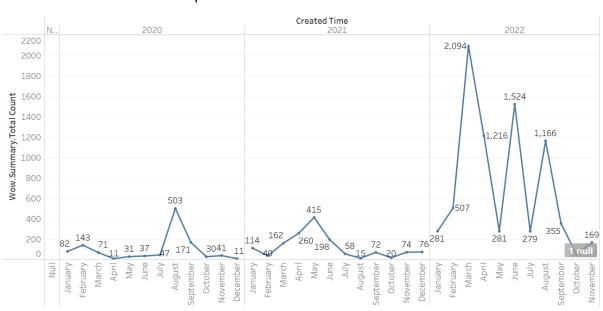


6. Wow

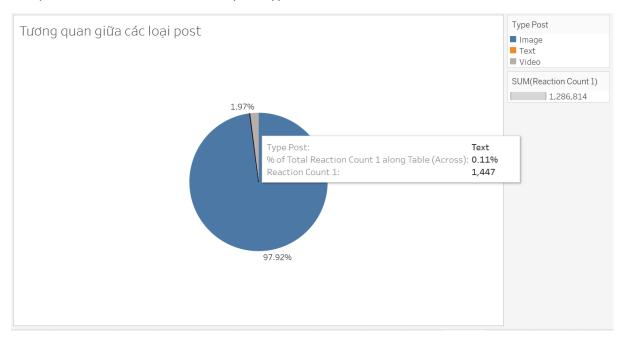
- Calculated per post:



- Calculate the total number of posts in the month:

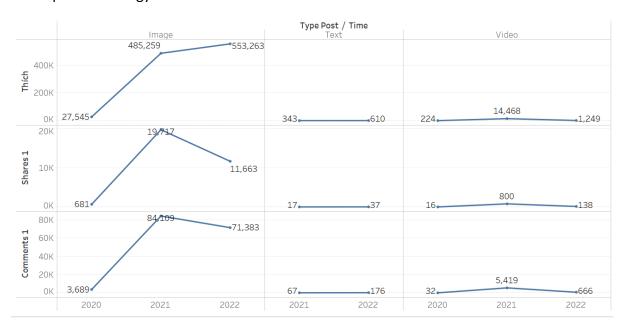


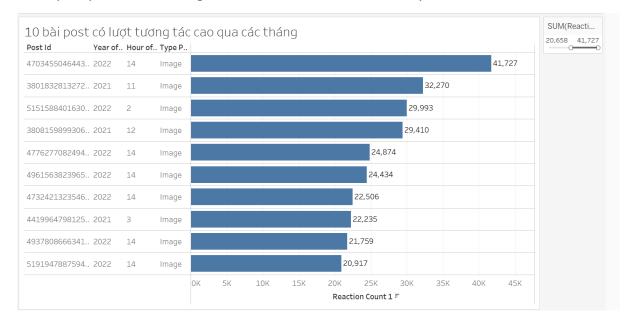
Compare the correlation between post types:



We can see a group of posts with images, which account for almost absolute audience interaction, then a group of posts with videos, and finally a group of posts with only "Text". From the above survey, we can focus on the group of posts with more images such as product images, promotional announcement images to attract customers.

Combine with time variable with type_post, share comment, to compare then suggest development strategy:





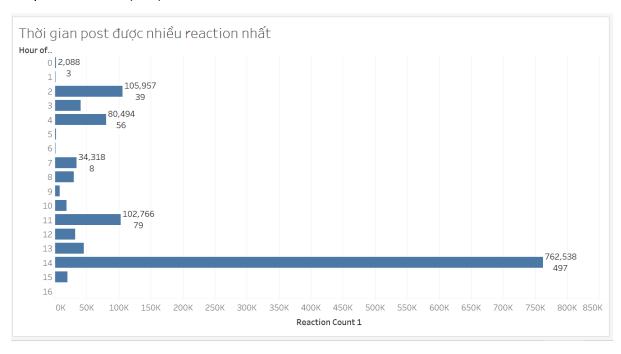
The top 10 posts with the highest interaction within the last 2 years of McDonald's:

It is worth noting that in this top 10 are all posts with "Image" attached.

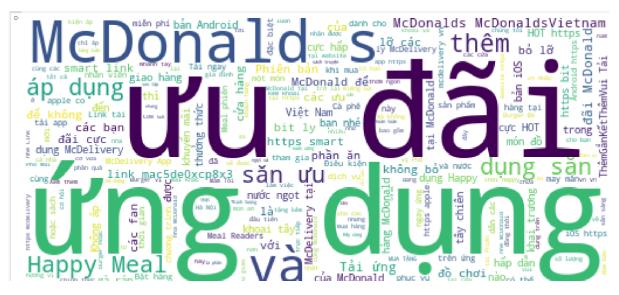
The chart below shows the time frame for posting the most reacted posts. We can see that McDonald's Vietnam often posts around 2pm because in the data chart of 796 posts, 497 posts are posted by the page in this time frame.

There is another special thing, after about 4 pm, almost no posts are posted, maybe that's the time when everyone has just finished a working day and posted on the way home, so there will be no posts. more time interacting with the page.

And if we look at the chart above, in the top 10 posts with the most interactions, 6/10 posts are posted at 2PM(14h).



Words that are used a lot to post articles:



After scraping the data, among all McDonald's posts, these are the keywords that appear the most in the posts.

Notably, "Offers" and "Apps", customers tend to buy items with many promotions and incentives, most of the posts with a lot of interaction are posts related to promotions, special offers and promotions. offers and programs that McDonald's creates to reward customers.

II. Get data by tool and compare with rival companies.

NOTE:

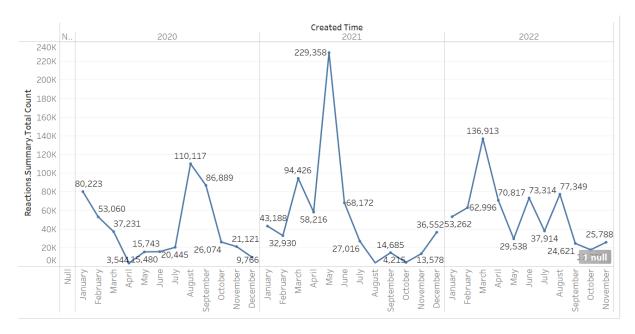
Because retrieving data by colab code cannot cover the time of 3 groups of companies, it is impossible to predict how many pages need to be scraped to get the posts published in a 2 year period.

-> To be able to compare the data of the 3 companies, we decided to crawl the data using the tool. The scratch results are the same, for McDonald data, although the scratch time is different, the difference of just a few likes does not affect the comparison results.

McDonald's:

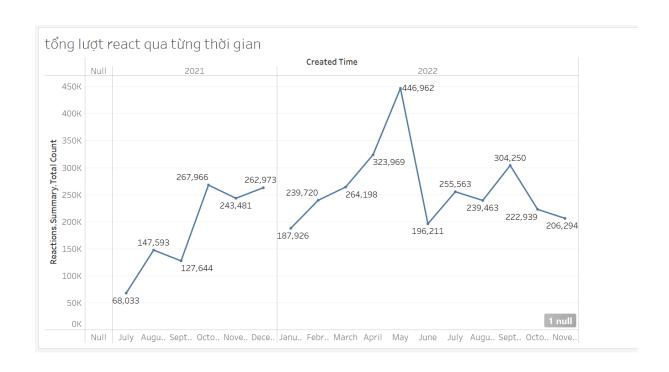
Due to the 2020 data being scratched and the period of the last months of the year, the data displayed will be less than the remaining 2 years of 2021 2022 In general, 2021 is the year the customer interactions with the page are the highest Special: in May 2021, the total reacts in all posts reached 229,315, the highest in the remaining years.

			00		Time		•			
Month of	Q1 2021	2022	Q2 2021	2022	Q3 2021	2022	2020	Q4 2021	2022	
January	46,110	53,246								
February	32,922	62,947								
March	94,399	136,961								
April			58,201	70,774						
May			229,315	29,519						
June			68,173	73,244						
July					27,006	37,901				
August					3,855	77,292				
September					14,784	24,603				
October								4,270	17,746	
November							20,755	13,636	30,283	
December							9,760	36,660	12,454	



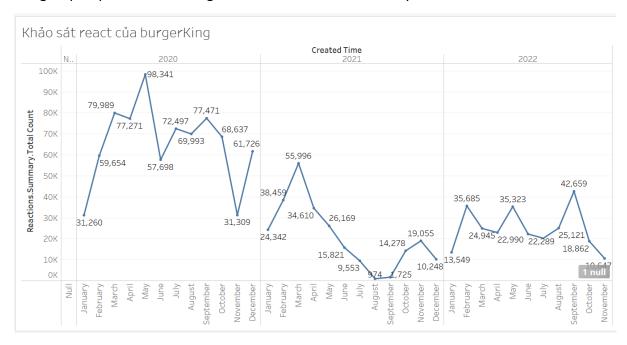
- KFC

Unlike McDonald's, the interaction of KFC is very large in general, it is quite similar, every post when it is posted also gets a lot of attention from each person. Peak is May 2022: 446,962 (total of all posts in May 2022)

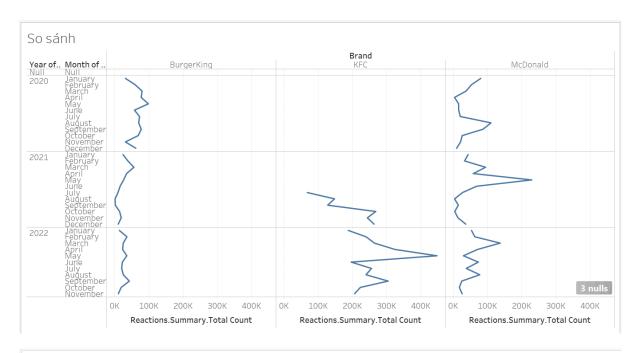


- Burger King

Burger King with a high frequency of posting, customer interaction is always at a stable level. The group of posts with the highest interaction is around May 2020.



-> Those are the individual company's overall analysis



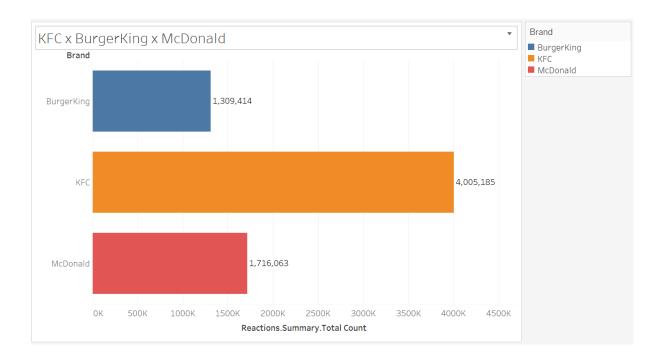
	Null 2020					Created Time 2021				2022			
Brand	Null	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
BurgerKing		170,903	233,310	219,961	161,672	118,797	76,600	12,252	43,581	74,179	80,602	88,048	29,509
KFC								343,270	774,420	691,844	967,142	799,276	429,233
McDonald		170,514	34,767	217,451	56,961	170,544	355,746	45,465	54,345	253,171	173,669	139,884	43,546

Total interactions (relative) of 3 companies between 2020 and 2022. KFC dominates interactions.

Compare total customer interactions with companies:

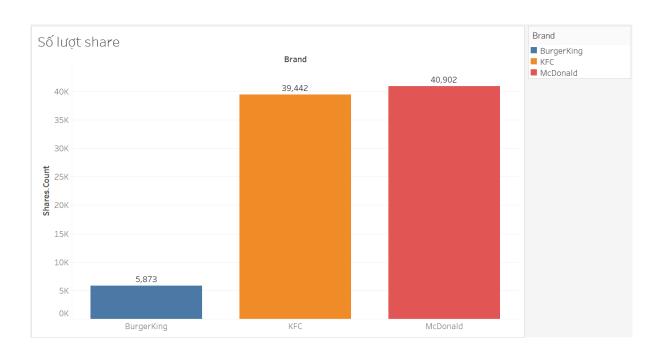
1. Reaction

Brand						
BurgerKing	1,309,414					
KFC	4,005,185					
McDonald	1,716,063					

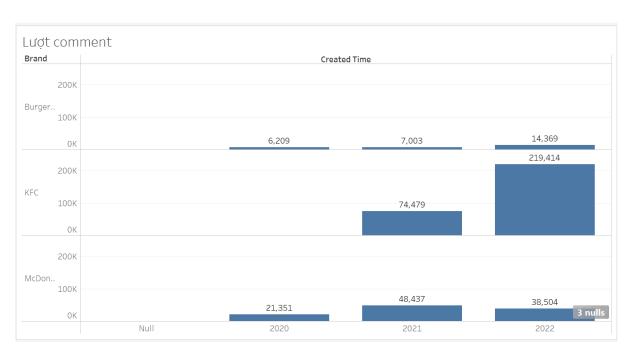


2. Shares

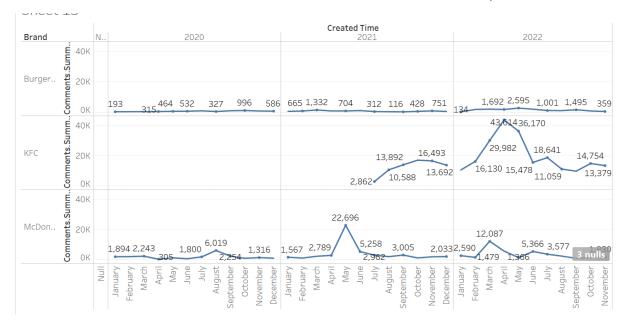
Although KFC's interaction is much higher than the other two competitors, in terms of shares, McDonald's is the company with the Page owning the most shares.



3. Comments



- The line chart shows more detail about the total number of comments in posts:



In general, placing burgerKing on the same scale with the other 2 competitors is too disparate, with the comparison of FB social channels.

-> After the above comparisons, we can see that KFC is the group with the latest posts among the remaining 2 companies, which means that in 2020 when 2 companies have 2 pages that regularly post, KFC only posted a few posts so it was when EDA was so low that it didn't even show up.

But starting in the second half of 2021, KFC began to go beyond social media for the other two companies.

-> McDonald's does not take up too much interaction with customers. but overall the company with the most stable engagement.

D. Conclusions and Recommendation

I. Conclusions

All of the above analysis shows us that the development of A over time, the correlation of the audience's interest in the company and the competitor's side, from which we can Develop strategies to develop the page and increase user interest.

- McDonald's vs KFC:

Mc-Donald's did great work in achieving this goal and it is a great accomplishment in itself because it increases consumer satisfaction and attracts more and more of them to increase market share and increase their brand value and the preference of them while selecting fast food restaurants.

KFC got a high rating in the market survey, for the Taste &

Quality of their products. If they work on this aspect, there is huge potential for them to attract consumers, just based on the taste and quality of products. This is also helped by the fact that they are known as so specialist of fried chicken, and this provides an important base for future expansion and growth.

KFC got slightly higher rating than Mc-Donald's although Mc-Donald's provide better environment overall but still people preferred KFC or Mc-Donald's which shows that people feel more relaxed at KFC while visiting.

McDonald's vs Burger King:

Compared to all aspects based on customer interaction, BurgerKing is the company with the lowest interaction.

Despite this, BurgerKing still maintains a stable level of interaction with customers, and so does McdoNald.

Both companies have a strong point of constant interaction, proving that they have a lot of loyal customers. Based on this conclusion, the company groups will come up with appropriate strategies to keep their legs, as well as attract new customer groups.

II. Recommendation

- My first recommendation is that Mc-Donald's has an extremely strong brand image, but they need to work hard on improving their consumer perception of being an expensive brand. Mc-Donald's and KFC have almost identical pricing, but the difference in product offering makes its perception changed but Mc-Donald's is still perceived as the more expensive brand.
- That's why my second recommendation for Mc-Donald's is to carry out a promotion campaign to ensure that their target market is well aware of their current low prices.
 This would help change consumer perception and turn McDonald's into an affordable brand.
- Another backlash of having such a strong traditional brand image is that consumers
 have very high expectations of the taste & quality of products. Mc-Donald's needs to
 work hard on this aspect, especially for burger products and to introduce some local
 touch to the product.
- Another recommendation is that Mc-Donald's should focus on the delivery method and the process in terms of time efficiency of serving them.
- With regard to the physical evidence associated with the brand, Mc-Donald's needs to do a lot of work if they hope to catch up with Mc-Donald's. My recommendation for Mc-Donald's is to come up with the decor at every outlet, wherever necessary advertising is taking place.
- On a smaller note: the Mc-Donald's delivery process should change, so that an order attendant delivers the food to the table. This may seem insignificant, but it can go a long way in improving consumer satisfaction.