Sainsbury's

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SAINSBURY'S DELIVERY APP ANALYSIS

Word count: 1083

1. Introduction

This report aims to outline the current state of Sainsbury's online ordering app and set out strategic priorities the business should take for 2022. The mission is to work with the developer team to improve customer experience and increase app-based ordering by analysing reviews left by customers on the Google Play Store. During the COVID-19 pandemic supermarket ordering apps became the status quo, leading to supermarkets having to deal with an influx of users for their online and app-based ordering. Statista (2022) finds that 82% of individuals will continue to shop online to an extent. Moreover, commerce platform Criteo in 2017 found that approximately 40% of all online grocery purchases in the UK are done via mobile apps, this figure is likely larger as of 2022. Therefore, given the variety of grocery apps available, the low switching costs, and the homogeneity of products amongst them, it is vital for Sainsbury's to minimize technical issues to improve customer experience and conversion rate. By taking these actions, it can expect to gain a larger share of the market both organically, through increased positive reviews and referrals from satisfied customers; and inorganically, through ad driven traffic targeting dissatisfied customers from competitors.

2. Methodology

To understand the quality of Sainsbury's ordering-app reviews were scraped off Google's UK Play Store alongside 6 competitors (Appendix – Table 1). An initial exploratory analysis of the data was performed, and the results are summarised in Table 2a-2b of the Appendix. This analysis highlighted interesting points in the data which are furthered discussed and analysed in section 3. Prior to extracting key insights, the reviews were labelled based on their star ratings with 3 stars being labelled as neutral and above and below being labelled positive and negative, respectively. This was done to understand the general sentiment of the reviews and served for structuring the dataset as a potential supervised problem and assess the predictive performance of different labelling models for future extensions, these are discussed in section 4.

Subsequently, reviews were tokenised into sentences and into words by applying NLTK's sentence tokenize and Scikit-learn's tweet tokenizer. The words were then normalised by lowercasing

them and by combining compound words with multiple spellings, but identical meanings (Appendix - Table 3). Lastly the resulting tokenised words from each review were lemmatized by using part-of-speech tagging to ensure the resulting lemmatized words were classified based on their definition in context. Lastly, prior to performing any further analysis, punctuations, digits, symbols, and different sets of stop words were removed based on the analysis being performed (Appendix – Table 4).

3. Results

After preparing the data, the reviews for Sainsbury's collectively showed that in the last 30 days 57% of the reviews received were positive, as shown in Figure 1.
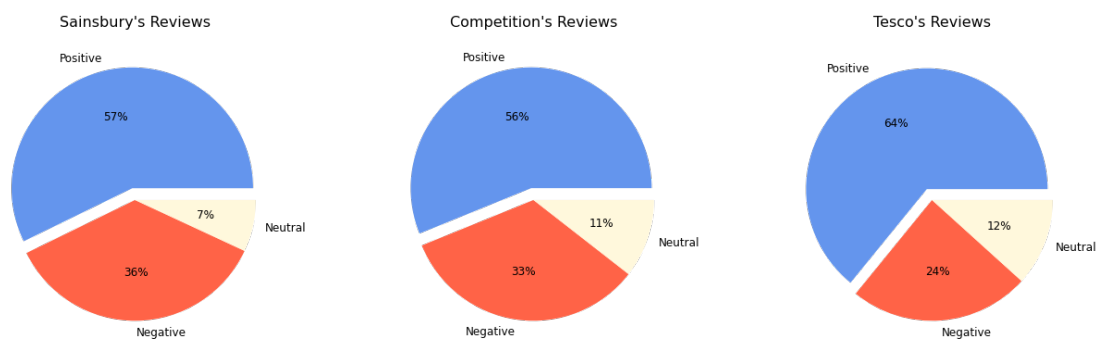

Figure 1 Reviews by sentiment from March 1st 2022 - March 31st 2022

This was 1% above the industry average for the same period. In addition, the number of negative reviews received was 3% below the industry average; however, when compared with its closest rival by market share, Tesco, it was 12% above. Figures 2a and 2b explore the distributions of review submissions throughout the days of the month and whilst negative reviews dominate at the start the
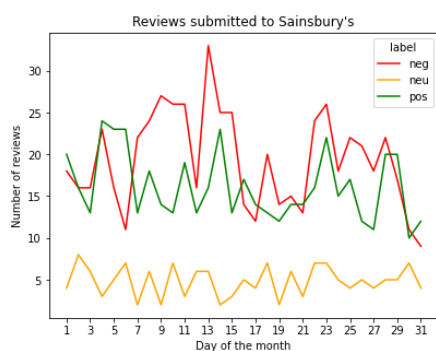

Figure 2a Reviews submitted to Sainsbury's by date.

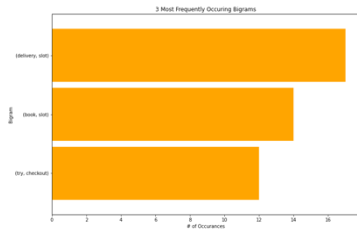*Figure 2b Reviews submitted to competitors by date.*

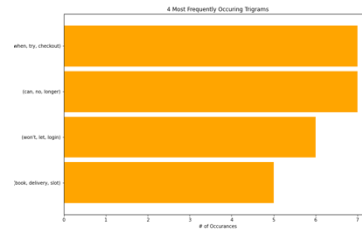*Figure 3a Most frequent bigrams for Sainsbury's negative reviews.*

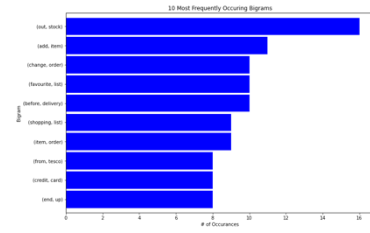*Figure 3b Most frequent trigrams for Sainsbury's negative reviews*

Figure 3c Most frequent bigrams for Tesco's negative reviews.

trend reverses by the end of the

month, in Sainsbury's case, it does not. To understand why, we look at the frequency of bigrams and trigrams present in negative reviews and extrapolate that the main issues occurring are at the end of the purchasing funnel namely: at checkout and when booking a delivery slot (Figure 3a and 3b). Moreover, several reviews mention that the app leaves customers unable to log in. Fortunately, the company's closest competitor, Tesco, is experiencing similar complaints with negative reviews frequently mentioning payment and checkout processes (Figure 3c). Therefore, the subsequent months are important as the company that can address these bugs will likely

have a first mover advantage and can poach the other's unsatisfied customers.

As per Figure 4, the most common adjectives which characterize Sainsbury's are good, great, easy, and frustrating. The adjectives are mostly positive; however, these must be carefully assessed as they represent a sub sample of customers

Figure 4 Adjectives found in Sainsbury's reviews with size reflecting frequency of usage.

which leave a comment and, if prompted to do so following a successful delivery or order the results, may be biased.

4. Conclusion and Future Work

Given the results of the analysis we suggest investigating the functionality issues by reviewing errors which have been recorded by the app during the checkout and payment processes. Addressing these issues must be a priority given most of the negative reviews received have resulted from failures during these stages. Furthermore, to alleviate the frustration felt by customers who are unable to login

after several attempts it is advised to trigger a message to contact support directly or move to the web version to complete the order. This would serve as a short-term solution whilst the issue is investigated and solved. Additionally, an area which can prove to be beneficial for the customer experience would be to create an autoresponder that engages with reviews, given the company only responds to a mere 0.2% of reviews. This can be implemented by leveraging hundreds of data points containing interactions of Sainsbury's twitter account with customer complaints. This would improve Sainsbury's brand and may translate to lower customer attrition.

In addition, studying the app showed that for users to reach a point of contact in-app requires a minimum 5 clicks and an in-app browser i.e. it is a cumbersome process. This can be streamlined by an in-app chatbot or an in-app menu to avoid customers leaving the shopping experience. Furthermore, it is advised to supplement the reviews dataset by incorporating topic modelling and tagging to better classify reviews, in turn providing better data to train the chatbot and enable enhance customer issue tracking. Furthermore, the sentiment analysis performed with this data can also be expanded to include data from the Apple Store, Twitter, and Facebook to provide a more comprehensive view of customer's app-based ordering experience. For labelling the data it is recommended to employ the transformer-based model called BERT Base Multilingual Uncased Sentiment Model which showed a 79.12% accuracy at predicting the sentiment label, outperforming VADER and TextBlob. Once the data is collected and labelled a KPI can be formulated to track customer satisfaction over a given app-version or period to ensure continuous improvement.

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Appendix

Companies	1 Star	2 Star	3 Star	4 Star	5 Star
Tesco	300	300	150	250	250
Morrisons	300	119	80	86	250
Marks & Spencer	300	300	150	250	250
Asda	300	300	150	250	250
Aldi	300	280	150	250	250
Sainsbury's	300	300	150	250	250
Waitrose	300	115	130	250	250

Table 1 Reviews retrieved per company by star. Those which are below 300 (1 and 2 stars), 250 (4 and 5 stars) and 150 (3 stars) did not have enough reviews available for the selected star hence the lower amount.

Company	Average number of words per review	Average number of sentences per review	Number of app versions reviewed in 2022
Tesco	23	2	13
Morrisons	21	2	6
Marks & Spencer	19	2	18
Asda	26	2	22
Aldi	16	2	12
Sainsbury's	22	2	13
Waitrose	21	2	9

Table 2a Exploratory data analysis results.

Company	Most liked review
Tesco	"Using favourites to shop is an issue. You cannot delete items from the list if you no longer need them, meaning the list becomes very long. Just recently it has begun to drop out of favourites, forcing you to go through the list several times to complete the order - which is frustrating. This is still not fixed months later. Update - still can't delete items, still keeps dropping out of favourites, forcing you to go through the list several times to complete the order."
Morrisons	"UPDATE: seems to work now, for me. No hint at which of the two Morrisons groceries apps you need. The app descriptions say it depends where you are, but no. This app shows my orders (placed on the website), shopping lists, account details, etc; the other (green icon) logs me in but shows I have no address, no order - no account in other words. By CHANCE, I tried this one first so was spared confusion. I'll

	stick with the website just to be on the safe side; the apps still seem far from reliabl e.”
Marks & Spencer	“Offers section unusable. You can click to add offers, but there is no way to view t hem. You drag downwards from near the bottom for the tab to pop up, and you can see half of the top offer. Trying to scroll the offer up to read it minimises the tab ag ain. Worst design I've seen in ages. There must be some secret method to view thes e offers that I am not aware of, as this surely would have been fixed by now. Please share the secret!”
Asda	“Update: Better but could be improve Products in "Your Trolley" are grouped rand omly even if you choose "Departments View". When searching for items using the search box, you can't see what you have typed. NEW PROBLEM, a useless banner telling you about alternative producers is taking up space when searching through f avourite items.”
Aldi	“Great app. Especially useful during pandemic. Two points to improve app. 1) wish you could star or bookmark items. 2) also be able to filter in-store items only. I hav e made mistake of buying two items full price and then when Ive gone shopping th e same items were half price in store. But that's the chance you take. I was isolating so wasnt going regularly to store. When I do I would monitor certain products to se e if they would be reduced.”
Sainsbury's	“We used to use this app for our regular shop but it seems to be getting more and m ore glitchy. To the point where I spent ages booking a slot, filling my basket, only t o have a constant loading circle when trying to pay. When refreshing the app, I fou nd it hadn't even acknowledged the booking of the slot never mind the basket. Pleas e sort this out ASAP, surely this is a critical part of your service now? I'll be going t o a competitor with a good app in the meantime.”
Waitrose	“Useless. I'm supposed to use the app to access 'my offers', but they're not shown in the app. I have to access them via the web site instead. So now I need to show the My Waitrose card, then have to get out the phone, log into the web site, navigate to the right page and scan the phone to get an offer. Hopeless, the system was better y ears ago, M&S can do it properly with their Sparks card, Tesco via their Clubcard. If you don't want to give offers, just stop them entirely, don't just make them so har d to access we don't bother.”

Table 2b Most liked review per company.

Raw Version	Normalised Version
Check out	*Checkout*
Club card	*Clubcard*
Log out	*Logout*
Log in	*Login*
Spark card	*Sparkcard*
Out stock	*Outstock*

Table 3 Compound words and the normalisation applied.

Type of Analysis	Stop words
Bigrams	to, the, have, on, in, is, this, and, i, you, of, be, for, my, that, a, very, there, ..., .., ",", do, not, it, doesn't, let, me, every, longer, even, though, too, an, use, rather, through, your, more, now, keep, but, at, all, can't, with, won't, when, sort, please, need, app, easy, quick
Trigrams	and, to, the, i, you, this, a, me, be, very, it, ..., .., ',', for, of, easy, quick

Table 4 Stop words removed from lemmatized text prior to analysis.