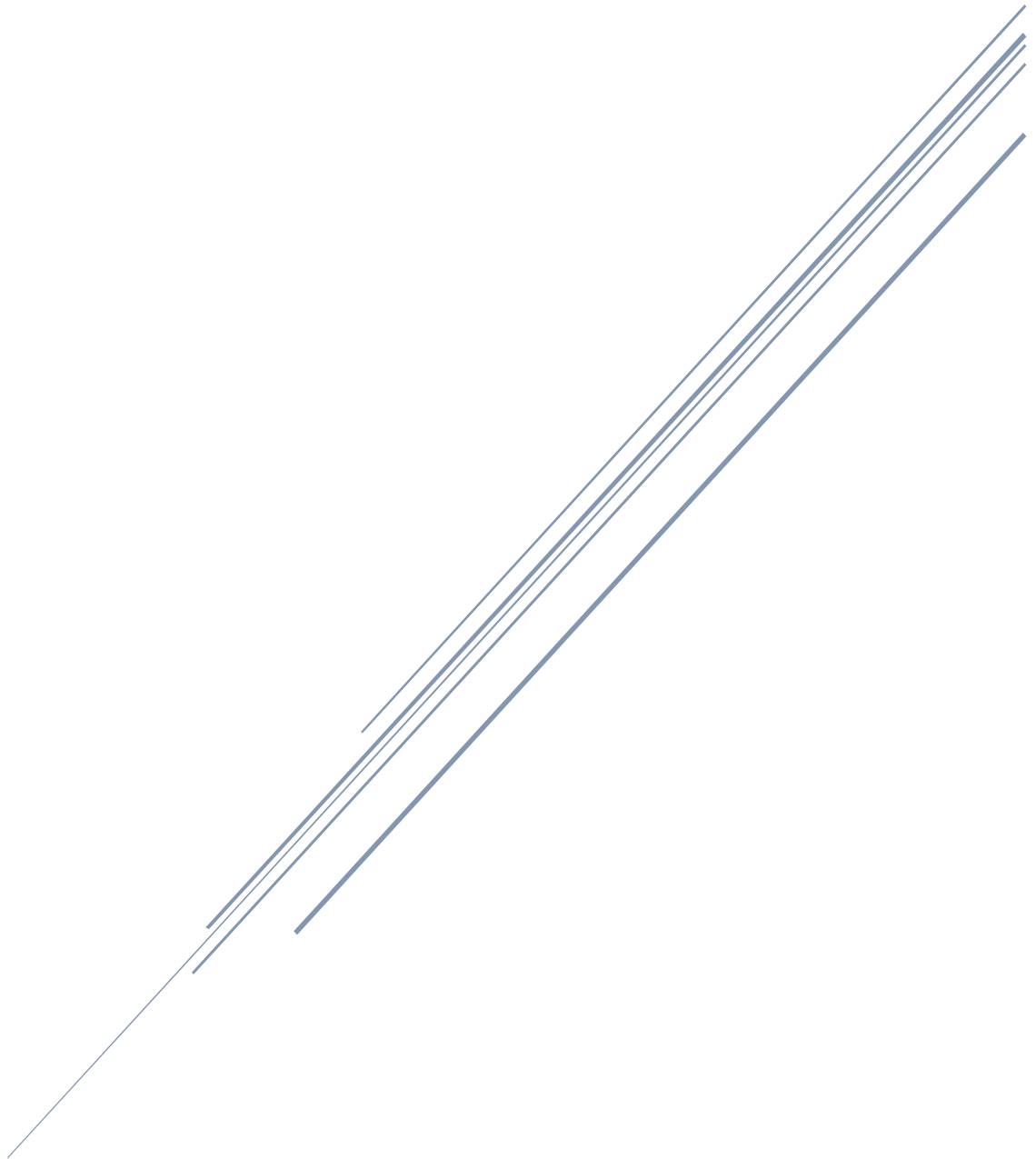


SUNDAY FOLKS

An in-depth analysis of Sunday Folks on social media



Ang Zhen Xuan	A0139569L
Ken Oung Yong Quan	A0139388M
Lim Jun Weng	A0139722A
Rhynade See	A0142897N
Tan Jin Wei	A0139100X

1 Executive Summary

In this report, we will consider the online presence of Sunday Folks, a local dessert café located along the stretch of Chip Bee Gardens, within the vicinity of Holland Village. By looking at its social media trends, we can identify and suggest strategies that could help boost their popularity on social media.

We will also conduct similar research into their competitors to identify competitive edges and shortcomings. In doing so, we hope to help Sunday Folks remain relevant in the distant future.

Lastly, in considering their current demand, we will analyse measures that can help to either better cater to existing customer requirements, or boost their demand where necessary.

Table of Contents

1	Executive Summary	1
2	Company Profile.....	3
2.1	Sunday Folks	3
2.2	Objectives	3
2.2.1	Outlet Expansion	3
2.2.2	Consumer Tastes and Preferences	3
3	Findings	4
3.1	Sunday Folks	4
3.2	Competitors	6
3.2	Sources	6
3.2.1	Instagram	6
3.2.2	Burpple	13
3.3	Customer Demographics	15
3.4	Sentiments.....	16
3.4.1	Flavours	16
3.4.2	Negative Reviews	21
4	Industry Analysis	25
4.1	Industry Overview	25
4.1	Demand for novelty in desserts' tastes and presentation	26
4.2	Increasing Costs	27
4.3	Sweet treats & healthier alternatives	27
5	Recommendations	28
5.1	Influences	28
5.2	Outlet Expansion	31
5.3	Collaboration.....	35
5.4	Introducing Novelty.....	35
6	Conclusion	36
7	Appendix.....	38
7.1	Sentiment Analysis	38
7.2	Scraping Instagram.....	40
7.3	Influencer Analysis	42
7.4	Generate Graphs for Instagram Posts	43
7.5	Scraping Burpple	44

2 Company Profile

2.1 Sunday Folks

Sunday Folks is a local cafe famed for their specialty desserts. It opened its doors in July 2014 at Chip Bee Gardens, taking our nation by storm with its irresistibly delicious sweets. As part of a three-partner team's expansion of their flagship ice cream cafe, Creamier, Sunday Folks is famed for their aesthetically pleasing desserts and sweet treats.

The focus of Sunday Folks is directed towards their soft serve ice cream and waffles. Although there may only be six ice cream flavours to choose from – Dark Chocolate, Earl Grey Lavender, Roasted Pistachio, Sea Salt Gula Melaka, Madagascar Vanilla and Summer Strawberries, they do not suffer from a lack of customers. Said flavours of ice cream can be served on its own in a cup, or with waffles. The folks at Sunday Folks aim to present their desserts in the freshest form, and this vision has emerged to be a winning recipe.

2.2 Objectives

2.2.1 Outlet Expansion

Studies have shown that 71% of Singaporeans would choose to dine at another restaurant if there is a noticeable queue that is longer than 10 people (SkipQue, n.d.).

Regarding managing crowds for Sunday Folks, a queue system has been installed to alert customers when their table is ready. Even though customer flow management is improved through this practice, Sunday Folks is still suffering from the long waiting time caused by their huge number of patrons, especially during peak hours. The difficulty in catering for their growing demand of customers is compounded by their limited shop capacity. Our team would like to help Sunday Folks consider a probable outlet expansion to cater to their rising demand, delving deeper into consumer sentiments, as well as the consideration of potential locations for expansion in Singapore.

2.2.2 Consumer Tastes and Preferences

Consumer tastes change over time, and to remain competitive and relevant, Sunday Folks needs to be able to keep up with trends. To do this, Sunday Folks has periodically introduced new flavours, the newest being their Hazelnut Milk Chocolate flavoured ice cream. To help Sunday Folks better

understand their customer tastes and preferences, we will also be analysing the popularity of different flavours for their competitors.

3 Findings

3.1 Sunday Folks

Sunday Folks manages its social media presence through an official Facebook and Instagram handle. They maintain a rather low profile on both platforms, with only a few posts per month on Facebook, up to a peak of 9 posts in one month.

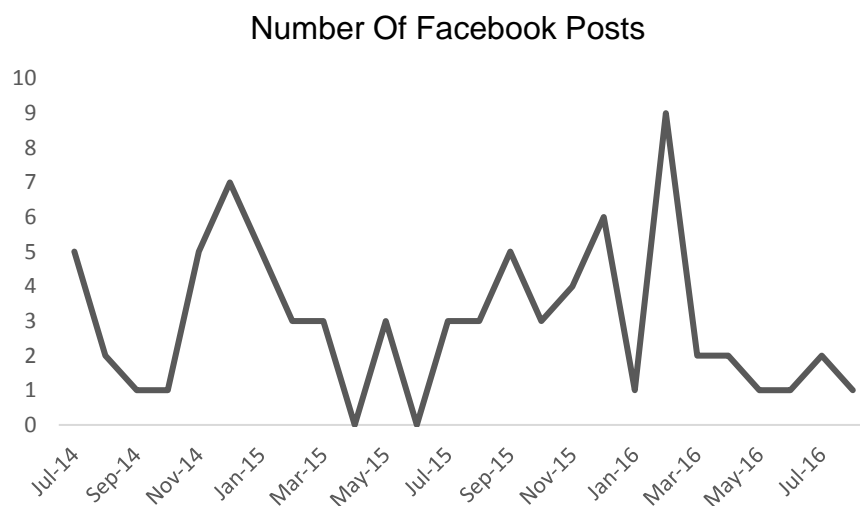


Figure 1 Sunday Folks Facebook posts per month

When we compare the frequency of posts by Sunday Folks to their competitors, the difference in the number of posts becomes more apparent – Sunday Folks’ key competitors all have maintain a significantly more active social media account than Sunday Folks, as shown in figure 2 below.

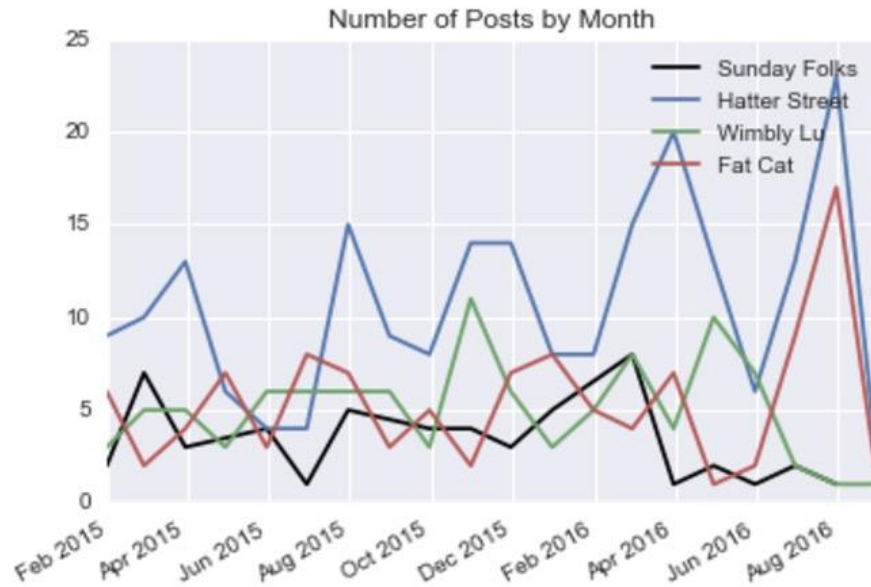


Figure 2 Competitors Facebook posts per month



Figure 3 Competitors Instagram posts per month

The Instagram comparisons also show a similar trend. While Sunday Folks also has an Instagram account, their presence online is a lot lower than that of their competitors, as shown by the significantly lower number of posts per month made by the official Sunday Folks twitter account. Hence, more so than any other cafe, Sunday Folks relies on its customers' social media presence to drive sales. Since the sentiments in their customer's posts are more likely to affect public perception, and subsequently sales, we attempt to find out consumers' opinions of their desserts on social media platforms by scraping reviews from various social media platforms, as well as Burpple, a well-known food review site in Singapore.

3.2 Competitors

We identified three main competitors for Sunday Folks, namely Wimbley Lu, FatCat, and Hatter Street, all popular dessert cafes in Singapore that serve similar ice cream and waffles combinations. Hence, for our analysis, we will be comparing the data we have found between the four cafes, to identify Sunday Folks' advantages over their competitors and shortcomings against them.

3.2 Sources

For our analysis, we reviewed through the location tagged posts on Instagram, as well as food reviews on Burpple.

3.2.1 Instagram

Sunday Folks has enjoyed a significant presence on Instagram since its opening. The following chart shows the number of posts with the location tagged at Sunday Folks per month.

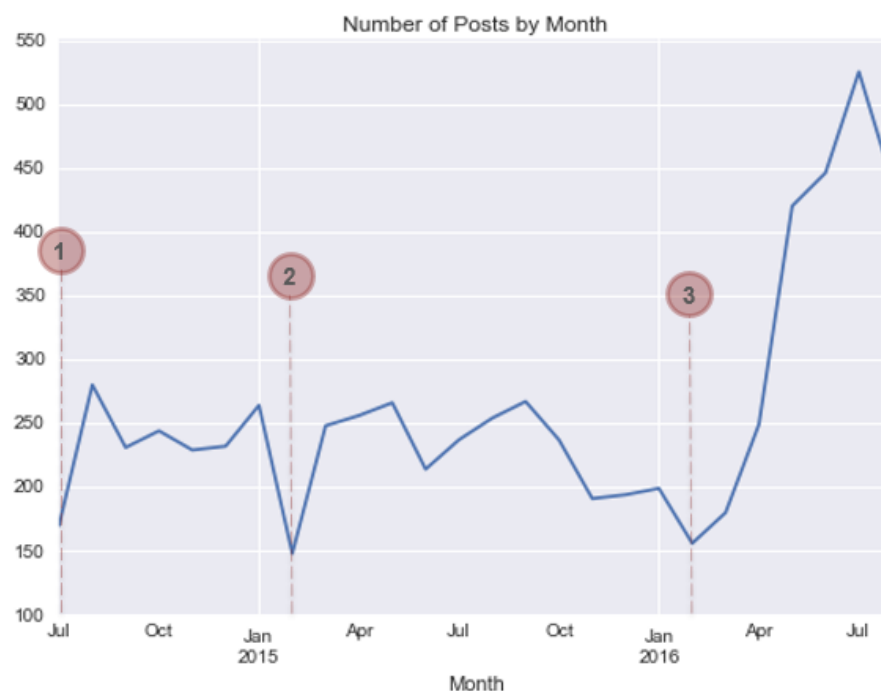


Figure 4 Location tagged posts at Sunday Folks

There are 3 distinctly observable downward spikes in the trend, which can be attributed to festive periods, where Sunday Folks will close for a period. Since Sunday Folks opened in the middle of July 2016, there low number of posts for that period is expected. Dips (2) and (3) were during the respective years' Chinese New Year period, where Sunday Folks closed for a week:



Figure 5 CNY

Thus, except for the spike in Instagram posts near the end, the online Instagram following for Sunday Folks has remained rather constant over the years, with the fluctuations accounted for.

Accounting for the upward spike in posts in 2016, this could relate to the recent promotional efforts by Sunday Folks. Chart 2 shows the maximum number of likes gained by a post per week, and we can see certain spikes, normally attributed to when an influential social media user uploads an image.

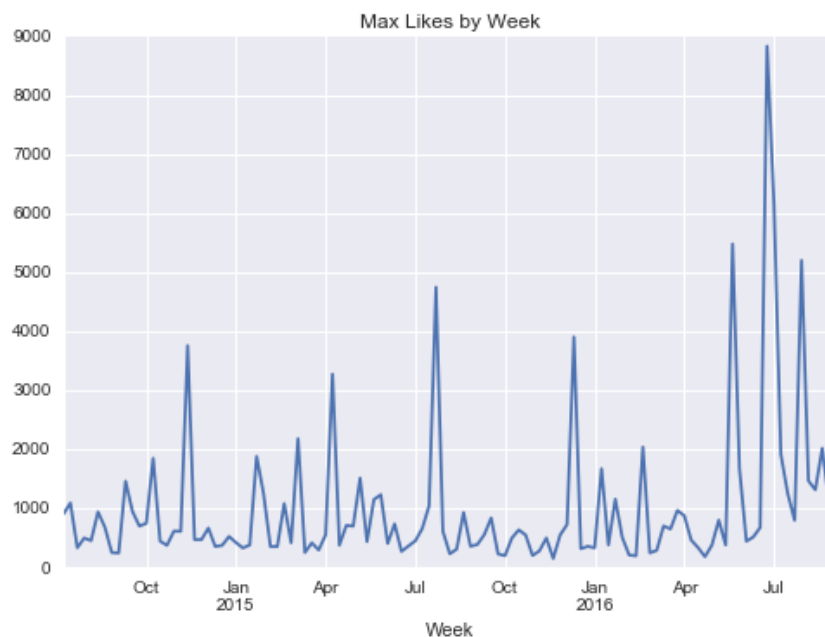


Figure 6 Maximum number of likes per post by week

The higher concentration of spikes after May 2016 is partly due to increased publicity of Sunday Folks, as well as their collaboration with influential social media users for promotion. The highest spike was in July 2016 was caused by Nadya Hutagalung, an influential Instagram user with over 500 thousand followers, and a regional ambassador for Dulux's #MyAmbiance campaign.



Figure 7 Most significant post - Nadya Hutagalung

Sunday Folks was also part of this #MyAmbiance promotional campaign, which could help explain the increase in posts in the latter half of 2016, where there was a competition going on for the campaign. Users were required to include a #Backdrop and #MyAmbiance hashtag on their Instagram post to stand a chance to win free treats from Sunday Folks. However, the competition did not help to generate much online presence for Sunday Folks – filtering through the hashtags revealed only 31 posts with the two tags.



Figure 8 Sunday Folks promotional post - 23 Jun 2016

Part of this can be attributed to the fact that the promotions were not widely publicized by Sunday Folks – in fact, Sunday Folks only offered a promotion for four days out of the entire competition period of one month.

To explain the trends that resulted in the spike, we perform term selection with chi-square to identify the most relevant terms from the dataset relating to the relevant spike. The spikes' origin was

determined to be in May, and by splitting the data into two sets, each containing the data from before and after the spikes respectively. Next, to identify the relevant terms in distinguishing pre-spike and post-spike posts, we found the chi-squared values, as shown below.

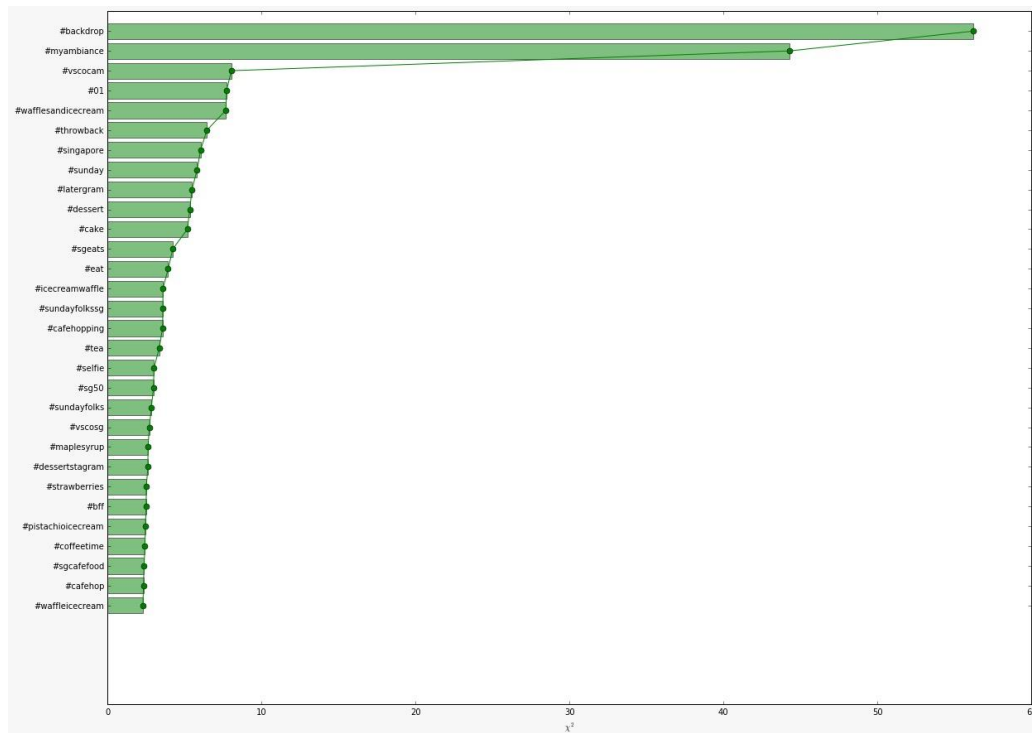


Figure 9 Chi-Squared values for term selection

Figure 9 shows the top 25 chi-squared values for the terms in both documents. The high chi-squared values of the tags #myambience, #myambience and #backdrop, all tags involved with Dulux's competition, suggest that they were significantly relevant in the post-spike dataset. Although the actual number of posts related to these two tags were very little, the competition was still significant in influencing the improved online presence of Sunday Folks by causing an increase in the number of trending posts.

To check if the increase in Instagram posts is a common trend within the dessert café industry, we look at similar data for Sunday Folks competitors, as identified earlier.

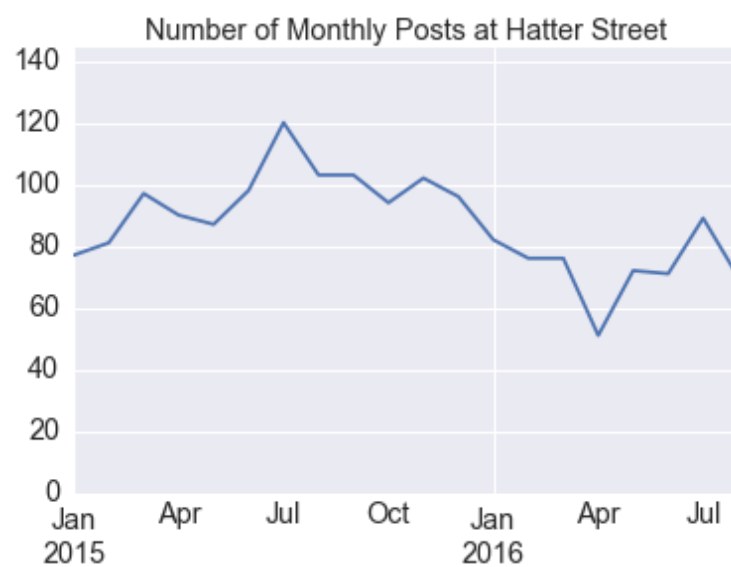
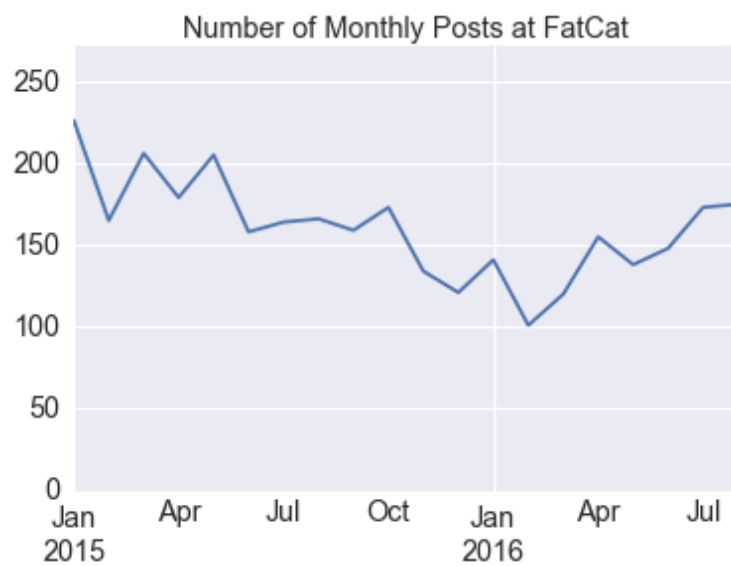
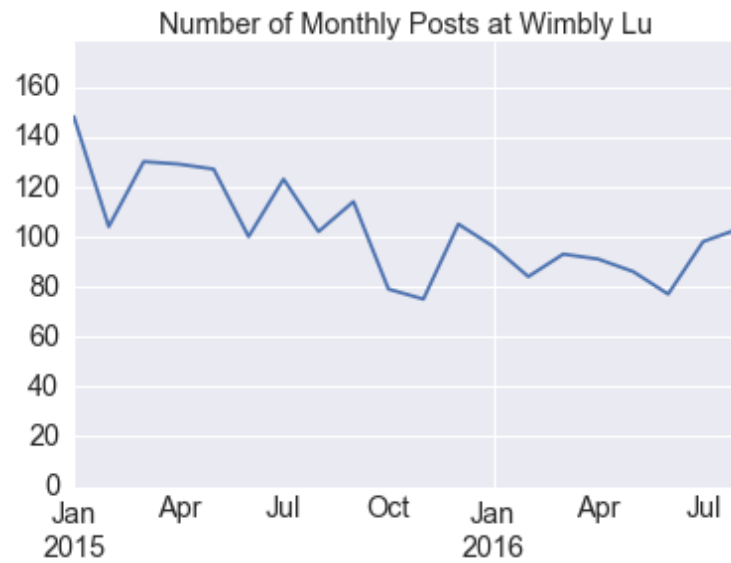


Figure 10 Competitors location tagged posts by month

In comparison, the number of Instagram posts weekly on Sunday Folks' competitors has been largely constant, without the pronounced spike at the end of the chart. Additionally, Sunday Folks appears to be significantly popular compared to its competitors – the average number of Instagram posts tagged at Sunday Folks was consistently higher than its competitors. While this could be due to the ongoing trend of 'instagrammable food' (Section 5), it also shows that Sunday Folks is more popular than its competitors, and has a larger online presence, making up for the fact that Sunday Folks themselves are not particularly active on social media. It also shows that the increase of posts is due to a spike in popularity of Sunday Folks, and not a trend extrapolatable to the popularity of Instagram itself.

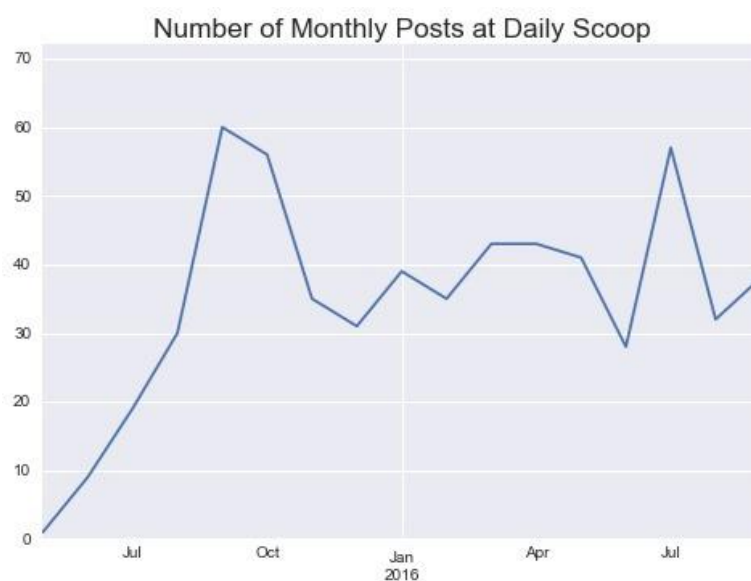


Figure 11 Daily Scoop monthly posts

The Daily Scoop, while not identified as a direct competitor, since they are not known for their waffles and soft serve ice cream, is the closest analogy to Sunday Folks within Holland Village. While the Daily Scoop also enjoyed a significant spike in Instagram posts in July, the rest of the period from May to August was normal, and consistent with the previous few months. Hence, the spike in Sunday Folks Instagram posts is also likely not directly related to an increase in popularity in the localized area around Holland Village.

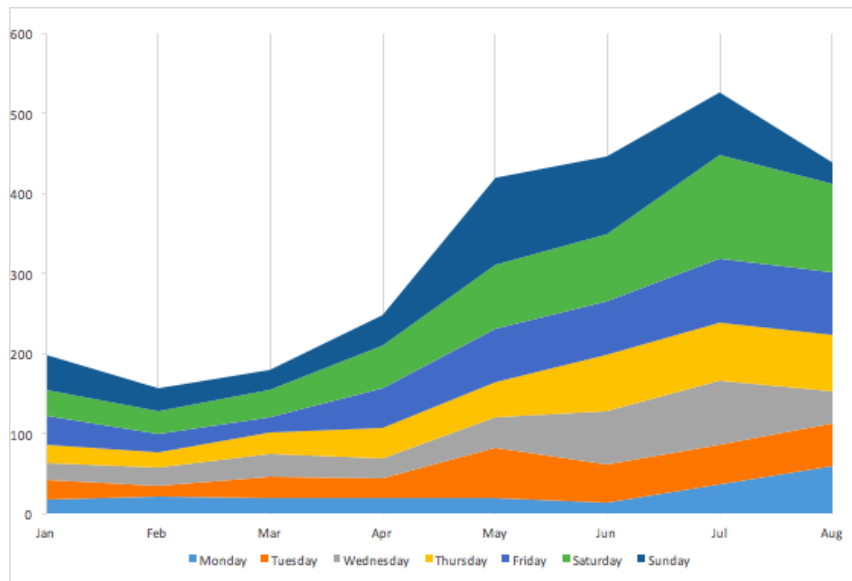


Figure 12 Posts by day of week

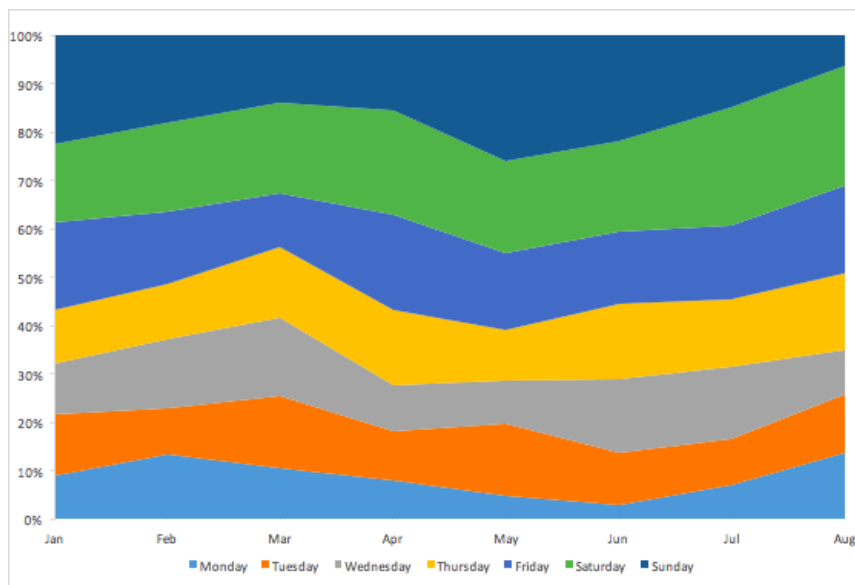


Figure 13 Percentage of posts by day of week

Figures 12 and 13 shows the total number of posts for each day of the week per month. More importantly, from Figure 13, there is no increase in the number of posts during the weekdays, proving the increase in Sunday Folks' Instagram posts is not tied to any specific weekly promotion. There was a sharp decline in the number of Sunday posts in August, which could be attributed to the #throwback and #latergram trends, where users are likely to post their Sunday Folks pictures later instead, leading to the increased Monday posts observed, even though said café is closed on Mondays.

3.2.2 Burpple

Burpple is a local online platform that allows people to explore food moments as well as share their experience with others. It is commonly known as the food version of Instagram.

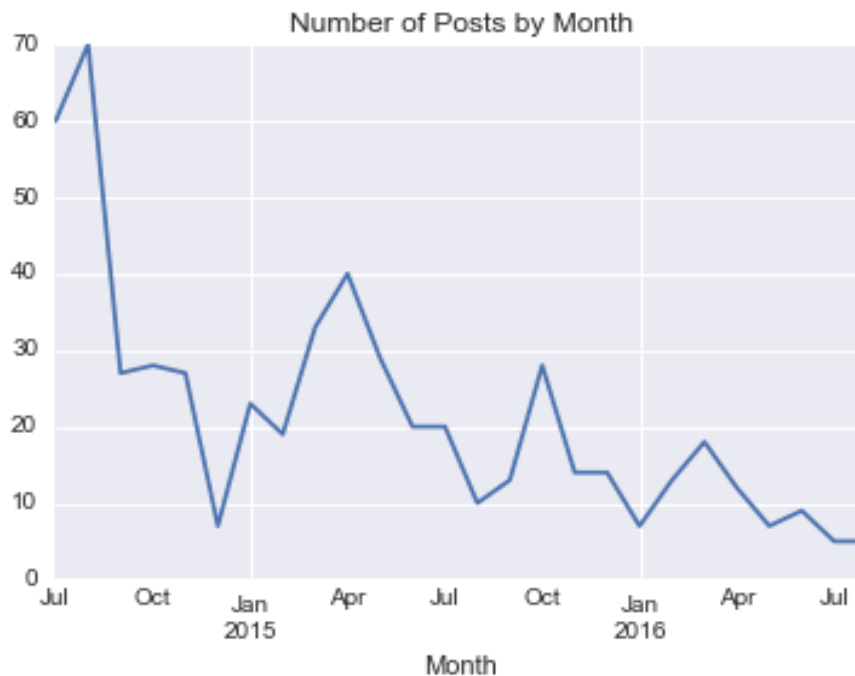
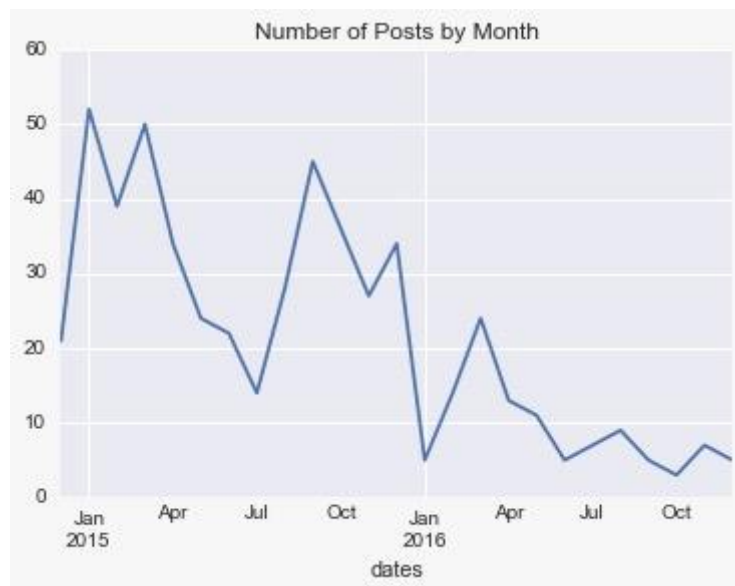
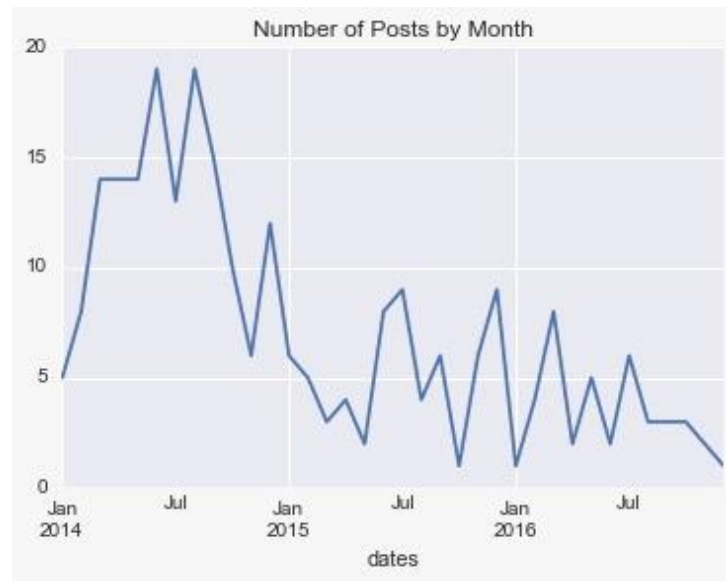


Figure 14 Sunday Folks number of posts by month - Sunday Folks

There is a significant number of reviews regarding Sunday Folks on Burpple, even though the numbers are generally decreasing. A possible explanation for the fall can be accorded to the fact that people are turning to Instagram to share their experience now since both platforms are similar in nature and the popularity of Instagram has been increasing over the years. However, Burpple remains a valuable source of information due to the reviews attached to each post. The reviews are aggregated from a variety of social platforms, including Instagram, to help provide us with a deeper insight into consumer sentiments.

A comparison with the competitors also shows that this trend is not unique to Sunday Folks itself:



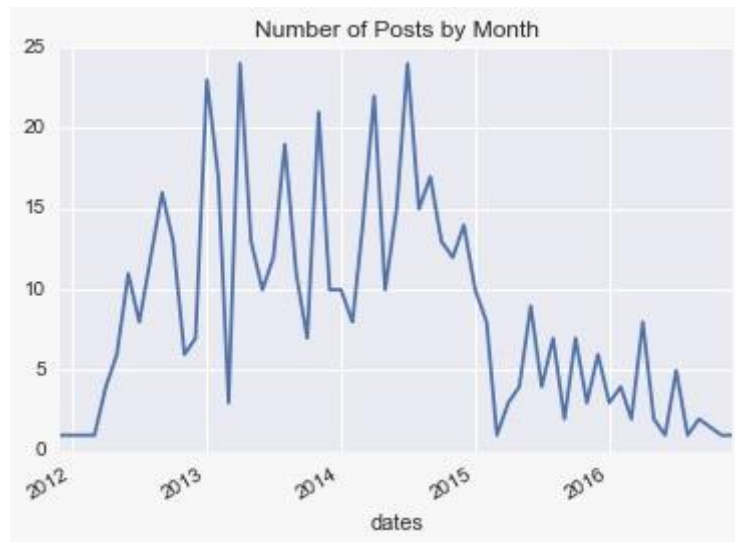
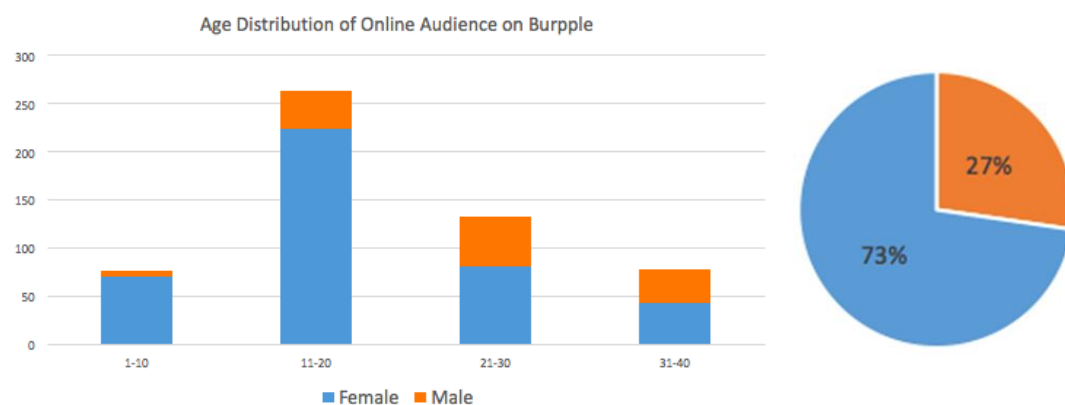


Figure 15 Burpple posts by month - Hatter Street, FatCat, Wimbly Lu

All of the competitors also show a decreasing trend in the number of posts on Burpple – showing that the platform itself, is on a decline, as far as dessert cafes are concerned.

3.3 Customer Demographics

To get a general sensing of the online audience that Sunday Folks appeal to, we data mined the profile images of customers that have posted reviews about Sunday Folks across review sites and social media platforms. Utilizing basic image recognition, we obtained the gender of the customer, as well as a general age range of those who visit Sunday Folks.



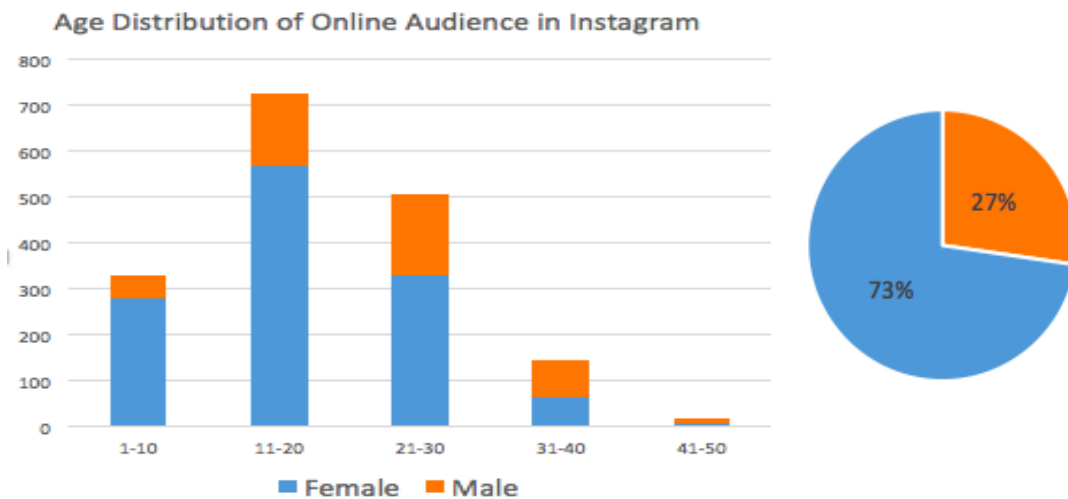


Figure 16 Age, Sex Demographics for Burrple and Instagram

The charts above show the age and gender distribution of Sunday Folks customers on Burrple and Instagram. The general online population of Sunday Folks customers consists predominantly of young adult females (age ranges from 11-30). While this is not a proper representation of their actual customer base, their online presence is still an effective measure of Sunday Folks' popularity, which may indirectly boost their sales.

Hence, in consideration of potential promotional campaigns and collaborations with other social media users, Sunday Folks should take their online demographic into account, since it may end up being different from their actual customer demographic. Collaborative efforts that appeal more to young female adults should be given a higher priority.

3.4 Sentiments

Since most of Sunday Folks' online publicity is generated by their customers, it is important to track the overall customer sentiments online.

3.4.1 Flavours

Sunday Folks is well known for their waffles with soft serve. They offer 6 unique flavours of soft serve and the more popular flavours over the two years are earl grey lavender, sea salt gula melaka and roasted pistachio. The popularity of the flavours has remained rather constant over the past two years, with earl grey lavender as the clear favourite.

With the changing taste and preferences of customers, as well as the need to offer unique flavours to continue to attract and retain customers, it is important to find out what the current popular and well liked flavours in the market are.

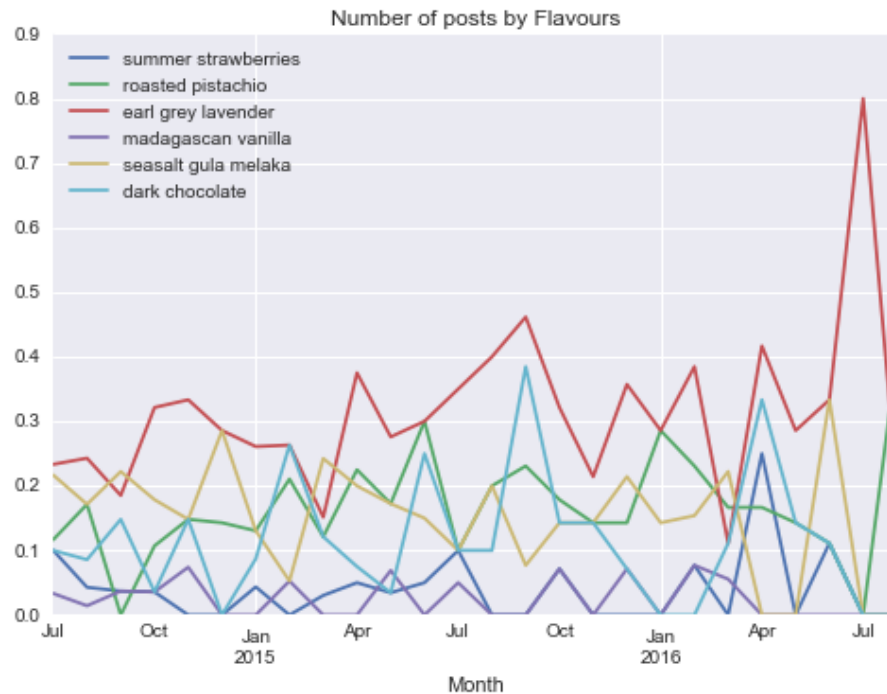


Figure 17 Percentage of posts by flavour, Burpple – Sunday Folks

The flavour trends for Sunday Folks on Burpple show that Earl Grey Lavender is one of the more popular flavours as mentioned. However, when we plot a word cloud of the reviews, we can also see that Gula Melaka is rather popular as well, although this can be attributed to the fact that Sunday Folks also serves Gula Melaka as a topping in addition to as an ice cream flavour.

This suggests that the use of flavours may not be effective for Sunday Folks, since outside of their wildly popular Earl Grey Lavender flavour, the main emphasis is not on their flavour, but their soft serve ice cream. This also shows a current gap in Sunday Folks competitive edge – with a single exception, their flavours are not as appealing as their competitors’. While their soft serve ice cream serves as a relevant edge, Sunday Folks, to further remain relevant, can consider developing and promoting additional unique flavours that appeal to their customers on top of just serving soft serve ice cream.

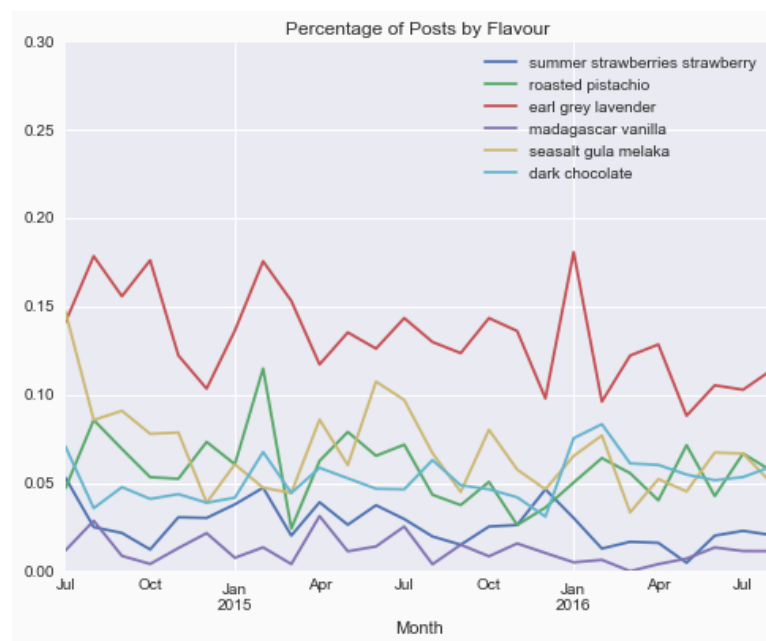


Figure 20 Percentage of flavours, Instagram - Sunday Folks

Figure 20 shows the number of mentions for each flavour on Instagram. Earl grey lavender remains a distinct crowd flavour, with sea salt gula melaka, roasted pistachio and dark chocolate behind. Earl Grey Lavender is shown by both the word cloud and the chart to be the most popular flavour. However, while Gula Melaka appears to be the second most popular flavour on Burpple, its popularity was not as obvious on Instagram. Since Burpple focuses heavily on reviews, this suggest that while Gula Melaka is a well-liked flavour, it is not as popular.

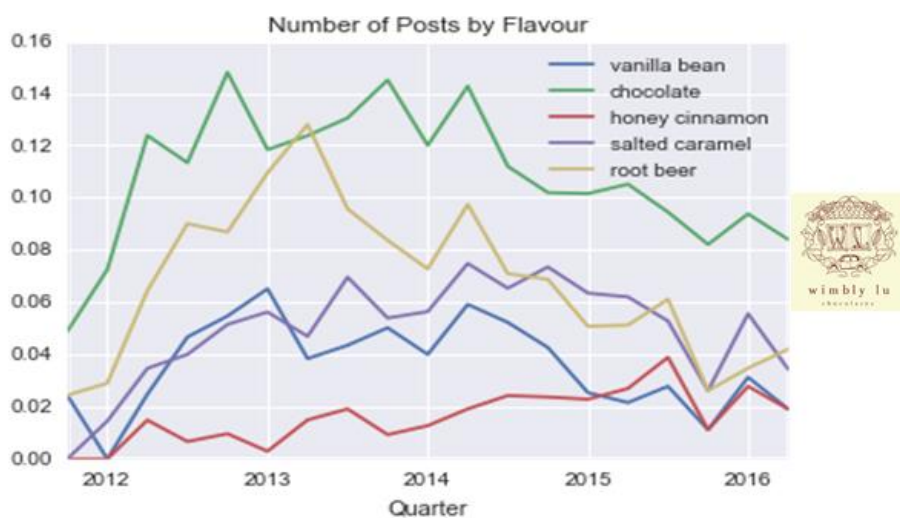
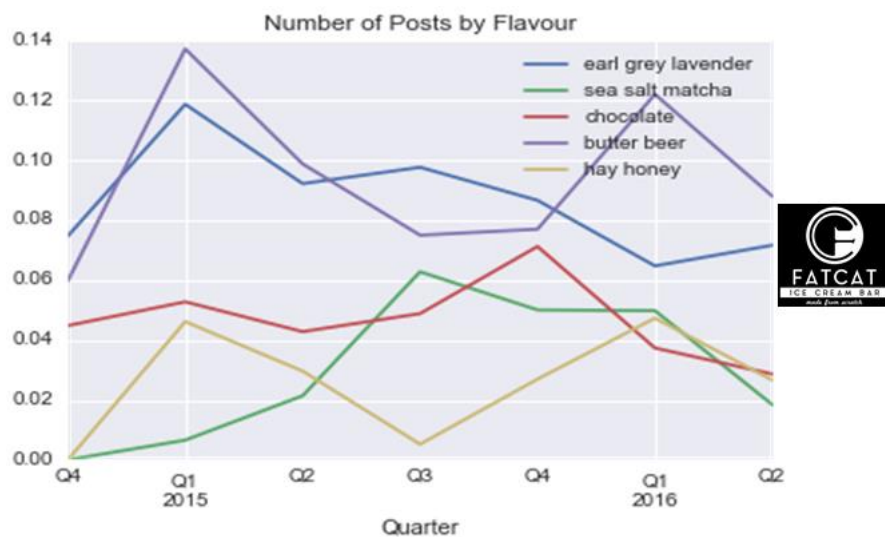
The fragrance of coconut was delightfully prominent in the soft serve, and it was **not overly salted**.

makes me fall in love even more after I taste their ice cream waffle! I chose the sea salt gula melaka ice cream and I looooooveeeee it!

I adore this beautiful flavour as every mouthful is packed with **a deep, intense floral taste**.

I'm **definitely coming back again** to try their cones and other soft serve flavours!

Next, we compare the customers sentiments on flavour for Sunday Folks' competitors.



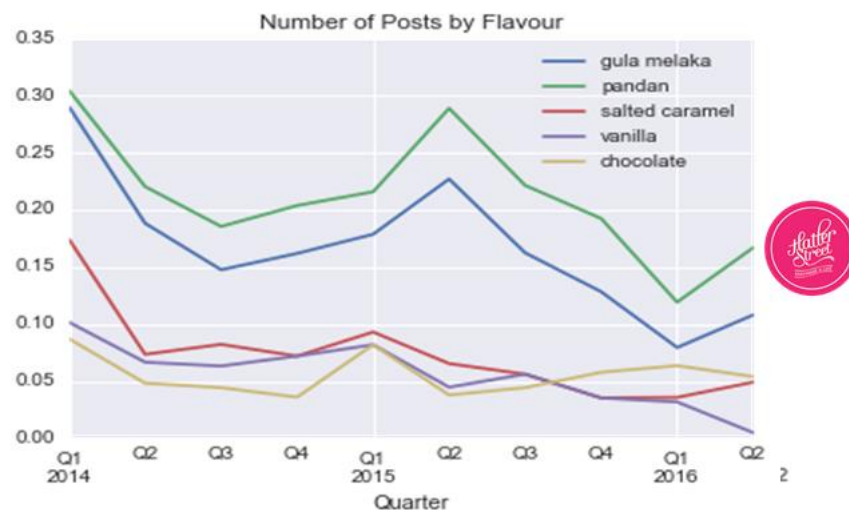


Figure 21 Competitor percentage posts by flavour, Instagram

Figure 21 show the trends for the 5 most popular flavours from competitors FatCat, Wimbley Lu and Hatter Street respectively. Chocolate remains a popular flavour across all competitors, and is a mainstay flavour in the industry – all three competitors analysed offer chocolate as a flavour, and it was consistently among the more popular flavours for each competitor.

All three competitors also show a similar flavour trend – there are 2 distinct flavours that stand out above the rest as the most popular flavours. For FatCat, Wimbley Lu and Hatter Street, they are Earl Grey Lavender/Butter Beer, Chocolate/Root Beer and Gula Melaka/Pandan respectively. One of the two flavours for each café are also unique to that café alone, at least among the competitors, suggesting that Sunday Folks should work to establish such a flavour. Currently, Sunday Folks lacks a distinct second flavour. Roasted Pistachios, as a flavour unique to Sunday Folks, is not doing as well as the unique offerings by other cafes. However, the fact that their soft serve ice cream is unique does somewhat make up for the lack of a distinct flavour, and has allowed Sunday Folks to grow without having specialized flavour to itself.

3.4.2 Negative Reviews

While the reviews scraped regarding Sunday Folks were overwhelmingly positive, there were still several negative reviews. The negative reviews cover mainly 3 areas: the long waiting time, cramped seating in the café, as well as on the quality and price of the food.

A small number of negative reviews were regarding the ice creams and waffles – mentions were given particularly the quick melting time of the soft-serve ice cream, as well as the overwhelming expectations customers had of the café.

Fluffy waffles, but the soft serve **melts pretty quickly**

Thought it was a bit **overrated**, esp at my second time here. And quite **pricey**.

The ice cream is **not so milky enough** and the cake is **too dry** for me. Didn't try the waffles though but it's too **overrated** in my opinion

Kinda **disappointed** by the soft serve being a tad tad tad many **tad too sweet**

does anyone else feel that the soft serve is **not creamy enough**?

Love the earl grey lavender ice cream but noticed recently that the ice cream shrunk in size despite them **increasing the price** recently. So will not patronize as often now

Of the reviews that mentioned queues, 69.8% complained of the long waiting times:

as usual the store was **fully packed** with people and a **queue waiting for their turn**

the queue is **pretty long** on weekends but i went on a weekday so it wasnt as bad tho it **was still pretty packed**

the waffle is crispy the ice cream is also nice but for the **queue time** like that i think **it's not worth it**

the **40min queue** was **ridiculous**

you see a **snaking queue** of people seated and **standing outside**

Additionally, 25% of reviews mentioning space complained about the confined space of the store, and that they were unable to enjoy their desserts thus.

the space is very pretty **but usually packed** so it might **not be a good idea** to hang for long

seats were **tiny and not comfortable** to stay for long

Crowded so **not much of an ambiance.**

and the **cramped place** is still as **noisy**

While the cramped seating arrangements do help to ensure that customers spend less time in the shop and thus help improve queue times, it still contributes to a negative customer experience. In addition, despite this, there are still a significant number of complaints regarding the queue timings. Since Sunday Folks largely relies on its customers for its marketing, it should try to keep its online reviews as positive as possible, to avoid turning away potential customers.

Additionally, the negative reviews also reinforce the increasing demand for Sunday Folks, showing that the current premises may be too small to cater to the increasing demand, leading to the cramped settings and long queues. Since customers have already expressed the sentiment that the long queues make the wait “not worth it”, demand has reached a saturation point where additional customers are being turned away, instead of waiting. To further tap into this excess demand, Sunday Folks need to either expand its current operating space, or open a new branch elsewhere to divert the excess demand. In the process, they can also help promote a new flavour to generate hype for their new store/expansion.

Looking at some of Sunday Folks competitors, we also see some of the similar trends in complaints. For Wimbley Lu, 27.3% of negative reviews were regarding the confined space as well.

However, the place is still **super crowded** on a weekday afternoon during tea time. And **tables are just 15cm away from each other** which make group conversation awkward

It was **very crowded** during my visit. Service was okay. **Seats were too near** each other... food was mediocre.

The space is **rather squeezey** as the **tables are very near** to each other.

25% of negative reviews from Hatter Street also expressed similar negative sentiments regarding cramped settings. Some examples of reviews given are:

Location is quite sucks though, also the place is **tiny and cramped**

Slightly overpriced and **café is really small.**

While food reviews were often overwhelmingly positive, the largest cause for complaints among customers is usually cramped spacing. Since Sunday Folks' current capacity is already overloaded, it should then consider expanding its existing premises, or opening a new branch to cater to excess demand as well.

4 Industry Analysis

4.1 Industry Overview

The café industry has shown relatively stable growth in the recent years, and this growth is projected to continue at a constant rate until 2020. (Euromonitor)

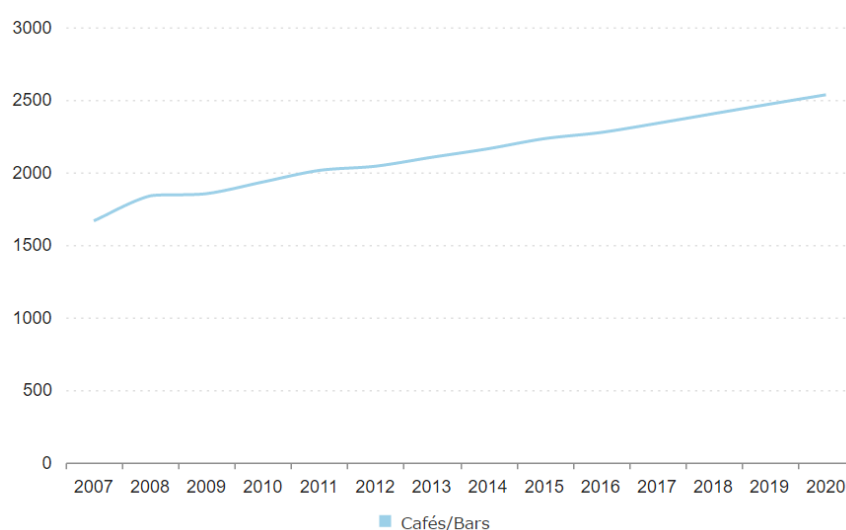


Figure 22 Project market size, Cafes and Bars

Figure 22 shows the projected industry growth for the cafes and bars industry through 2020, obtained through Euromonitor. Generally, we can see a slow but stable growth for the industry projected, which corresponds with the chart below showing the projected number of cafes/bars in Singapore for the same time.

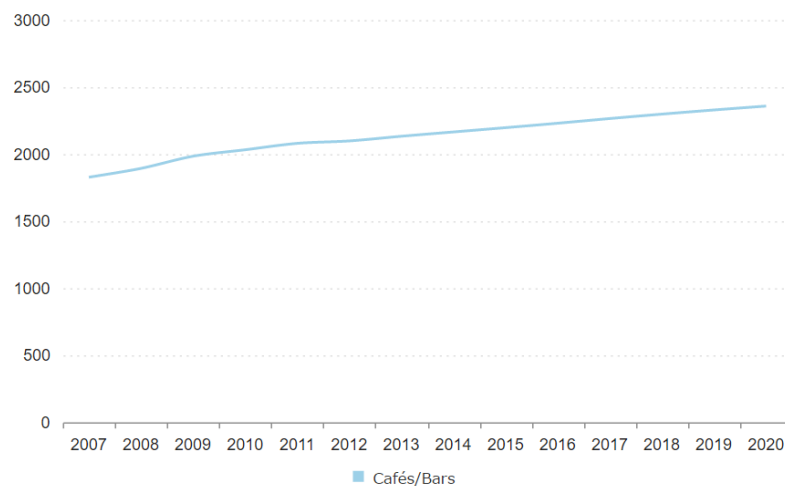


Figure 23 Projected unit growth, Cafes and Bars

The data suggests that there is still room for Sunday Folks to grow, either by opening a new outlet as proposed, or by expanding their current premises. Next, we consider the various industry trends.

4.1 Demand for novelty in desserts' tastes and presentation

Word-of-mouth has long been an effective method for consumers to learn about great places to eat. Similarly, the popular trend of posting food pictures on social media platforms has also allowed small outfits to get their name out without extensive marketing efforts. This has helped to bring about more customers for cafés that are frequently featured on consumers' social media accounts, which ultimately provides cafés with increased sales. (Euromonitor International, 2016)

To continuously appeal to consumers, cafes need to stay relevant with innovative flavours on their menu. When they serve interesting food, customers will also take the chance to share them on social media platforms. This helps to reinforce the point about Sunday Folks needing a unique flavour offering that is relatively popular, since this will result in a more than proportionate change in their online presence – customers are more likely to order the flavour, and are also more likely to post it for its uniqueness.

Sunday Folks already caters to this ongoing trend by placing some amount of emphasis on the aesthetics of their desserts, ensuring that their desserts are the ideal instagrammable food. However, they can still ride on this trend further by broadening their range of unique flavours such as Roasted Pistachios, which, by our analysis, is not as popular as unique offerings from other cafes.

4.2 Increasing Costs

The average unit price of ice cream has increased in 2016 as consumers continue to look for premium options while also reducing their overall consumption by opting for multi-packs containing miniature versions of their favourite ice cream products. The rising price of raw materials such as milk, cream and butter also impacted the average unit price. (Euromonitor International, 2016)

Regarding the increase in price, Sunday Folks should work to manage the prices of their products, given the complaints they have already received regarding the prices. This industry trend in increasing prices of materials, as well as increasing demand for quality products can be handled through managements of costs. This makes the costs of having a potential expansion more significant - a high rental would lead to gradually decreasing profit margins as costs continue to increase.

Additionally, rising rental costs and a labour crunch has also seen many cafés unable to sustain business operations and be eliminated from consumer foodservice thus. The high manpower and rental costs are likely to make their impact felt on smaller operators which may find business unsustainable under such a climate. (Euromonitor International, 2016) Almost half of the 369 cafes, coffee houses and snack bars that registered in 2011 have since closed. (Seow, 2014)

Despite this, Sunday Folks already has an established customer base, which will make it easier to sustain a new outlet since a portion of its current demand can be diverted to the new outlet. However, this also means that careful consideration needs to be put into a location, to ensure sufficient foot traffic in the area, and to also ensure that customers are willing to travel to the area for desserts.

4.3 Sweet treats & healthier alternatives

Independent cafés are quick to catch on to food fads. In 2015, fads that caught on in the café scene included matcha-flavoured lattes due to the soaring popularity of green tea and green tea-flavoured items. In 2016, reduced sugar and sugar-free ice cream has shaped new product developments.

Several of these new products and brands have been endorsed by the Healthier Choice symbol, which is provided by the country's Health Promotion Board. (Euromonitor International, 2016)

Experts have been talking up healthier food trends for a while now and that includes the dessert category, despite its tradition of being an indulgent treat or a reward for eating your veggies. Considering this increasing trend of healthy choices regarding food consumed, the menu here at Sunday Folks is limited to a few light desserts. Moreover, Sunday Folks has already been around for two years since its inception. Without renewing its dessert choices on the menu, the fad for waffles and soft serve may weaken the lustre of novelty the café once had within the foreseeable future. Thus, the ease of which consumers can browse other cafes that do provide healthy or trendy desserts may result in a high threat of substitute products.

In line with our analysis on introducing new menu items, or considering new flavours to develop their competitive edge, Sunday Folks can consider tapping into the healthy food trend sweeping through the industry, and start to offer unique, healthier choice versions of their existing flavours.

5 Recommendations

5.1 Influences

Since most of Sunday Folks' online presence is generated through their customers, it is more effective for them to work with influencers that already have a large online following, than to start their own social media campaign. In Section 4.1.1, we showed the impact and reach that a single influencer can have, and that collaborating with various social media influencers can have a significant impact of Sunday Folks social media presence. We filtered out the 10 most influential Instagram users who posted images from Sunday Folks, obtaining the following influencers:



Figure 24 Most significant influencers

Many of these users were responsible for generating the spikes in the max number of likes per week, and hence each was able to help increase Sunday Folks social media reach. Using a word cloud to visualize the general post content of the influencers, we then filter out influencers known mainly for

posting about food. Sunday Folks can consider working with these influencers to help them develop a stronger social media presence.



Figure 25 Word cloud - danielfooddiary, eatandtreats

These two word clouds show the general content of two of the top influencers, danielfooddiary and eatandtreats, both of whom are popular food posters, and both of whom generated significant spikes in the number of likes for posts tagged at Sunday Folks.

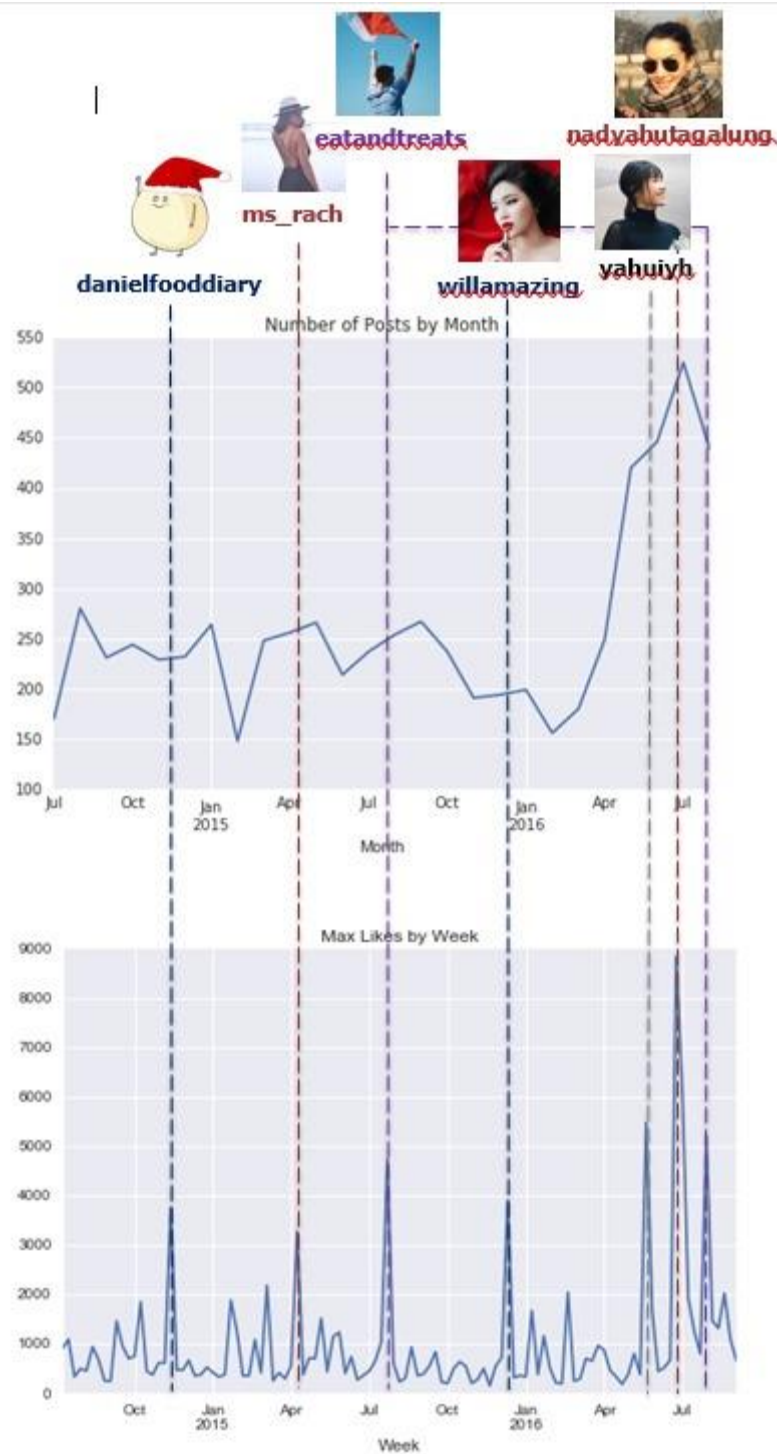


Figure 26 Impact of influencers

Looking back at the previous charts, we can see the users, the relevant spikes they caused, and lastly, how, with the exception for eatandtreats' second post, their posts all correspond with a increase in the number of posts tagged at Sunday Folks. Hence, having a significant influencer post does have a positive impact on their online presence.

5.2 Outlet Expansion

Sunday Folks should consider expanding their outlet, or looking for a new branch. This helps to solve several of the issues identified in section 3, such as the long waiting times and cramped space.

Additionally, an additional outlet can help Sunday Folks cater to excess demand that their current outlet is unable to accommodate. Currently, a common sentiment found online is that potential customers are turned away, leading to a loss of profits. By providing a secondary outlet that a portion of the existing customer base can go to instead, Sunday Folks can tap into this excess demand and increase their profits, while at the same time decreasing the number of negative sentiments in their reviews online. Since we want the new outlet to serve as a viable alternative to their current Holland Village outlet, the proposed outlet should not be located too far away from the current location of Sunday Folks.

There are some additional criteria we considered for the location of a new outlet. Since there were already complaints regarding the price of Sunday Folks, the new location should have a rental cost comparable to, if not lower than its current location. This helps to ensure the new outlet can maintain its profit margin, without compromising on their prices.

Additionally, to ensure that the location has a relevant traffic flow, the outlet should also be in a region where there are already several established dessert cafes, ensuring that there is at least some number of dessert café customers who frequent the area. This is significantly more important since with only two thousand over followers, Sunday Folks does not have an extensive reach on social media, and will have trouble promoting a new outlet outside of promotional efforts and collaborations with other companies on social media. A location with an already established customer flow will help to alleviate some of these issues while Sunday Folks works on generating initial publicity for their new outlet.



Figure 27 Distribution of dessert cafes

Figure 27 shows the distribution of dessert cafes in Singapore with the size of each point based on the number of recommendations the café received on Burpple. Generally, the more popular cafes are likely to attract a larger crowd and generate customer flow. Regions with popular cafes also show that there are customers that are willing to travel to that area for desserts. We therefore further filter this by identifying the cafes with at least as many recommendations as Sunday Folks, resulting in the following cafes:

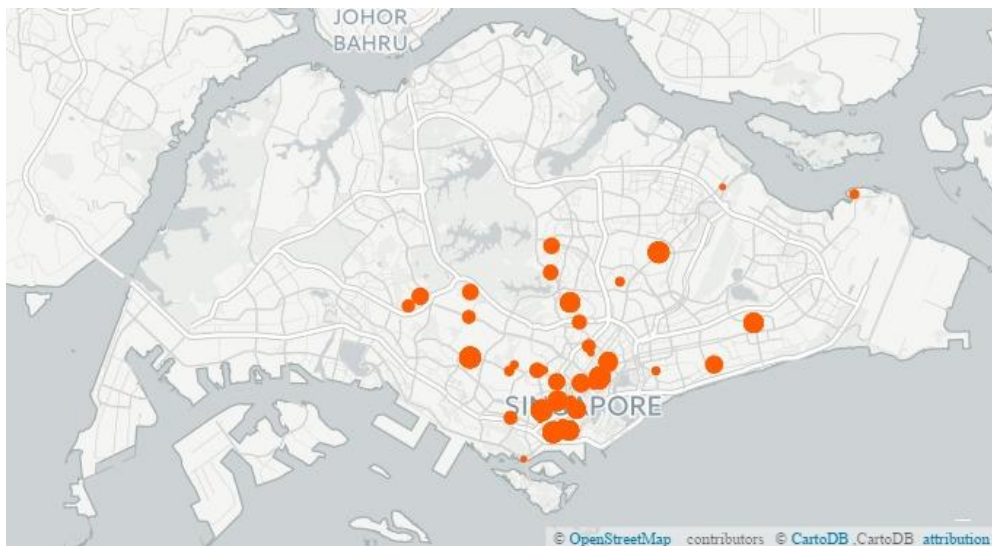


Figure 28 Filtered distribution of dessert cafes, recommendations > 1000

To then identify the clusters and work out a location, we performed hierarchical clustering. The results are shown, with each colour representing a different cluster, and black spots representing isolated dessert cafes. From the chart, we also identify several promising locations that can serve as locations for our new branch.

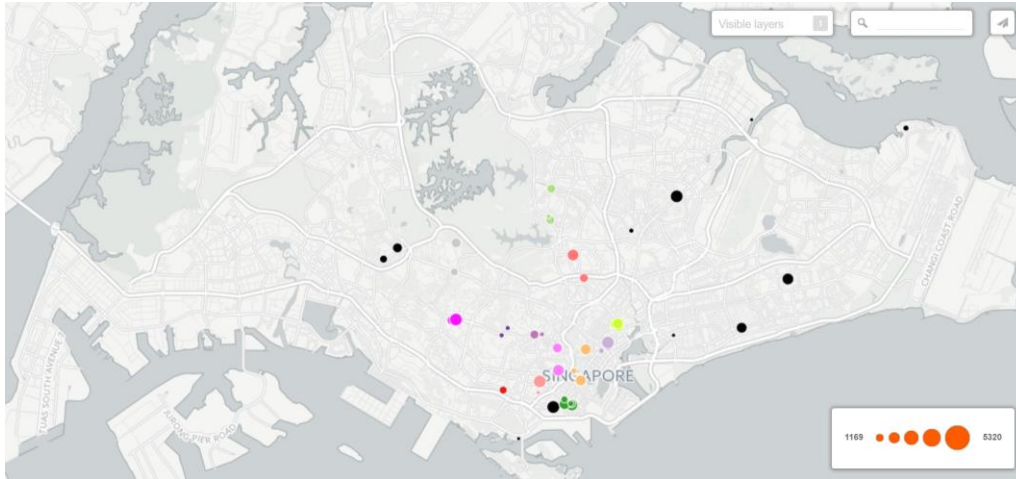


Figure 29 Hierarchical clustering

We then collect data on rental property within Singapore, filtered to include only retail spaces, and with a size of between 750sf and 2000sf, and plot then within our designated locations to check for availability of space within the regions, as well as the prices of the spaces. Firstly, we look at the Holland Village area, where Sunday Folks is currently located.

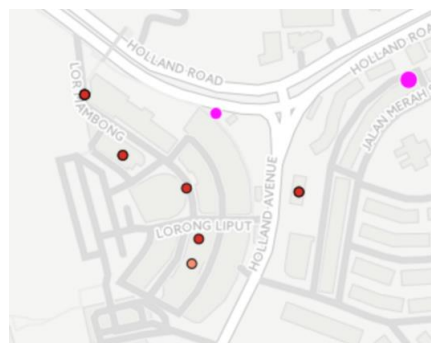


Figure 30 Holland Village

The available outlets in the Holland Village area have a relatively high psf, ranging from 25 to 40. Hence, when determining a potential location for the potential outlet, the prices chosen should also fall within the lower end of this spectrum, if not lower. Looking at the graph, there were a few promising locations identified.



Figure 31 Haji Lane, Lavender Street, Tanjong Pagar

In order to further narrow down our potential choices, we again use Instagram to give us a picture of the foot traffic available in the area, using location tagged posts for each of the following locations: Haji Lane, Lavender Street, and Tanjong Pagar.



Figure 32 Number of posts by month, location

Looking at the foot traffic, we see a large difference in general foot traffic based on the number of Instagram posts, with Haji Lane having a significantly higher foot traffic compared to the other location clusters identified. This would mark Haji Lane as an ideal location that fits the main criteria – with relatively low rental prices for the central region, several established dessert cafes in the region to ensure that the customer base is well established as well.

5.3 Collaboration

The campaign with Dulux was a success for Sunday Folks, and was directly linked to larger online publicity for Sunday Folks. Sunday Folks should consider working with other companies on social marketing campaigns, since their own social media presence is not prominent.

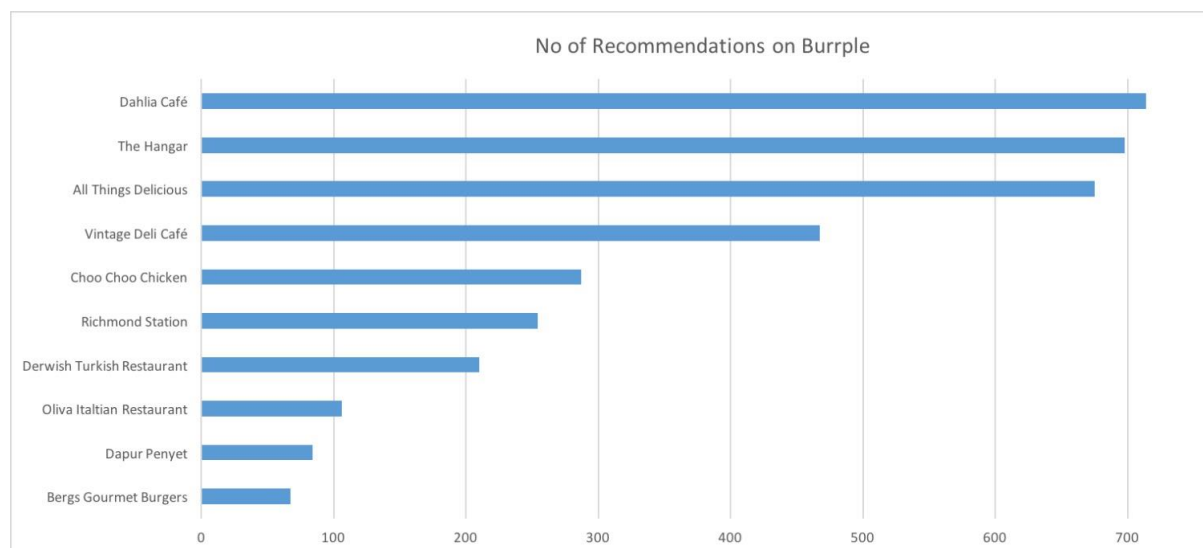


Figure 33 Recommendations on Burpple, Haji Lane restaurants

We can identify some potential collaborators within the recommended Haji Lane area by looking at the number of recommendations the restaurant received on Burpple as a measure of its popularity. From this, we can see that some of the more popular restaurants in the area, making them ideal partners for collaboration, are Dahlia Café, The Hangar, as well as All Things Delicious.

5.4 Introducing Novelty

In our analysis, we identified that while Earl Grey Lavender is their most popular flavours, unlike their competitors, Sunday Folks does not have an established secondary flavour. This could potentially deter customers from returning, since they don't find anything else from Sunday Folks worth coming

back for. The common trend identified among competitors was that in addition to one common flavour, most dessert cafes also have a unique flavour that remains popular.

There are two approaches to developing further competitive edges over their competitors. Since we identified that flavours are a major influencer, and a main attraction point for customers, Sunday Folks can consider developing new flavours, or promoting their flavours more to their customers, to develop the same hype around their flavours that their competitors have. Unique flavours have been proven by their competitors to be a big draw for new customers, and Sunday Folks currently already has a few unique offerings – sea salt gula melaka and roasted pistachios, which they can also try to promote more, instead of having to offer a new flavour.

The alternative is to continue to introduce novel menu products. Their soft serve ice cream currently serves as one of their advantages over their customers. However, as the soft serve trend falls out of fashion, they may also require introducing new items to their menu to maintain their competitive edge as well as stay relevant in the industry.

6 Conclusion

Sunday Folks is currently enjoying growing popularity, and while there are certain measures that Sunday Folks can take to boost their presence on social media, our research shows that Sunday Folks is currently facing excess demand. The additional popularity that can be gained by further utilizing promotions and collaborations on social media is offset by the fact that given the current consumer sentiments, Sunday Folks generally cannot cater to an even further increase in demand.

This could explain why Sunday Folks currently maintains a low profile on social media – because they have no urgent need to boost sales. However, instead of setting a cap on their potential profits, they can still tap into this excess demand by opening a new outlet.

Our research has shown that there is sufficient demand for a new outlet, and that a new outlet could also help to alleviate some of the complaints customers had about the existing outlet. Additionally, our industrial analysis has shown the café industry in Singapore to be relatively stable. The main failures are newer start-ups with no existing customer base. This is not the case for Sunday Folks.

We have also shown the effectiveness of their collaborative campaign with Dulux, and how it has led to a spike in their social media presence, something they were lacking severely in compared to their competitors. This could prompt Sunday Folks to further work on such collaborations.

Lastly, we have looked at some of Sunday Folks' competitors, and helped to identify Sunday Folks' main competitive advantage, as well as certain shortcomings, mainly the lack of interest surrounding most of their flavours. This will give Sunday Folks something to work towards in the future, and hopefully can establish a unique flavour that they can specialize in, in addition to their existing line of soft-serve ice cream. This not only helps Sunday Folks develop an additional competitive edge over their competitors, it will help them stay relevant even as consumer tastes and preferences change.

7 Appendix

7.1 Sentiment Analysis

```
import numpy as np
import pandas as pd

##lemmatisation
from nltk.stem import WordNetLemmatizer
##NB
from sklearn.naive_bayes import MultinomialNB
##train test split cross validation
from sklearn.cross_validation import train_test_split
from sklearn.cross_validation import KFold
#Tfidf vectorizer
from sklearn.feature_extraction.text import TfidfVectorizer
#stopwords
from nltk.corpus import stopwords as sw

#training data
#Amazon fine food review is used as the training data
data = pd.read_csv('Reviews.csv',header=0)
#remove missing data (no scores)
data=data[data.Score.notnull()]
#get score of 1s and 5s
data1 = data[data['Score'].isin([1,5])]

filtered = data1[['Score','Text']]
#give bad reviews score of 0, good reviews score of 1
filtered = filtered.replace(1,0)
filtered = filtered.replace(5,1)
test = filtered

#vectoriser
def make_xy(data, vectorizer=None):
    if vectorizer is None:
        vectorizer = CountVectorizer()
    #data.Text = the text to be analysed
    x = vectorizer.fit_transform(data.Text)
    #sparse matrix format
    x = x.tocsc() # some versions of sklearn return COO format

    #get an array of scores
    y = data.Score.as_matrix()
    return x, y

#calculate scoring
def cv_score(clf, x, y):
    result = 0.
    nfold = 5
    for train, test in KFold(y.size, nfold): # split data into train/test groups, 5 times
        clf.fit(x[train], y[train]) # fit
        result += clf.score(x[test],y[test]) # evaluate score function on held-out data
    return result / nfold # average

from sklearn.cross_validation import train_test_split
itrain, itest = train_test_split(xrange(test.shape[0]), train_size=0.7)
#get an array of ones
mask=np.ones(test.shape[0], dtype='int')
#those i
mask[itrain]=1
mask[itest]=0
mask = (mask==1)
```

```

from sklearn.feature_extraction.text import TfidfVectorizer
#the grid of parameters to search over
alphas = [0, .1, 1, 5, 10, 50]
min_dfs = [1e-5, 1e-4, 1e-3, 1e-2, 1e-1]

#Find the best value for alpha and min_df, and the best classifier
best_alpha = None
best_min_df = None
maxscore=-np.inf
for alpha in alphas:
    for min_df in min_dfs:
        vectorizer = TfidfVectorizer(stop_words=stopwords)
        Xthis, ythis = make_xy(test, vectorizer)
        Xtrainthis=Xthis[mask]
        ytrainthis=ythis[mask]
        #your code here
        clf = MultinomialNB(alpha=alpha)
        cvscore = cv_score(clf,Xtrainthis,ytrainthis)

    if cvscore > maxscore:
        maxscore = cvscore
        best_alpha, best_min_df = alpha, min_df
print "alpha: %f" % best_alpha
print "min_df: %f" % best_min_df

stopwords = set(sw.words('english'))
best_alpha = 0.1
best_min_df = 0.00001
from sklearn.feature_extraction.text import TfidfVectorizer

vectorizer = TfidfVectorizer(stop_words=stopwords,min_df=best_min_df,ngram_range=(1,1))
X, y = make_xy(test, vectorizer)
xtrain=X[mask]
ytrain=y[mask]
xtest=X[~mask]
ytest=y[~mask]

clf = MultinomialNB(alpha=best_alpha).fit(xtrain, ytrain)

#Print the accuracy on the test and training dataset
training_accuracy = clf.score(xtrain, ytrain)
test_accuracy = clf.score(xtest, ytest)

print "Accuracy on training data: %0.2f" % (training_accuracy)
print "Accuracy on test data:      %0.2f" % (test_accuracy)

sundayfolks = pd.read_csv('sundayfolks_burpple.csv').review
results=[]
for i in sfreviews:
    result = clf.predict_proba(vectorizer.transform([i]))[0]
    results.append([i,result])

test = results
test.sort(key=lambda x: x[1][0],reverse=True)

```


7.2 Scraping Instagram

```
1. import requests
2. import time
3.
4. def get_all_info(file_name, location_id):
5.     print('Writing to {}'.format(file_name))
6.
7.     have_next_page = True
8.     posts = {}
9.     err_count = 0
10.    count = 0
11.    codes = set()
12.
13.    r = requests.get("https://www.instagram.com/explore/locations/{}/".format(location_id))
14.    last_item = int(r.text.split("\"end_cursor\": \"")[1].split("\",")[0])
15.    while have_next_page and err_count < 3:
16.        curr_number_of_posts = len(codes) # Code to query the page
17.        try:
18.            headers = {
19.                'cookie': 'mid=V4EEeAAEAAGoq9I1MDU807pTkQRy; fbm_124024574287414=base_domain=.instagram.com; s_network=magix; sessionid=IGSCe317d5f749358789ccb7c41e6a6d820b84b41f47f28307891b2c0f30994b3c1e%3Adbpk3JEowuFzkE6wQSyINWeKxClngrc1%3A%7B%22asns%22%3A%7B%2242.61.246.233%22%3A9506%2C%22time%22%3A1473346113%7D%7D; ig_pr=1.5; ig_vw=623; fbs_r_124024574287414=IJcsrYX8wV8mvsIzgP9fsyxuyzu3XXby6ZwrKMfvkJE.eyJhbGdvcm10aG0iOiJITUFDLVNIQTl1NiIsImNvZGUiOiJBUEUitSUVHMFJkC3E3RmF0UNPSzRmYmxqcW50QGhxNW9aYVNraENrdHkyRHNTSGNSNGxyRfCWTS1UTzJBXzVseTZuRG1rUFUtWHliX2ViM2dITlNKZTh6Y19hdjdhdWE9aOVFZenR0eUx2Y2VslmRmcHBiMzNXZDVweGpQQ2U3MEswbjJWSUJVVUVVZmZKMC1peC1fNVdjOD11UUE1b1VkS2xYeHpjSDBSOHp0RWwhDNhWZ2gteEp1YnFqM0NPc0lWaxHUV2NKUXFRckNXZzJhdWdwR21jdXM1MlY1d0Zyc1ZUcTRzaGR1YWs5Y3Z5QVFBVEFtM2JEVEYzbXE1eFdLSWZPNHhJWE1UNmR6Ry1HR0ppSG9XTGVaM0tCSThhaGltaXFma2UySnBsN1RMYTRNZFVMc1QxVmdTV1V3U2xsUW5aV1kwNUJZcURQV0hKWjdoWmVHeUJhdCIsIm1zc3VlZF9hdCI6MTQ3MzM0NjExJmNiwidXNlc19pZCI6IjY0ODkyMzk4OSJ9; csrftoken=gRGjQTCuDsPVbstF0vRVjcUUAHnOukLV',
20.                'origin': 'https://www.instagram.com',
21.                'accept-encoding': 'gzip, deflate, br',
22.                'accept-language': 'en-US,en;q=0.8',
23.                'user-agent': 'Mozilla/5.0 (Windows NT 6.3; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/52.0.2743.116 Safari/537.36',
24.                'x-requested-with': 'XMLHttpRequest',
25.                'x-csrftoken': 'gRGjQTCuDsPVbstF0vRVjcUUAHnOukLV',
26.                'x-instagram-ajax': '1',
27.                'content-type': 'application/x-www-form-urlencoded',
28.                'accept': '*/.*',
29.                'referer': 'https://www.instagram.com/explore/locations/{}/'.format(location_id),
30.                'authority': 'www.instagram.com',
31.            }
32.
33.            data = 'q=ig_location({})+%7B+media.after({}%2C+12)+%7B%0A++count%2C%0A++nodes+%7B%0A++++caption%2C%0A++++code%2C%0A++++comments+%7B%0A+++++count%0A+++++%7D%2C%0A++++comments_disabled%2C%0A++++date%2C%0A++++dimensions+%7B%0A+++++height%2C%0A+++++width%0A+++++%7D%2C%0A++++display_src%2C%0A++++id%2C%0A++++is_video%2C%0A++++likes+%7B%0A+++++count%0A+++++%7D%2C%0A++++owner+%7B%0A+++++id%0A+++++%7D%2C%0A++++thumbnail_src%2C%0A++++video_views%0A++++%7D%2C%0A++++page_info%0A%7D%0A+%7D&ref=locations%3A%3Ashow'.format(location_id, last_item)
34.
35.            r = requests.post('https://www.instagram.com/query/', headers = headers, data = data)
36.
37.            # Update next page status
38.            retrieved_info = r.json()
39.            if 'media'
```

```

40. not in retrieved_info.keys():
41.     print(retrieved_info)
42.     raise ValueError('media key not found')
43. else :
44.     temp_last_item = retrieved_info['media']['page_info']['end_cursor']
45.     if temp_last_item:
46.         last_item = temp_last_item
47.     nodes = r.json().get('media').get('nodes')
48.     for node in nodes:
49.         code = node.get('code')
50.         date = int(node.get('date'))# likes = int(node.get('likes').get('count'))
51.         if node.get('caption'):
52.             caption = node.get('caption').encode('utf-8')
53.         else :
54.             caption = ''
55.         posts[code] = (date, caption)
56.
57.     count += 1
58.     print(count, ": ", len(posts), last_item)
59.
60.     have_next_page = retrieved_info['media']['page_info']['has_next_page']
61.     if not have_next_page:
62.         print('Reached the end')
63.     return posts
64.     if len(posts) > curr_number_of_posts:
65.         err_count = 0
66.     else :
67.         err_count += 1
68.
69. except Exception as e:
70.     print e
71.     print("Waiting...", last_item)
72.     time.sleep(60)
73.     err_count += 1
74.
75. df = pd.DataFrame.from_dict(posts, orient = 'index')
76. df.to_csv(file_name)
77.
78. return posts
79.
80. # Sunday Folks
81. get_all_info("sf.csv", 330498308)
82.
83. # Creamier
84. get_all_info("creamier.csv", 1029664860)
85. get_all_info("creamier_old.csv", 18818598)
86.
87. # Competitors
88. print("1. On the Table")
89. get_all_info('onthetable.csv', 772085775)
90.
91. print("2. Twenty Grammes")
92. get_all_info('twentygrammes.csv', 421151696)
93.
94. print("3. Stranger's Reunion *")
95. get_all_info('strangersreunion.csv', 213169599)
96.
97. print("4. The Cold Pantry")
98. get_all_info('thecoldpantry.csv', 450021133)
99.
100. print("5. Hatter Street *")
101. get_all_info('hatterstreet.csv', 215722842)
102.
103. print("6. Wimbly Lu *")
104. get_all_info('wimblylu.csv', 4993427)
105.

```

```

106. print("7. Fatcat *")
107. get_all_info('fatcat.csv', 518354426)
108.
109. print("8. Whisk & Paddle *")
110. get_all_info('whiskandpaddle.csv', 450940409)
111.
112. print("9. Daily Scoop")
113. get_all_info('dailyscoop.csv', 780419311)

```

7.3 Influencer Analysis

```

1. import pandas as pd
2. from wordcloud import WordCloud
3. import matplotlib.pyplot as plt
4.
5. # Load Data
6. inf_data = pd.read_csv("data/influencer_analysis.csv", encoding = "ISO-8859-1")
7.
8. # Set username as index
9. inf_data = inf_data.set_index('4')
10.
11. # Define wordcloud function
12. # https://github.com/amueller/word_cloud
13. def show_wordcloud(text):
14.     wordcloud = WordCloud(max_font_size=40, scale=3, background_color=None, mode='R
    GBA').generate(text)
15.     plt.figure(figsize=(10, 6))
16.     plt.imshow(wordcloud)
17.     plt.axis("off")
18.     plt.show()
19.
20. users = [('nadyahutagalung', 1436482),
21. ('littlemissbento', 190136173),
22. ('melissackoh', 4487106),
23. ('danielfooddiary', 2692900),
24. ('yahuiyh', 31733241),
25. ('eatandtreats', 11743588),
26. ('willamazing', 4434600),
27. ('ms_rach', 4135318),
28. ('andeecys', 739948724),
29. ('stylohotmilo', 34746293)]
30.
31. # Generate wordclouds
32. for username, user_id in users:
33.     subset = inf_data.loc[username]
34.     captions = " ".join([str(i) for i in subset.loc[:, '2'].tolist()])
35.     show_wordcloud(captions)

```

7.4 Generate Graphs for Instagram Posts

```
1. # Module Imports
2. import pandas as pd
3. import matplotlib.pyplot as plt
4. import numpy as np
5. import re
6. import seaborn
7. import difflib
8.
9. import matplotlib.pyplot as pylab
10.
11. #####
12. # Import Data #
13. #####
14. sf_data = pd.read_csv("data/sundayfolks_instagram.csv")
15. sf_influencer_data = pd.read_csv("data/influencers_sf.csv")
16.
17. #####
18. # Posts by Month #
19. #####
20. # Convert unix date to datetime
21. sf_data['date_posted'] = pd.to_datetime(sf_data['date_posted'], unit='s')
22.
23. # Group by month
24. posts_likes_per_week = sf_data.groupby([pd.Grouper(freq='1W',key='date_posted')]).max().loc[:, 'like_count']
25. posts_per_week = sf_data.groupby([pd.Grouper(freq='1W',key='date_posted')]).size()
26. posts_per_month = sf_data.groupby([pd.Grouper(freq='1M',key='date_posted')]).size()
27.
28. # Plot (remove last week/month cos September not over)
29. posts_per_week[:-1].plot(title="Max Likes by Week").set_xlabel("Week")
30. plt.figure()
31. posts_per_month[:-1].plot(title="Number of Posts by Month").set_xlabel("Month")
32.
33. # Save the data
34. posts_per_week.to_csv('insta_week.csv')
35. posts_per_month.to_csv('insta_month.csv')
36.
37. #####
38. # Plotting the Flavours #
39. #####
40. # Flavours from SF
41. flavours = ["summer strawberries strawberry",
42.             "roasted pistachio",
43.             "earl grey lavender",
44.             "madagascar vanilla",
45.             "seasalt gula melaka",
46.             "dark chocolate"]
47.
48. # Remove nan from captions
49. captions = sf_data.caption.replace(np.nan, '')
50.
51. def is_flavour_mentioned(caption, flavour):
52.     for word in (flavour.split() + [flavour]):
53.         match = difflib.get_close_matches(word, caption.lower().split(), cutoff=0.9)
54.         if match:
55.             return True
56.     return False
57.
58. for i in range(len(flavours)):
```

```

59.     sf_data[flavours[i]] = captions.apply(is_flavour_mentioned, args=(flavours[i],)
60. )
61. def f(x):
62.     return x[['summer strawberries strawberry', 'roasted pistachio',
63.               'earl grey lavender', 'madagascar vanilla', 'seasalt gula melaka',
64.               'dark chocolate']].sum()
65.
66. # Plot flavours by mentions per month
67. flavours_by_month = sf_data.groupby([pd.Grouper(freq='1M',key='date_posted')]).apply(f)
68. flavours_by_month[:-1].plot(title="Number of Posts by Flavour").set_xlabel("Month")

```

7.5 Scraping Burpple

```

1. import requests
2. from bs4 import BeautifulSoup
3. import pandas as pd
4.
5. def convert(date):
6.     if ('at' in date):
7.         date = date.split("at")[0]
8.         date = date[4:] + date[:3]
9.
10.    elif(',') in date):
11.        date = date.replace(",", "")
12.        date = date[4:6] + date[:3] + date[6:]
13.
14.    return date
15.
16. titles, likes, reviews, dates, names, pictures=[], [], [], [], [], []
17.
18. for i in range(0, 2001, 20):
19.
20.     r = requests.get("http://www.burpple.com/foods?is_review=true&offset=" + str(i)
21.     + "&venue_id=149405", allow_redirects=False)
22.
23.     r_resp = r.text
24.     r_resp = r_resp.split("masonry")[0].encode('utf-8')[21:]
25.     r_resp = r_resp[:-6]
26.     r_resp = r_resp.decode('utf-8')
27.     r_resp = r_resp.replace("\\", "")
28.
29.     soup = BeautifulSoup(r_resp, "lxml")
30.
31.     titles += [title.text for title in soup.find_all('div', {'class': 'food-
32.     description-title'})]
33.
34.     reviews += [review.text for review in soup.find_all('div', {'class': 'food-
35.     description-body'})]
36.
37.     likes += [likes.text[9:-16] for likes in soup.find_all('li', {'class': 'food-
38.     activity-like'})]
39.
40.     for date in soup.find_all('div', {'class': 'card-item-set--link-subtitle'}):
41.         if (date.text!="
42.             44 Jalan Merah Saga, Singaporen
43.         "
44.         ):
45.             dates += [convert(date.text[11:-9])]
46.
47.     pictures += [pic.img["src"] for pic in soup.find_all("div", {"class": "card-
48.     item-set--link-image card-item-set--link-image--user"})]
49.
50.

```

```
42.     names += [pic.img["alt"]] for pic in soup.find_all("div", {"class": "card-item-  
    set--link-image card-item-set--link-image--user"})]  
43.  
44.  
45. tts = pd.DataFrame(titles, columns = ['title'])  
46.  
47. rvs = pd.DataFrame(reviews, columns=['review'])  
48.  
49. lks = pd.DataFrame(likes, columns=['likes'])  
50.  
51. dts = pd.DataFrame(dates, columns=['dates'])  
52.  
53. nms = pd.DataFrame(names, columns=['name'])  
54.  
55. pict = pd.DataFrame(pictures, columns=['profile pic'])  
56.  
57. texts = pd.concat([dts, nms, pict, tts, rvs, lks], axis=5)  
58.  
59. texts.to_csv('sundayfolks_burpple.csv')
```