Amazon/Deliveroo Merger Inquiry Research

Final Report

April 2020

Prepared Accent, Chiswick Gate, 598-608 Chiswick High Road, London, W4

Contact: Matt Evans
E-mail: Matt.Evans@accent-mr.com
Telephone: 020 8742 2211

File name: Amazon/Deliveroo Merger Inquiry Research Report v7 REDACTED

Registered in London No. 2231083
Accent Marketing & Research Limited
Registered Address: 30 City Road, London, EC1Y 2AB

Contents

1 Introduction

1.1 Background

The Competition and Markets Authority (CMA) is the UK's competition regulator and works to promote competition for the benefit of consumers. In December 2019 the CMA launched Phase 2 of an inquiry into the anticipated acquisition by Amazon.com NV Investment Holdings LLC, a wholly-owned subsidiary of Amazon.com, Inc. (Amazon) of a minority shareholding and certain rights in Roofoods Ltd (Deliveroo).[1]

Specifically, the CMA is investigating the potential impact the acquisition may have on the Online Convenience Grocery (OCG) service offerings from the companies. In the UK, Amazon offers a wide range of grocery offerings through Amazon Prime Now, including same-day delivery, as well as Amazon Fresh and Whole Foods Market. Deliveroo is a UK-based online food delivery company and has expanded its online delivery platform for restaurants to include convenience grocery delivery from non-restaurant suppliers such as Co-op and some off-licences. While both parties are active in this emerging market, their service offerings are different, with varying degrees of emphasis on price, speed of service, range etc.

The CMA's merger inquiry will assess if the anticipated acquisition may be expected to result in a substantial lessening of competition within the OCG market. To support its merger inquiry, the CMA needs to understand the potential impact that the proposed acquisition may have on consumers and resulting consumer choice.

1.2 Objectives

The core objective of this research is to understand customer OCG behaviour, drivers of consumer choice, and how this may change based on potential new service offerings that may enter the market as a result of the merger.

Specific objectives include:

1. To understand the contexts and motivations for using online convenience grocery (OCG) platforms
2. To understand the importance of different attributes of offerings in this market, namely price, product range, delivery charge and speed of delivery
3. To understand the trade-offs between these attributes and choices between actual and hypothetical offerings
4. Assess closeness of competition of the parties, and of third parties and out of market constraints (principally physical stores)

[1] https://www.gov.uk/cma-cases/amazon-deliveroo-merger-inquiry

In line with these objectives, Accent and PJM economics were appointed to design and implement a survey of Amazon Prime Now and Deliveroo customers including a choice-based conjoint exercise to assess the potential impact of market changes on customer behaviour and consumer choice.

This report describes the design of the research, the conjoint exercise and presents key findings from analysis of the main data. It is structured as follows: Section 2 describes the research design and approach; Section 3 presents the results and findings of the non-conjoint findings; Section 4 presents the results and findings of the conjoint analysis and the development and application of the market simulator tool.

2 Research Approach

2.1 Overview of approach

The research used a mixed methodology to provide the necessary evidence on customers' OCG use and potential future behaviour. It comprised three main phases, with the first two – qualitative exploration and cognitive testing - informing the design of, and providing context for, the third stage – a quantitative customer survey.[2]

1. Qualitative depth interviews with merger party customers
2. Cognitive interviews with merger party customers to test survey materials
3. Representative survey of merger party customers, including conjoint design

In this report, findings are based on Amazon Prime Now customers that made an order for same-day delivery where at least half the order, by value, was made up of groceries. Where the report refers to 'Amazon customers' or 'Amazon Prime Now customers' this is used as shorthand to refer to Amazon Prime Now customers who made an order for same-day delivery where at least half the order, by value, was made up of groceries.

2.2 Qualitative exploration of OCG use

Prior to finalisation of the draft questionnaire, qualitative interviews were carried out with customers to explore their use of the merger parties' OCG offers. This stage informed the questionnaire design and the approach to be used for administration of the survey.

Specific aims of the interviews were to:

- test recall of a specific order made using the parties' OCG offer. This was important to ensure that customers could respond to the choice scenarios presented in the survey in reference to a specific real-life order

[2] In order to contact customers and ask them to complete the survey, customer personal data were processed. Processing of customers' personal data was compliant with data protection law as set out in the General Data Protection Regulation (EU Regulation 2016/679) - known as the GDPR - and in the Data Protection Act 2018. The processing allowed the CMA to investigate the merger, using its powers under Parts 1 and 3 of the Enterprise Act 2002 (EA02). The CMA's legal ground for processing customer personal data is Article 6.1.(e) of the GDPR and section 8(c) of the Data Protection Act 2018. The CMA processed the minimum amount of customer personal data necessary for the exercise of its statutory functions. The CMA is a controller under data protection law and, where Accent is processing personal data on behalf of the CMA, it is a processor. The CMA used its powers under section 109 of the Enterprise Act to compel the Parties to share certain personal data for customers, namely name, email address and telephone number(s); order reference number, the dates and times the order was placed and delivered, along with the delivery postcode; the value of the customer order, number and type of items bought and where they came from. In addition, the CMA and Accent, acting on its behalf, processed customer IP addresses of customers who completed the online survey, as this was collected automatically when customers entered the survey using Accent's online questionnaire.

- begin to understand drivers of customer choices regarding OCG use
- ensure that the main service attributes that inform customer choice were covered by the survey and conjoint design
- Begin to test an early draft of the conjoint design to be used in the main survey

Nine depth interviews were conducted with customers of the merger parties via telephone, each lasting around 30-50 minutes. Participants were recruited from sample, provided by the merger parties, of same-day OCG customers that placed a grocery order on January 31st 2020.

Five interviews were conducted with Amazon customers and four interviews with Deliveroo customers. Customers were recruited to include a mix of gender, London and non-London locations, a range of basket size, basket cost and merchant types.

The discussion guide used for the depth interviews is included in Appendix A.

2.3 Survey design

The central focus of the research approach was a representative survey of customers of the merger parties to provide a quantitative measure of customers' OCG use and likely response to different scenarios should the offers converge. It is noted that some providers expect the OCG market may expand well above current levels in the coming years and that current service users may not be representative of the future customer base as it becomes adopted more widely. The report authors recognise this is a limitation of the survey.

Following completion of the qualitative interviews, a draft questionnaire was developed. The survey aimed to understand customer behaviour and potential future behaviour using the following questionnaire structure:

- Customer screening (minimum age 16 and recalled a valid OCG order)
- OCG order type (shopping mission, when needed, reasons for use of OCG and merger party)
- Frequency and scale of OCG use
- Drivers of increased OCG use
- Diversion
- Conjoint section
- Use of other OCG providers
- Final classification questions

An important element of the screening stage was to ensure the survey participant recalled a relevant OCG order with the merger party. Participants were in scope if they recalled the order contained within the sample provided by the merger parties (see

section 2.7 for further details on sampling) or if they could recall the details of an OCG order made within the previous four weeks.[3]

The majority of the survey questionnaire and all survey invitation content only mentioned the name of the merger party that the participant was a customer of. It was only at the latter stages of the questionnaire (use of other OCG providers) that the other merger party was referred to. At no point was the other merger party specifically named in the context of the merger inquiry.

The survey used a conjoint approach to establish the key attributes of the OCG offers that drove customers' purchase choices. The design of the conjoint is explained in section 2.6.

2.4 Cognitive testing of survey questionnaire

Following agreement of the draft questionnaire and conjoint design, a cognitive testing stage was conducted. This aimed to refine the questionnaire and ensure it was understood clearly and its content, including the conjoint design, encapsulated the way customers make choices regarding OCG use.

Eleven cognitive interviews were conducted with customers of the merger parties (5 Amazon customers and 6 Deliveroo customers). Interviews were conducted via telephone, lasting approximately 45-60 minutes. Interviews were conducted over the phone but using a screen-sharing platform, GoTo Meeting. The interviewer shared their screen with the participant, allowing for the participant to complete the survey while the interviewer observed the responses entered and navigation of the survey, including use of on-screen instructions and 'more information' buttons.

Participants were asked to read aloud the questions as well as their thought process while they considered and selected their response. Following completion of the questionnaire, the interviewer probed on specific answers given and the reasons for those choices and clarity of the information presented.

Participants were recruited from sample, provided by the merger parties, of same-day OCG customers that placed a grocery order on February 9th 2020. Participants were recruited to include a mix of gender, London and non-London locations, a mix of basket size, basket cost and merchant types.

Following the cognitive testing stage, a small number of revisions were made to the survey design, including:

- The screener wording was changed to allow for joint orders (i.e. a customer completing an order jointly with another family or household member)
- Including regular reminders of the definition of 'grocery' items to prevent customers responding about restaurant / non-grocery deliveries

[3] The details customers needed to recall of the order within the previous four weeks were the time period of the order, delivery date, category of items purchased and approximate order value.

- Revision of the 'order type' categories (see Q9 in Appendix D) to better articulate the main type of purchase that customers were making
- To support easier comparison between the different 'Product range' levels an information button was added to the attribute description for the lowest level - 'limited range'. This presented a full list of item categories, and the exact items within each category, available within the limited range option. The list of items is included in Appendix C.

The cognitive interview discussion guide is included in Appendix B.

2.5 Piloting of survey questionnaire

Prior to the survey being fully implemented, the questionnaire and survey approach was piloted. The aim of the pilot was to test:

- recall of a recent OCG order
- survey response rates
- questionnaire length
- effectiveness of the conjoint design and understanding of the exercises

Sample for the pilot survey was provided by the merger parties. The pilot survey was conducted between February 28th and March 3rd. Customers included in the Amazon/Deliveroo supplied sample were sent email-invitations to complete the online survey. Reminders were sent on March 2nd to all customers who had not completed the survey (excluding undeliverable email addresses). A total of 158 interviews was achieved for the pilot survey, at a response rate of 2.4% overall (see Table 1).

Table 1: Pilot survey response rates

Merger Party	Sent the invitation	Bounce-backs	Completed survey	Response rate (excl. bouncebacks)
Amazon	3568	183	120	3.5%
Deliveroo	3491	216	38	1.2%
Total	**7059**	**399**	**158**	**2.4%**

The results of the pilot showed the conjoint design was working effectively; there were very few instances of non-trading behaviour, (where participants always choose the same alternative throughout the exercise); the participant feedback was positive; and the econometric models were well estimated, particularly considering the small sample sizes.

The main change resulting from the pilot survey results was in the administration of the survey. Given the low response rates, and low proportion of total invitations that resulted in the survey being accessed, particularly among Deliveroo customers, invitations for the mainstage survey were sent via SMS as well as by email. Full details of this approach are provided in section 2.7

2.6 Conjoint design

The objective for the conjoint design was to attempt to simulate the situation that consumers were in when placing a recent OCG order, with features of the choices varying in ways that could be of interest to the Inquiry. Basing the choice exercise, like this, on a specific real-world choice occasion is desirable as a means of making the questions relevant, unambiguous and straightforward to answer.

The design was constructed to focus on the key features relevant to the Inquiry, namely: price, delivery charge, speed of delivery and range of shopping. Brand was purposely excluded from the design on the basis that the exercise was intended to measure the importance and strength of the underlying demand drivers independently of the current market strength of existing brands, which could be anticipated to evolve significantly in the years to come. Furthermore, the connotations associated with existing brands could cause participants confusion when associated in the exercise with very different ranges, speeds, prices and delivery charges. As such, while a potentially significant demand driver, it was considered best to exclude brand from the conjoint design.

2.6.1. Choice format

Figure 1 shows an example of a conjoint question from the survey, which illustrates the nature of the questions asked. Each participant saw eight questions based on this choice format.

Figure 1: Example conjoint question

	Option A	Option B	Option C	Option D
Range of products/brands offered	Small range	Like at a convenience store/corner shop	I would buy from a shop or order elsewhere for next day/later delivery	I would not buy at all
Speed of delivery	Between 2 and 4 hours, within a 30-minute window	Between 2 and 4 hours		
Price (excluding delivery)	£23.00	£26.00		
Delivery charge	£5.99	Free		

2.6.2. Attributes and levels

The attributes and levels used in the conjoint survey are shown in Table 2 The price levels (in %) for both Amazon and Deliveroo, as shown in this table, were multiplied by the actual order value and added to that base order value as an increment. The price attribute was therefore expressed in monetary terms to the participants.

The attributes and levels were utilised in an experimental design that was created to obtain the sequences of choices that were actually faced by participants in the survey.

Table 2: Attributes and levels

Attribute	Description	Attribute Levels	
AmazonPrice	Price of order (in relation to real-world order value)	1	0%
		2	15%
		3	30%
		4	50%
		5	100%
DelivPrice	Price of order (in relation to real-world order value)	1	-50%
		2	-43%
		3	-35%
		4	-25%
		5	0%
DelCharge	Delivery charge	1	Free
		2	Free for orders of £40 or more (otherwise £3.99)
		3	£3.99
		4	Free for orders of £40 or more (otherwise £5.99)
		5	£5.99
		6	Free for orders of £40 or more (otherwise £7.99)
		7	£7.99
Speed	Speed of delivery	1	Within 30 minutes
		2	Within 1 hour
		3	Within 2 hours
		4	Between 2 and 4 hours, within a 30-minute window
		5	Between 2 and 4 hours
Range	Range of products	1	Small range
		2	Like at a convenience store / corner shop
		3	Like at a supermarket

2.6.3. Experimental design

The experimental design approach involved the following steps:

- First, the full factorial of all possible combinations of choice situations was generated.
- We then removed choices where one alternative dominated the other on every attribute
- Next, we selected, at random, 1,600 of the remaining choice situations
- These were grouped, or 'blocked', into 200 sequences of eight via the creation of a 'block' variable, generated using an algorithm that selected on the basis of minimum association of the variable with the design attributes (using a series of Pearson chi-squared tests).
- Each participant in the survey was then allocated one of the 200 blocks at random.
- For the first seven choices in each exercise, Amazon customers were allocated price levels from the *AmazonPrice* group of levels and Deliveroo customers were allocated levels from the *DelivPrice* group of levels. For the eighth question, we allocated levels from the *DelivPrice* group of levels for Amazon customers and from the *AmazonPrice* group of levels for Deliveroo customers. The intention behind this approach was to

focus on realistic price level changes for the majority of choice experiments, based on the fact that currently Deliveroo price levels are typically higher (in some cases up to 100% higher) than Amazon price levels for the same items, but to allow in the eighth choice the possibility of exploring potential non-linearities around whether prices were more or less expensive than the base order price for both groups of customers.

The overall design approach adopted here was motivated by three principal considerations.

- First, there was a desire to minimise correlation between the attribute levels. This would allow simple descriptive tables of choice probabilities by one attribute at a time to convey meaningful information about the impact of that attribute on choice, without being substantially affected by correlations with other attributes. This consideration was important due to the fact that such descriptive tables could potentially provide useful supporting evidence to the Inquiry, alongside the results from the econometric models.

- Second, there was a desire to avoid the presence of dominant/dominating alternative pairs. This was to ensure that each question required some meaningful trade-off and hence generated useful data.

- Finally, there was a desire to ensure the ability to identify and estimate interactions between attributes, rather than just their main effects, in the ultimate analysis. This would not preclude the ultimate selection of a main effects only model as the principal outcome from the research, but would reserve the opportunity to extend the model to include interactions at the analysis stage should such extensions suggest themselves as a consequence of the results and their interpretation by CMA and/or the merging parties.

To be clear, it was explicitly recognised that the desire to minimise correlation between attributes was incompatible with the use of 'efficient' design selection methodologies which optimise designs on the statistical precision of the parameters of the econometric model to be estimated. Such designs necessarily result in correlation between attribute levels as soon as non-zero priors are used to calibrate them. The loss in statistical efficiency as a consequence of the chosen design approach was considered to be a price worth paying for the additional assurance that could potentially be afforded by the ability to generate meaningful simple descriptive cross-tables of statistics from the choice data.

2.7 Mainstage survey administration

This section summarises the approach taken for the administration of the quantitative survey of Amazon and Deliveroo customers.

2.7.1. Sampling

The sample frame was formed by customer data provided by the merger parties. Both merger parties were requested to provide an Excel data file containing all same-day grocery service customer orders [✂]. The data was then cleaned and subsequently deduped – within and between merger parties.

The following steps were followed:

1. Deletion of all records missing an email address and any records with non-valid email addresses

2. Removal of incomplete orders (undelivered)

3. De-duplication against the prior testing stages (depth interviews, cognitive interviews and pilot survey)

4. Records were de-duped between the merger parties, using email address. Due to the much lower response rate received for Deliveroo customers at the pilot stage, all duplicates were assigned to the Deliveroo sample and removed from Amazon

5. Within party, where duplicates of customer email address appeared, deletion of the oldest order

6. For Amazon, exclusion of records where more than half of the order value was made up of non-grocery items

The sample sizes after cleaning and de-duping were 22,357 records for Amazon and 21,951 records for Deliveroo.

2.7.2. Survey invitations

All 44,308 customers were invited to participate in the online survey. Customers were emailed a survey link and customers with a valid mobile phone number were also sent an SMS invitation in addition to the email invitation.

Customers were only able to complete the survey once but were able to access the survey either via the email or SMS invitation and could switch from one to the other without losing any already completed questions.

All participants were offered a £5 voucher for completing the survey. The GiftPay voucher was redeemable via a range of high-street and online stores.

The email invitation was sent on 12th March 2020. The analysis and findings presented in this report is based on all completed surveys by 9am on 18th March (1,799 Amazon and 1,573 Deliveroo).

The survey remained open until 27th March 2020. In total, 1,886 Amazon customers and 1,665 Deliveroo customers completed the survey. 95% of completed surveys were therefore included in the analysis.

The timing of the research and survey fieldwork, and its proximity to the COVID-19 outbreak, should be noted. The customer sample was selected based on orders [✂]. This was prior to widespread cases of COVID-19 being recorded in the UK; the earliest documented transmission within the UK appeared on 28 February 2020. No social distancing guidelines were introduced in the UK until 16th March. It is therefore unlikely that the customer orders included in the survey sample would have been particularly different from typical OCG use prior to the COVID-19 outbreak.

In terms of any impact on survey responses, survey invitations were sent on 12th March, one day after the World Health Organisation declared the COVID-19 outbreak a pandemic and when the UK risk level was raised from moderate to high. However, most of the fieldwork period was completed before widespread social change was seen as a result of COVID-19. The fieldwork period on which the analysis is based ended at 9am on 18th March, with 64% of the survey responses coming before the 16th when social distancing guidelines were first introduced.

It cannot be discounted that the context around COVID-19 had some effect on the way in which customers responded to the survey. However, less than 1% of participants made any reference to COVID-19 or social distancing in their responses, indicating that it did not have a significant impact and therefore that the results can be considered as valid.

2.7.3. Survey response rates

The survey response rate was 7.6% overall, as shown in Table 3. These figures relate to the dataset on which the survey findings are based i.e. the survey fieldwork period prior to the cut-off point of 9am on 18th March. The response rate can be deemed to be reasonable and representing a robust measure of customer attitudes and behaviours. The confidence interval that applies for each merger party survey sample is +/-2.2% for Amazon and +/-2.4% for Deliveroo.

Table 3: Survey response rates

Merger Party	Sent the invitation	Completed survey	Response rate (excl. bouncebacks)
Amazon	22,357	1,799	8.0%
Deliveroo	21,951	1,573	7.2%
Total	**44,308**	**3,372**	**7.6%**

2.8 Survey weighting

The mainstage survey data was weighted – within merger party - to be representative of the profile of customers using the OCG service [✂] that the sample was selected.

Weights were applied on order value, delivery charge, time of order and London/non-London to correct for under or over representing of the population of customers of interest and therefore provide a representative sample of the parties' customer base from the given point in time. Full details of the weighting approach are set out in Appendix E.

3 Customer OCG Behaviour

Summary

The typical shopping missions are quite different between the two parties. Amazon customers tend to use it for general groceries, whereas for Deliveroo it is used predominantly for impulse/indulgence buys.

Most Deliveroo customers buy only a small proportion of their groceries via the offer. In contrast, almost half of Amazon customers buy half or more of their groceries from Prime Now. Looking at the size of order, Deliveroo customers make smaller orders than Amazon customers and are typically expecting very fast delivery (90% require within 1 hour) to consume the items straight away. On average, Amazon customers require a slower same-day service, often not consuming the items the same day.

However, there is a degree of overlap between the customer bases of the parties; 20% of Amazon customers have purchased OCG via Deliveroo and 27% of Deliveroo customers have purchased same-day groceries using Amazon Prime.

Speed of delivery is the main reason that both sets of customers give for using the merger party's offer. Amazon customers place more emphasis on reliable delivery times and ability to book a scheduled delivery slot. Deliveroo customers place more emphasis than Amazon customers on late night delivery and availability of the service in their area.

A wider range of products being on offer would encourage greater use, particularly for Amazon customers. Amazon customers place slightly more emphasis on lower item prices and free, or lower, delivery charges.

A large majority of customers report that they would not purchase via OCG if their provider stopped offering the service, with the most common action being to purchase in-store. 20% of Deliveroo customers and 11% of Amazon customers would order OCG from another provider.

The proportion of respondents stating that the merger party would be their next best alternative was low; of those who would divert to another OCG provider, a strong majority would not select the alternative merger party. Just 1.6% of Amazon customers would divert to Deliveroo and 4.9% of Deliveroo customers would divert to Amazon. However reported diversion to other providers is similarly limited.

3.1 Introduction

This section presents the findings from the non-conjoint elements of the online survey. This section focuses on the non-conjoint results, looking at the sample structure, reasons customers use the services of the merger parties, the frequency of usage and how OCG use sits within other shopping behaviour. Finally, it ends with diversion behaviour if the OCG offers were to cease being available. The results presented in this section are based on weighted data and the base sizes refer to the unweighted number of responses.

3.2 Sample structure

Of the 3,372 participants who completed the survey, 53.3% took part as an Amazon customer (1,799) and 46.6% (1,573) took part as a Deliveroo customer.

Compared to Amazon customers, Deliveroo customers are younger (mean age of 33 vs 39 for Amazon), more likely to be female and [✂], as can be seen in Figure 2[4]

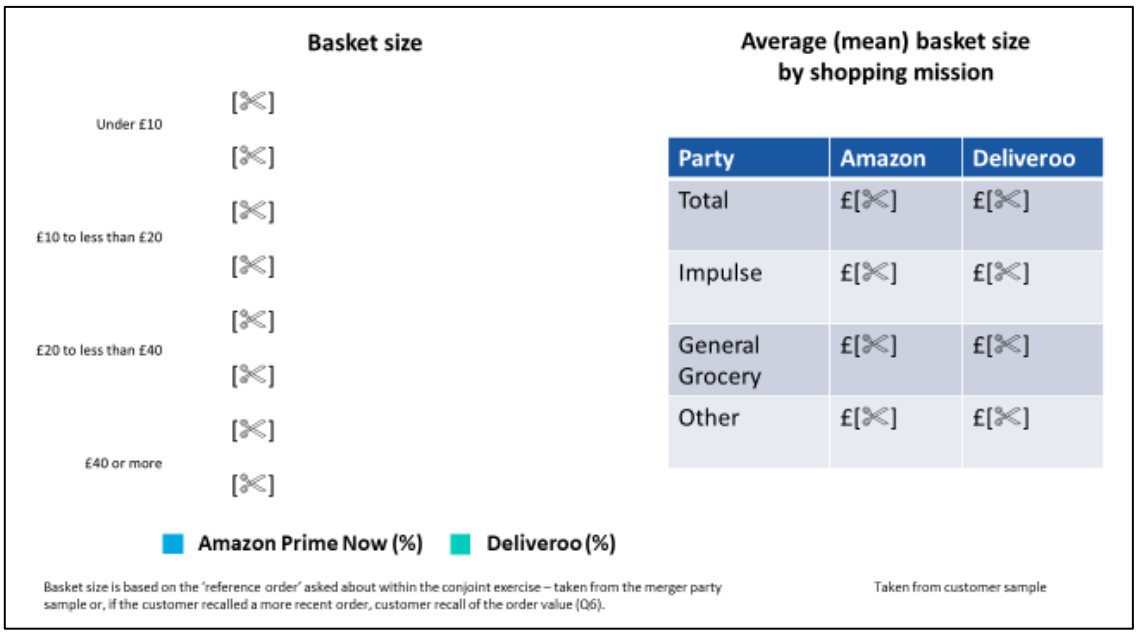
Figure 2: Sample demographic profile

Base: Amazon: n=1,799; Deliveroo: n=1,573

When considering basket sizes (in terms of cost of basket), the two groups show some significant differences. Amazon customers' average basket size is more than twice as large as that of Deliveroo customers. The smallest difference in basket size occurs in impulse buys, whereas general grocery shops see the biggest difference in basket size, as Figure 3 demonstrates.[5]

[4] Only statistically significant differences are highlighted in this report.
[5] The type of shopping mission (e.g. impulse, general grocery etc) is discussed in section 3.1.2

Figure 3: Basket sizes



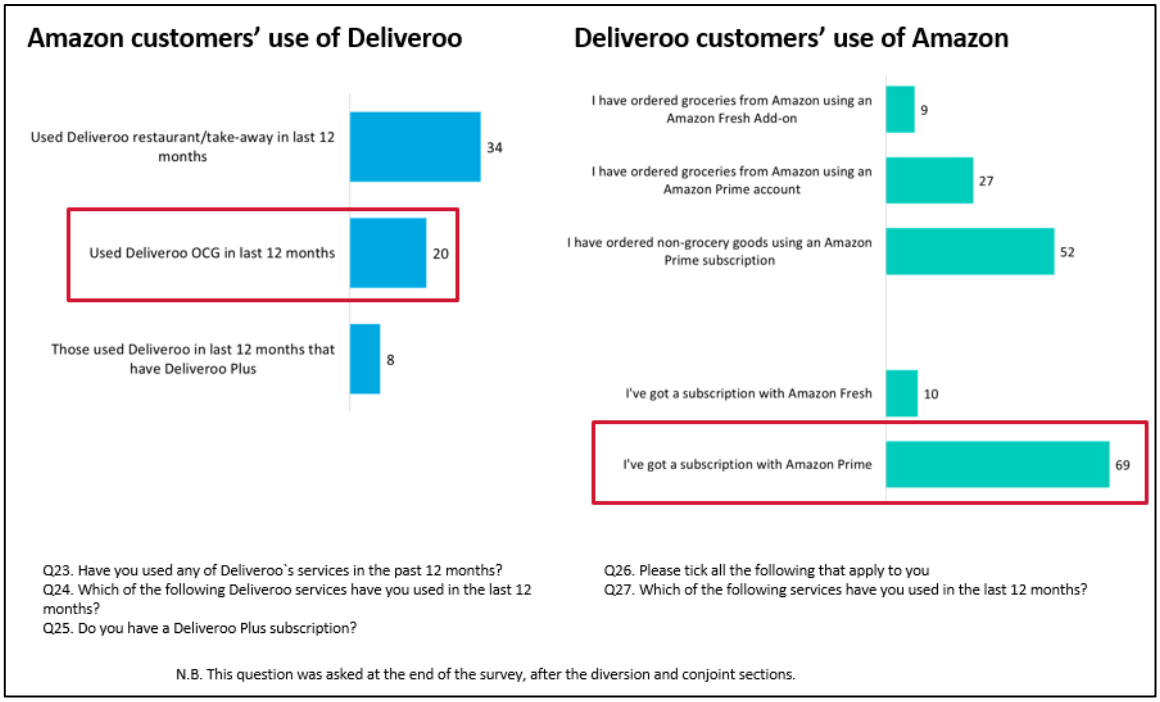
Average (mean) basket size by shopping mission

Party	Amazon	Deliveroo
Total	£[✂]	£[✂]
Impulse	£[✂]	£[✂]
General Grocery	£[✂]	£[✂]
Other	£[✂]	£[✂]

Base: Amazon: n=1,799; Deliveroo: n=1,573

Customers report a considerable level of overlap between use of the two merger parties. As Figure 4 shows, 20% of Amazon Prime Now grocery customers have bought groceries via Deliveroo and almost 70% of Deliveroo customers have a Prime subscription and over a quarter have ordered groceries via Prime. However, it is likely that some customers may have in fact been referring to use of the other merger party for non-OCG orders.

Figure 4: Merger party customer overlap



Base: Amazon: n=1,799; Deliveroo: n=1,573

It should be noted that, although there is some overlap between the customer bases of the merger parties, participants were asked about the merger party that they were

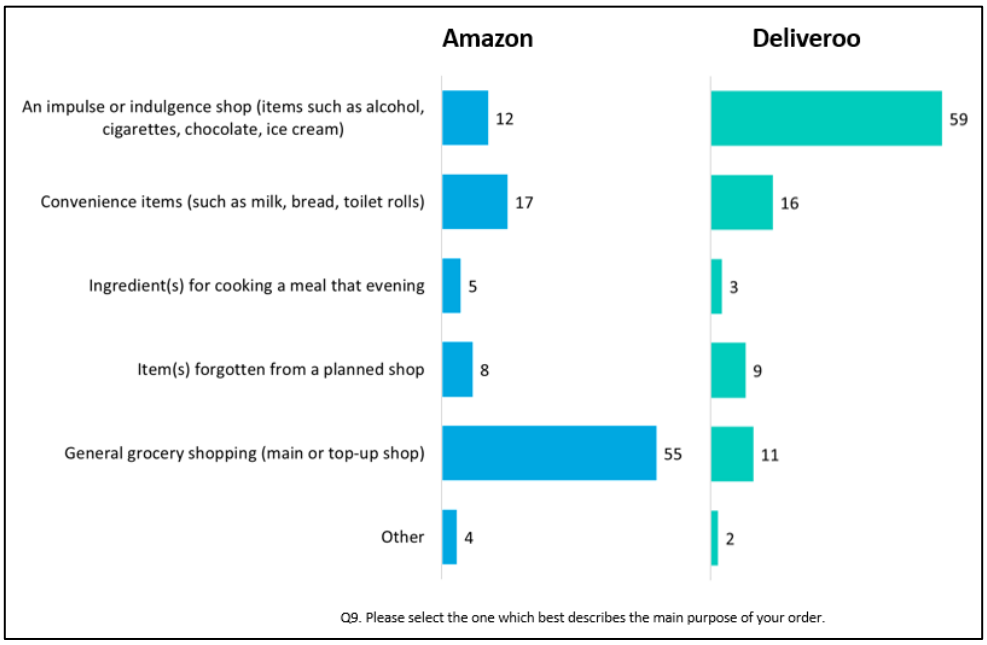
recorded as being a customer of in the provided samples. The de-duplication process undertaken is outlined in Section 2.7.1.

3.3 Shopping mission

As illustrated in Figure 5, Amazon and Deliveroo customers have different reasons for using the respective OCG services. Whilst over half of Amazon customers use Amazon's OCG service as their main or top-up grocery shop, only 12% use it for an impulse/indulgence purchase. Deliveroo customers, on the other hand, show the inverse usage pattern. 59% make an impulse/indulgence purchase and for just 11% it is a main or top up grocery shop.

Convenience items, ingredients for cooking a meal that evening and items forgotten from a planned shop see the closest similarities between the two groups.

Figure 5: Shopping mission



Base: Amazon: n=1,799; Deliveroo: n=1,573

There are some significant differences across the following subgroups of the sample:

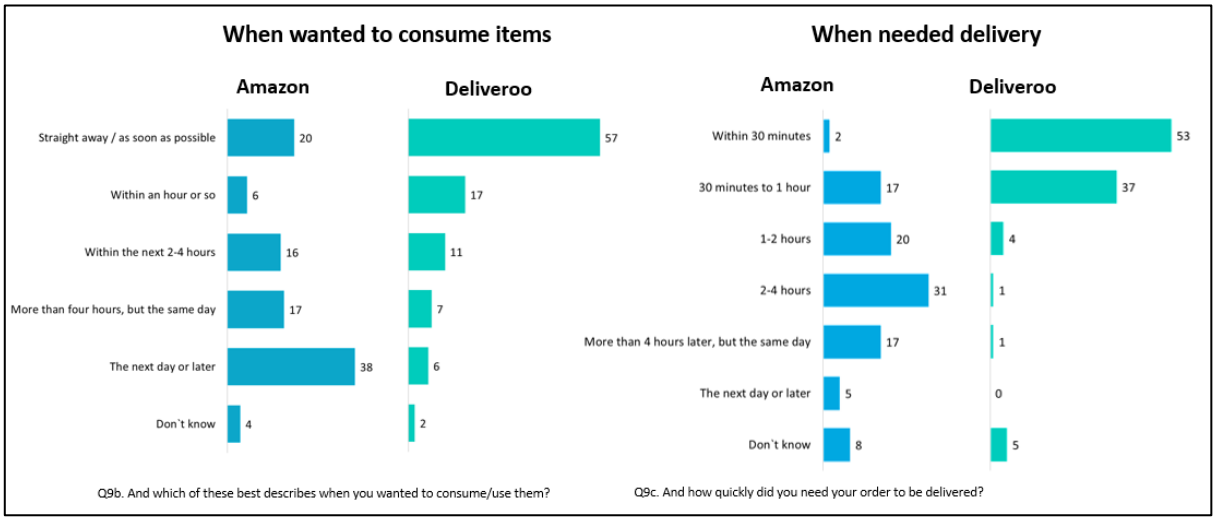
- Deliveroo Plus customers are more likely to use the party's OCG service for impulse purchases (61% vs 55%)
- Male Amazon customers are more inclined to use the party's OCG service for impulse buys (15% vs 8% female)
- London Amazon customers are more likely to use as a general grocery shop (58% vs 53% non-London)

There is also a significant difference between the two groups when considering when customers want to consume the items they purchased, as Figure 6 shows. Deliveroo customers have a much more immediate service need; in line with the 'indulgence' purchase, three in ten Deliveroo customers want to consume the items 'straight away'

and over half (53%) request a delivery within 30 minutes. 90% of all Deliveroo customers required the items within 1 hour.

In contrast to this, Amazon customers are more likely to consume the items on a different day to when it is delivered, with 38% stating this. Just 20% say they wanted to consume it 'straight away' and fewer than 20% want the items within 60 minutes. Over half (53%) are happy to wait more than 2 hours (vs. 2% Deliveroo customers). 5% of Amazon customers say they do not need the items to be delivered until the following day or later.

Figure 6: Consumption and delivery wants and needs



Base: Amazon: n=1,799; Deliveroo: n=1,573

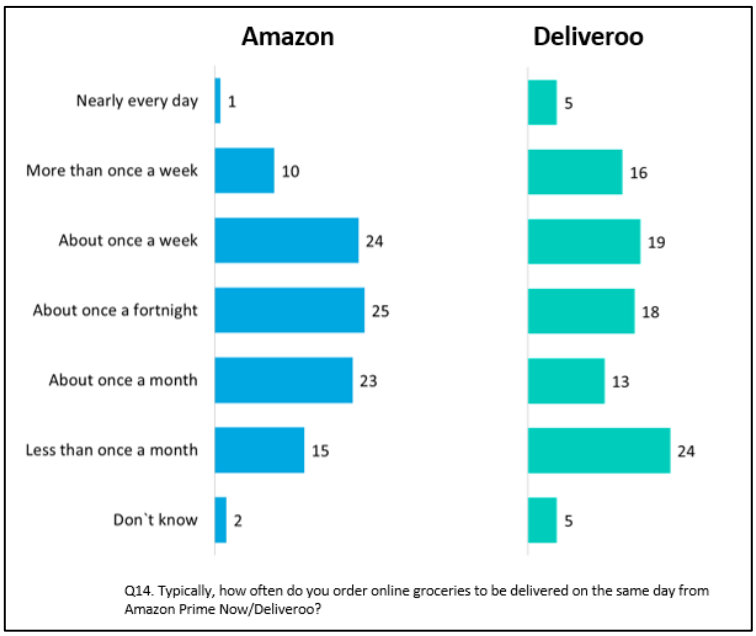
3.4 Frequency of use and shopping habits

When considering the frequency of OCG use and where these particular grocery shops sit within customers' overall grocery shopping habits, there are further differences in shopping behaviour between the two groups of customers.

Figure 7 shows the difference in frequency of OCG use. One in five (21%) Deliveroo customers use OCG more than once a week compared to significantly fewer Amazon customers (11%). At the same time, there is a higher proportion of Deliveroo customers that use the service on a more infrequent basis; 24% of Deliveroo customers use it less than monthly, compared to only 15% of Amazon customers.

Deliveroo Plus customers use it more frequently than non-Plus customers; 31% of Plus customers use it more than once a week vs. 17% non-Plus users. It should be noted that, although the questionnaire was very clear in being about grocery items, it is possible that some customers were referring to non-OCG use (e.g. restaurant takeaway delivery or non-grocery items).

Figure 7: Frequency of OCG use



Base: Amazon: n=1,799; Deliveroo: n=1,573

OCG forms a much greater part of Amazon customers' grocery shopping with the party than for Deliveroo. Whilst OCG does not constitute a large part of Deliveroo customers' overall grocery shopping, with only 7% ordering half or more of their groceries through it, 42% of Amazon customers get half or more of their groceries from OCG, as can be seen in Figure 8.

Figure 8: Shopping habits

Base: Amazon: n=1,799; Deliveroo: n=1,573

3.5 Reasons for using OCG

In order to find out why customers use OCG, they were asked to choose from a list of factors and in the event that they chose more than one reason, they were asked to specify the single main reason for using the service.

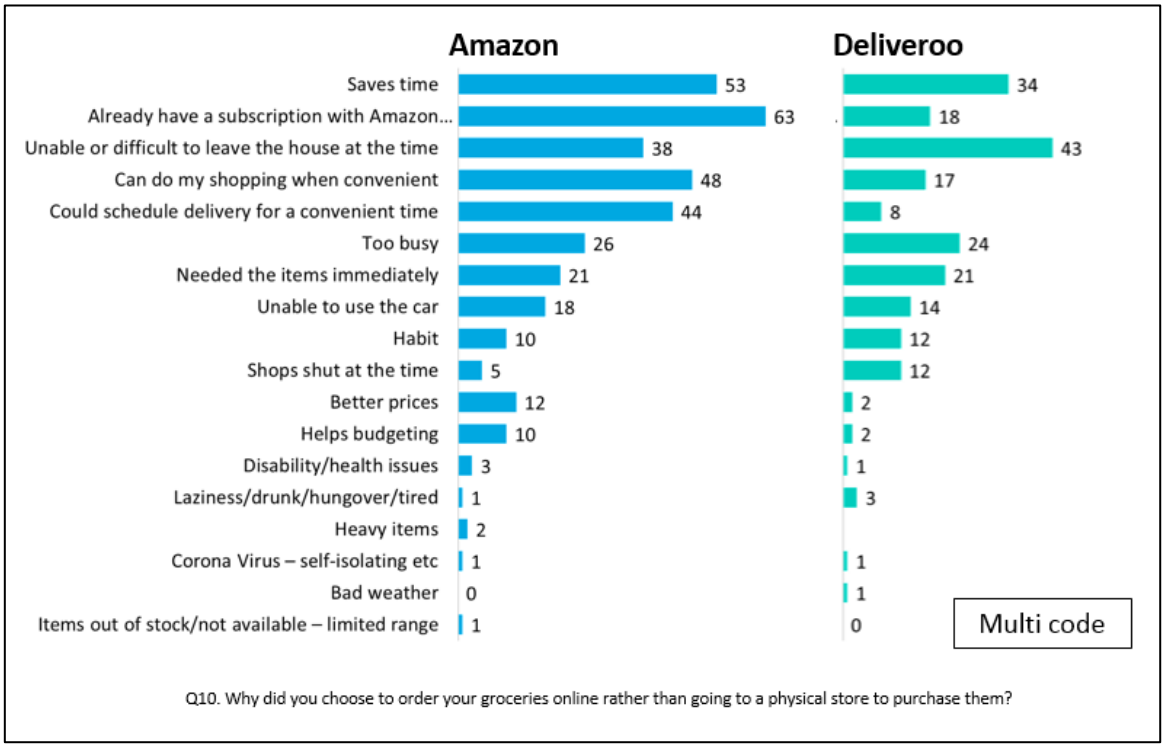
For both parties, the multi-response version of the question reveals a range of reasons for ordering online, as can be seen in Figure 9. Key reasons for OCG shopping are that it saves time, that customers are unable to leave the home to use a physical store and that it allows shopping at a convenient time. However, the most frequently named reasons differ between the two merger parties.

The most common reason Amazon customers give for ordering online is the already existing subscription with Prime, followed by the time saving factor and the fact that customers can do their shopping when convenient. A high proportion (44%) are also attracted to the service because they can schedule delivery at convenient times.

In contrast, the most common reason for Deliveroo customers is that they are unable to leave the house, which is also followed by the time saving aspect. The third most frequently listed reason is the fact that customers are too busy.

Overall, Amazon customers give a greater number of reasons. Whilst "needed the items immediately" is the only reason listed by the same proportion of customer groups, the only reasons that Deliveroo customers are more likely to give than Amazon customers are 'habit', the shops being shut and laziness/drunkenness/tiredness.

Figure 9: General reasons for using OCG



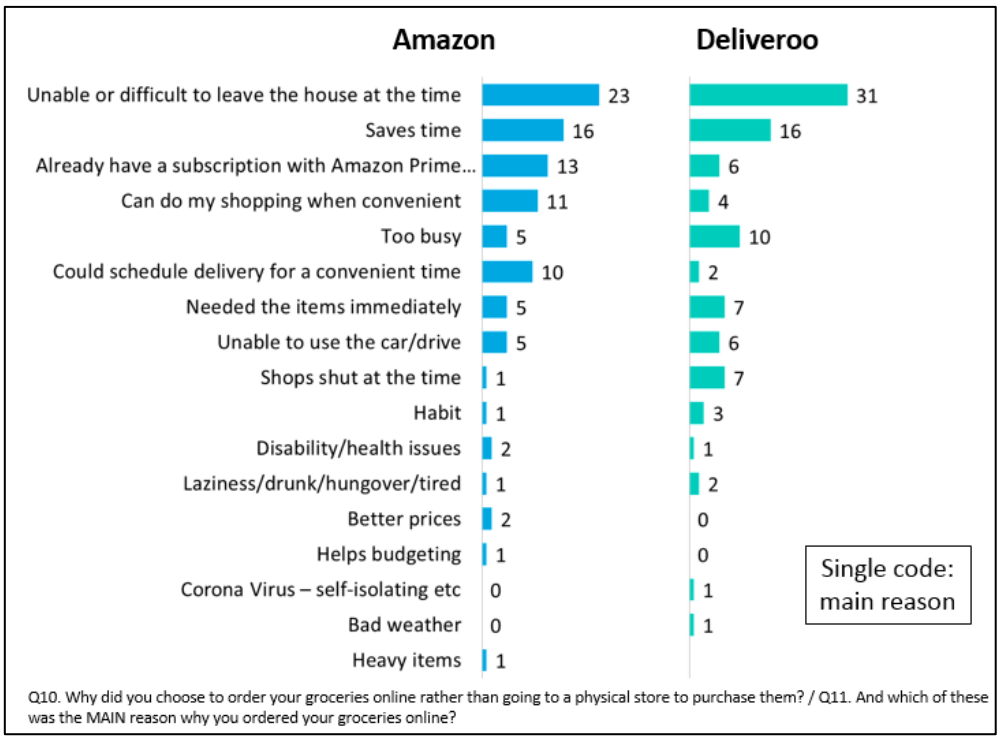
Base: Amazon: n=1,799; Deliveroo: n=1,573

When considering the single most important reason for ordering groceries online, Deliveroo customers are more likely to mention barriers preventing use of physical stores while Amazon customers cite convenience, scheduling and Prime membership.

Figure 10 shows that the overriding single reason for customers of both parties ordering online is that they find it difficult to leave the house. This is followed by the fact it saves time. These two reasons are named by 39% of Amazon customers and 47% of Deliveroo customers, but Amazon customers are significantly less like to say 'unable to leave the house at the time' than Deliveroo customers (23% vs 31%).

Amazon customers are more likely to cite subscription (13% vs 6%), convenience (11% vs 4%) and convenient delivery times (10% vs 2%) and Deliveroo customers are more likely to be too busy (10% vs 5%) and the shops being shut (7% vs 1%).

Figure 10: Main reason for using OCG



Base: Amazon: n=1,799; Deliveroo: n=1,573

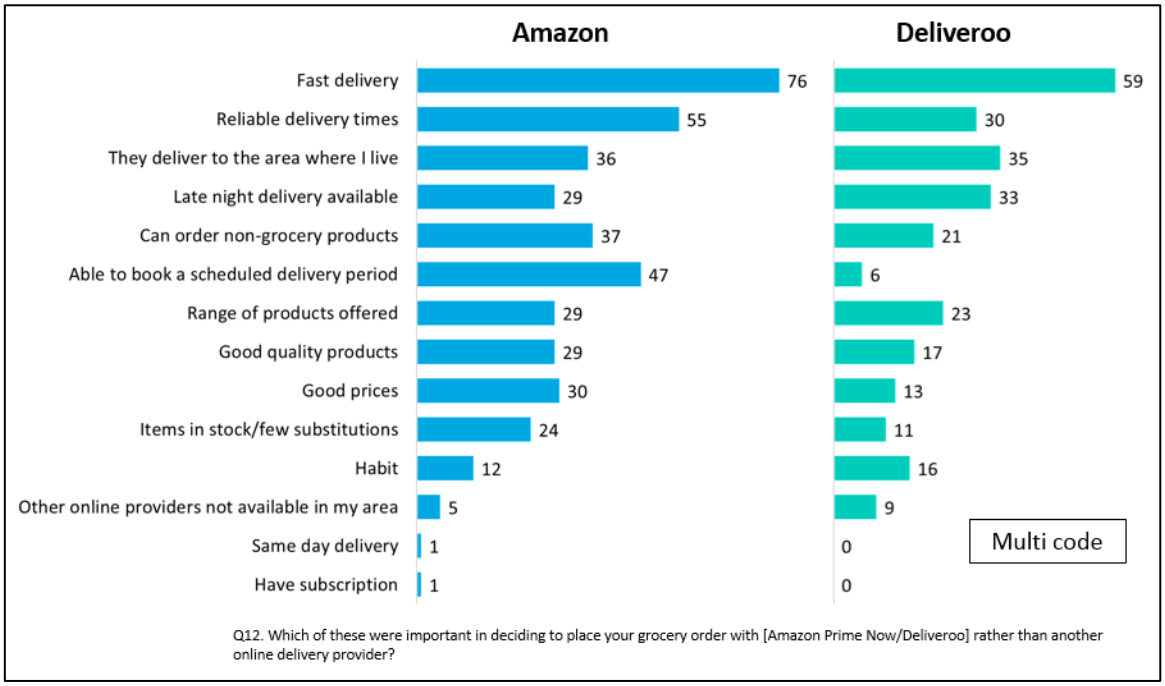
3.6 Reasons for using merger party OCG offerings

Subsequently, customers were asked why they chose to use the merger party rather than an alternative provider. The customers were asked to first choose from a list of factors and in case they chose more than one code, they were asked again to specify the single most important reason for using the service.

As can be seen in Figure 11, fast delivery is the most common motivation for use of both Amazon and Deliveroo. However, less frequently listed reasons differ between the two

customer groups. Whilst the next most common reasons for Amazon customers are reliable delivery times (55% vs. 30% Deliveroo) and ability to book a scheduled delivery slot (47% vs. 6% Deliveroo), for Deliveroo customers, the 2nd and 3rd reasons are that they deliver locally (35% vs 36% Amazon) and late-night delivery options (33% vs 29% Amazon).

Figure 11: Reasons for using merger party



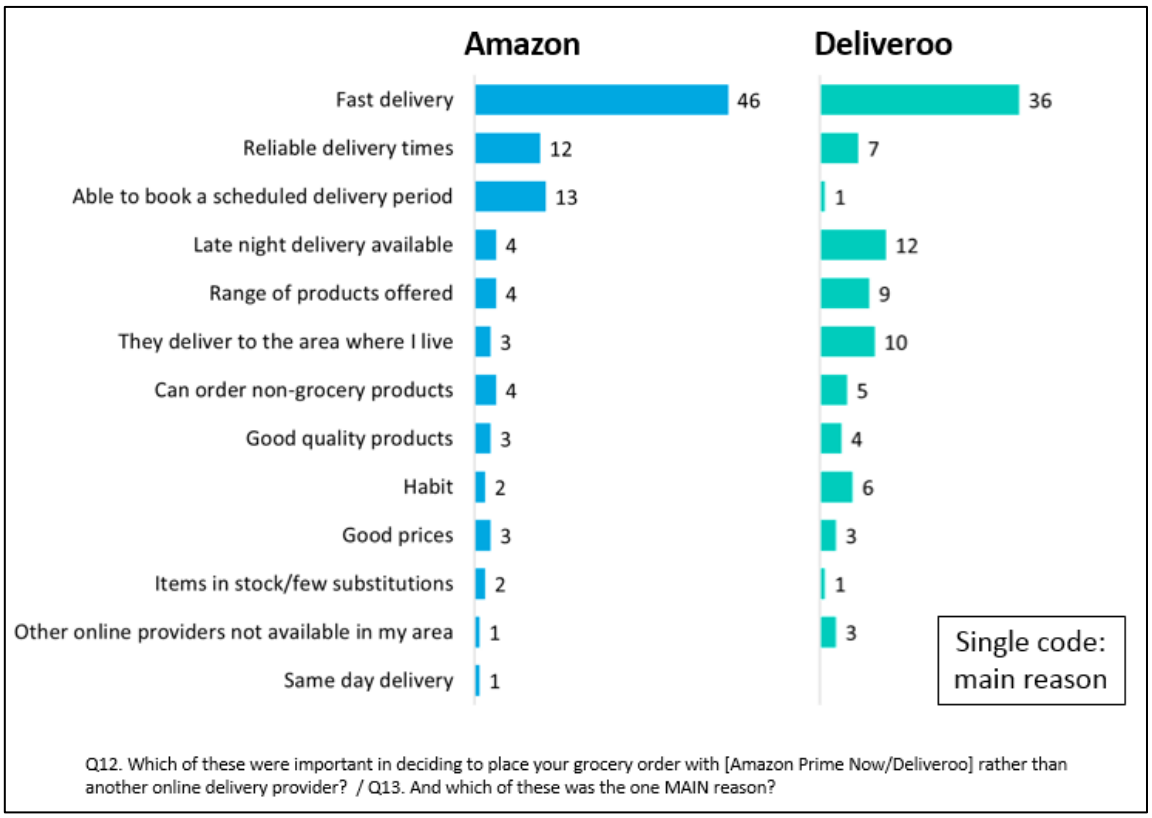
Base: Amazon: n=1,799; Deliveroo: n=1,573

Fast delivery is also the single strongest motivation for use; 46% of Amazon customers and 36% of Deliveroo customers select this. Speed of delivery is a particularly strong motivator for a number of subgroups:

- Amazon customers aged 35+ vs Amazon customers aged under 35 (48% vs 42%)
- Female Amazon customers vs male Amazon customers (51% vs 41%)
- Deliveroo Plus vs Deliveroo standard (41% vs 34%)
- Female Deliveroo customers vs male Deliveroo customers (39% vs 33%)

As shown in Figure 12, further down the list of reasons for choosing the service, the customer groups behave differently again. The second single most important factor for Amazon customers is being able to book a scheduled delivery period, followed by reliable delivery times (13% and 12%), whereas availability of late-night delivery and delivery to the area where customers live are the second and third most important reasons for Deliveroo customers (12% and 10%).

Figure 12: Main reason for using merger party

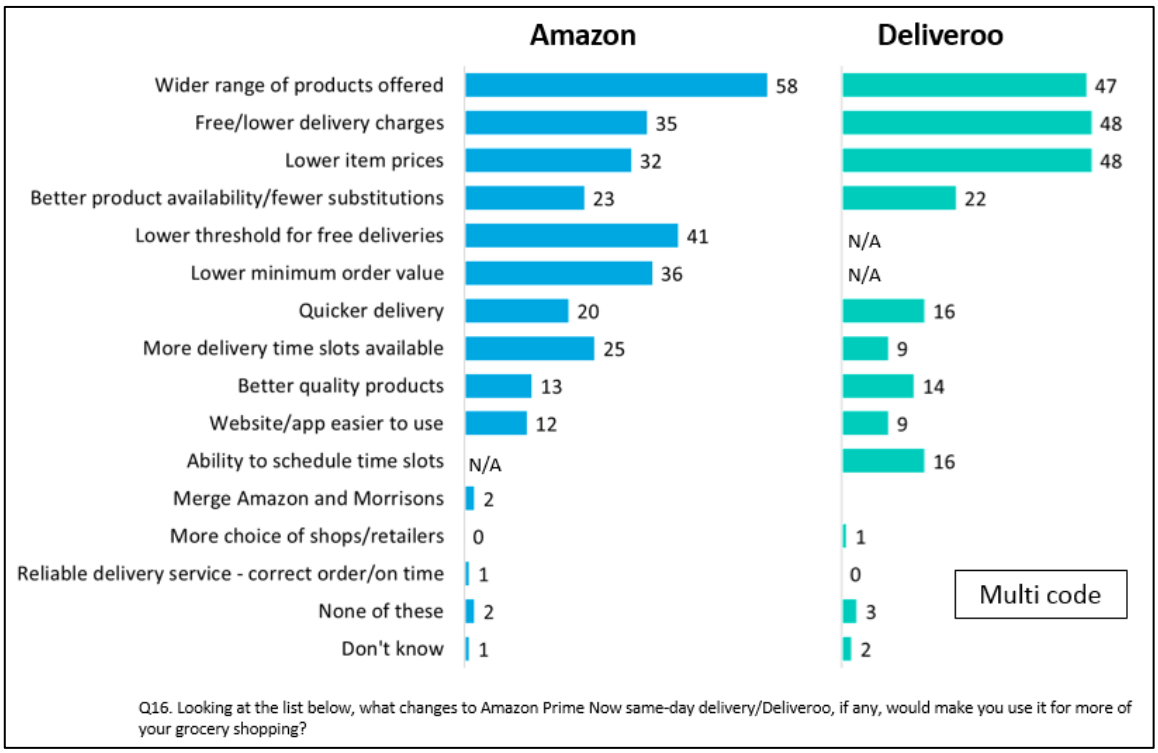


Base: Amazon: n=1,799; Deliveroo: n=1,573

3.7 Potential usage increase

When considering potential changes to the service that might increase use, Amazon and Deliveroo customers showed different preferences (see Figure 13). Amazon customers name a wider range of products (58%) and a lower threshold for free delivery (41%) as well as free/lower delivery charges (36%) as key reasons for increased use. In contrast to this, Deliveroo customers opt for free/lower delivery charges and lower item price (both 48%), followed by a wider range of products offered (47%).

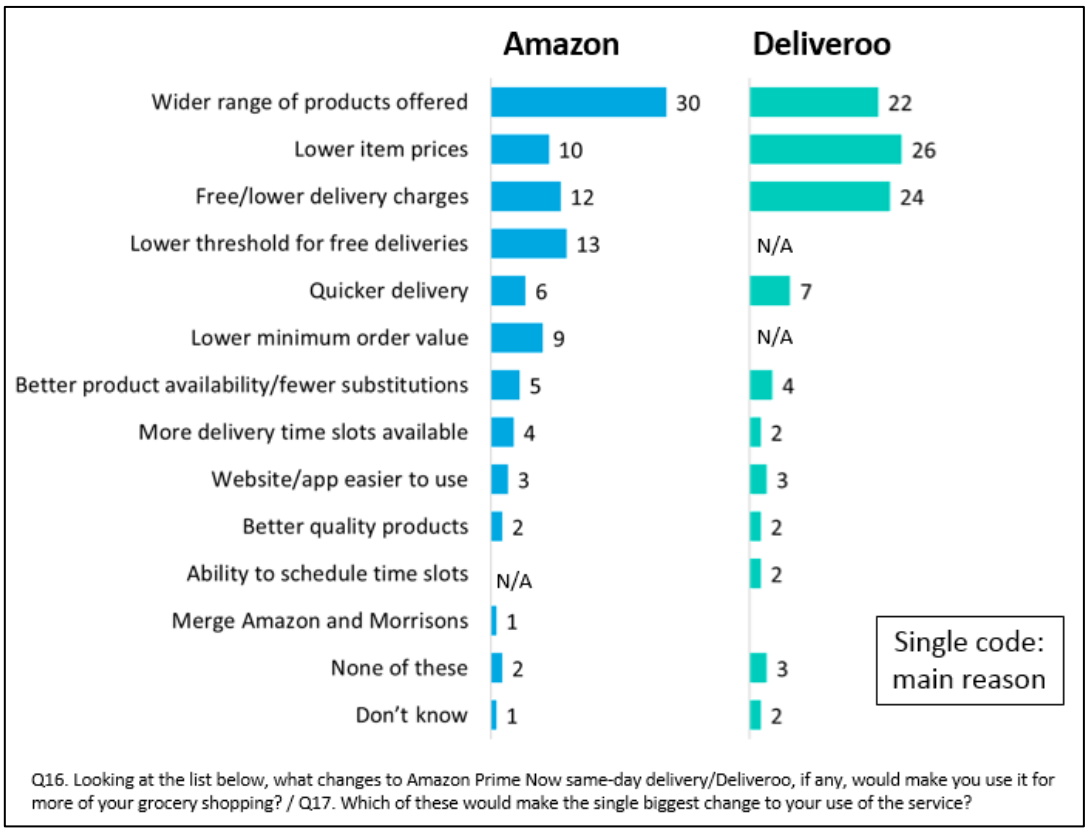
Figure 13: Potential usage increase



Base: Amazon: n=1,799; Deliveroo: n=1,573

When asked which reason would make the single biggest change to their use of the service, the two groups also show significant differences in their answers. Whilst Amazon customers see a wider range of products as a key driver of increased use (30%), this is the third most common reason for Deliveroo customers (22%). The latter group favours lower item prices (26%) and free/lower delivery charges (24%) - see Figure 14.

Figure 14: Main reason for potential usage increase



Base: Amazon: n=1,799; Deliveroo: n=1,573

3.8 Diversion

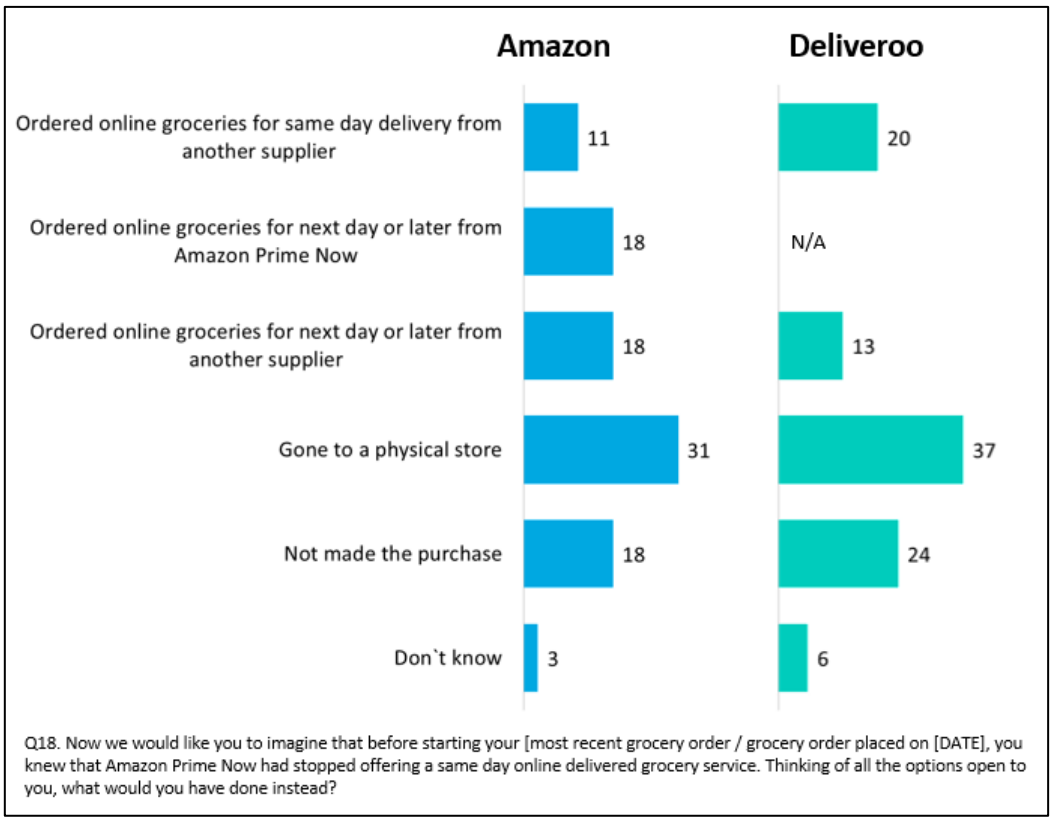
The final questions prior to the conjoint exercise asked customers about their hypothetical behaviour should the OCG service provided by the merger party cease to exist. The vast majority of both Amazon and Deliveroo customers (86% Amazon and 74% Deliveroo) report they would not purchase via OCG if their provider stopped offering the service.

A number of groups are more likely to divert to another OCG provider:

- Non-impulse missions (Amazon 12% 'other' shopping missions vs 6% impulse; Deliveroo 24% vs. 19%)
- Higher frequency of use (Amazon 17% >weekly vs. 11% less frequent. Deliveroo 24% >monthly vs. 15% monthly or less frequent).
- London-based Amazon customers vs non-London Amazon customers (15% vs 9%).

In general, as Figure 15 shows, the most common action taken would be to use a physical store instead – 31 % of Amazon and 37% of Deliveroo customers favour this option. This is followed by the decision to not make the purchase at all (18% Amazon and 24% Deliveroo customers) and accepting a delay in delivery.

Figure 15: Diversion



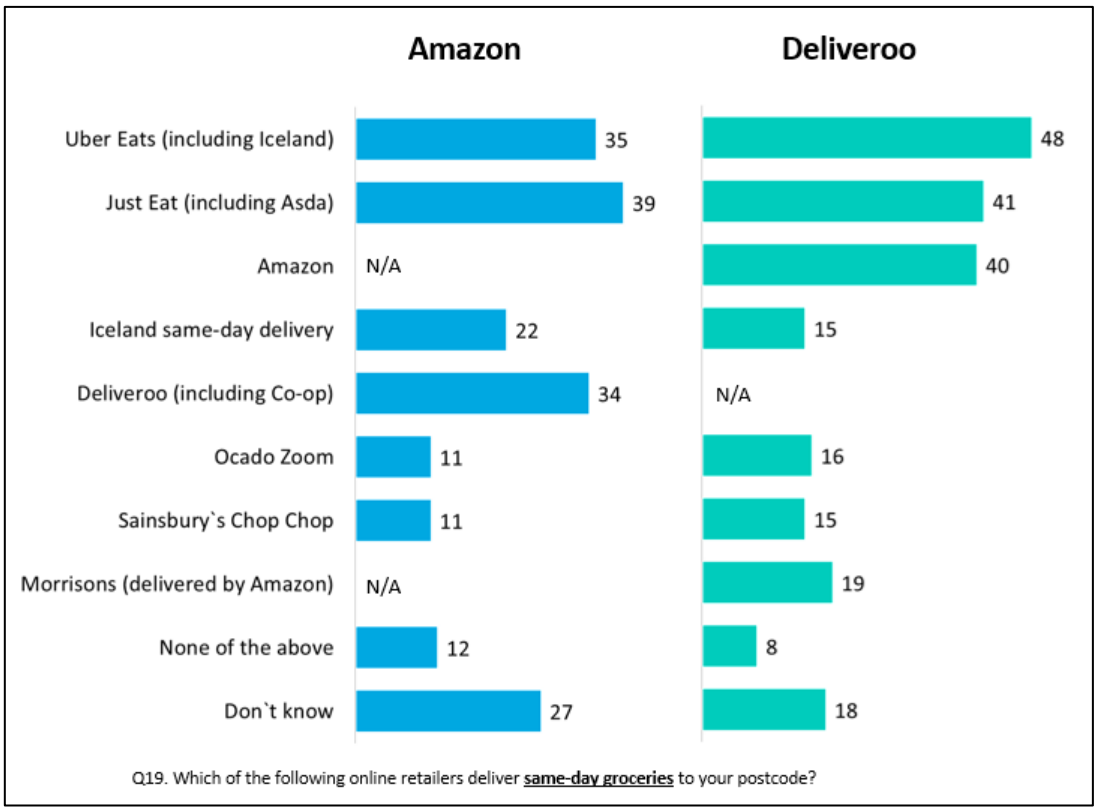
Base: Amazon: n=1,799; Deliveroo: n=1,573

A high proportion of customers report alternative OCG providers being available in their local area (61% of Amazon customers, compared to 74% of Deliveroo customers). It should be noted that these results are likely to have been influenced by awareness of non-grocery services of the providers concerned. As Figure 16 shows, a relatively high proportion of customers don't know if alternative OCG suppliers are available – 27% of Amazon customers and 18% of Deliveroo customers.

When looking at availability of the other merger party, 34% of Amazon customers report Deliveroo being available in their area, while 40% of Deliveroo customers believe Amazon is available.

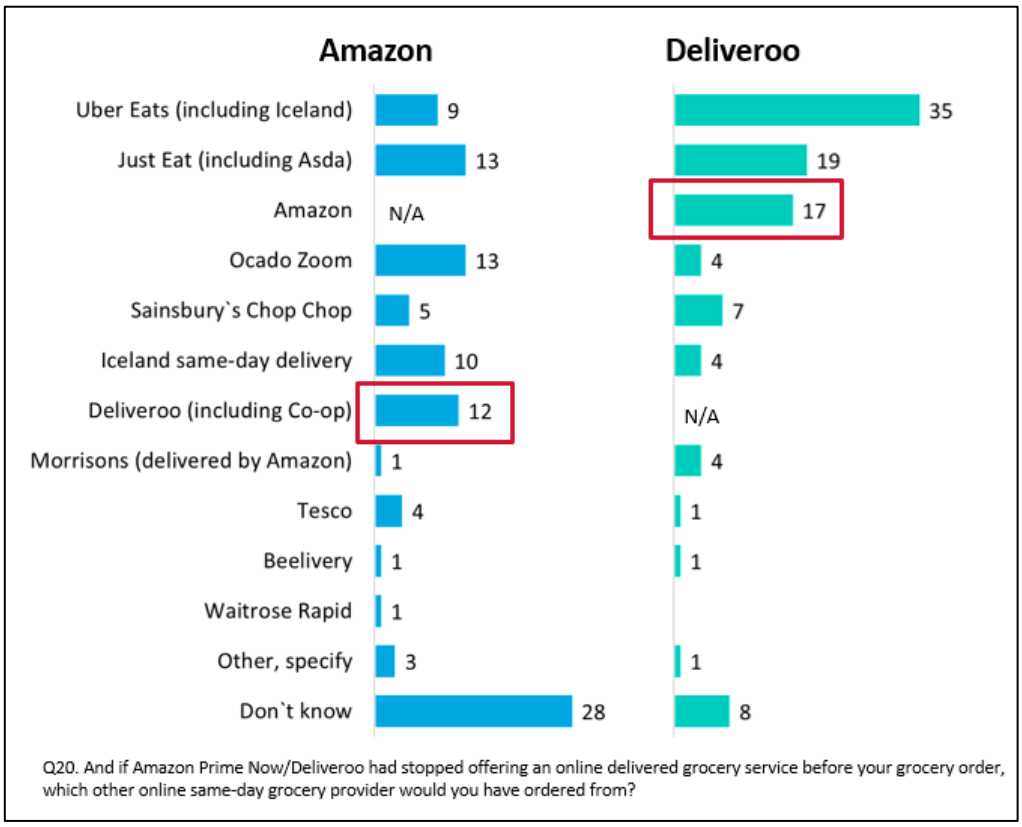
Reported transfer to the other merger party is limited. Of the 11% of Amazon and 20% of Deliveroo customers that would divert to an alternative OCG provider, 12% of Amazon customers would use Deliveroo and 17% Deliveroo customers would use Amazon. Figure 17 shows that the provider most Deliveroo customers would switch to is Uber Eats (35%), whilst most Amazon customers would switch to Just Eat or Ocado Zoom (both 13%).

Figure 16: OCG alternatives



Base: Amazon: n=1,799; Deliveroo: n=1,573

Figure 17: Hypothetical future OCG use



Base: All that would order from another supplier (189 Amazon, 304 Deliveroo)

Overall, the diversion ratios range from 1.6% for Amazon to Deliveroo to 4.9% for Deliveroo to Amazon (both spend weighted). A more detailed breakdown is shown in Table 4.

Table 4: Diversion ratios

	Non-spend weighted	Spend weighted
Amazon to Deliveroo	1.8%	1.6%
Deliveroo to Amazon	4.8%	4.9%

4 Conjoint Analysis and Findings

4.1 Introduction

The choice data obtained from the conjoint exercise were analysed via the following four stages:

- Descriptive analysis
- Econometric analysis
- Trade-off analysis
- Scenario simulation

The remainder of this section presents our analysis and findings across each of these stages.

4.2 Descriptive analysis

A descriptive analysis of choice behaviour is a useful exercise to undertake prior to the main econometric analysis as a means of understanding the choice behaviour of participants directly without applying any modelling assumptions. This section summarizes the choices made by participants in the stated preference exercise, looking in particular at the proportions of choices made for each of the four options presented in the questions and the proportions of choices made at different levels of the attributes. We focus on the first seven choices in this analysis as these contained the main price levels of interest for the main results, with the eighth question included solely to test for the presence of non-linearity around increases/decreases in price relative to the base order price.

First, Table 5 shows the weighted proportions of all choices for the four alternatives. This shows that most choices were OCG options but a significant proportion chose outside options.

Table 5: Proportions of choices for the four alternatives

Options		Amazon	Deliveroo
A	(OCG)	28%	29%
B	(OCG)	31%	32%
C	I would buy from a shop or order elsewhere for next day or later delivery)	35%	28%
D	I would not buy at all	7%	11%
Total		**100%**	**100%**

Base total choices for Amazon customers:1,799*7=12,593 and for Deliveroo customers=1573*7=11,011.

An important diagnostic in the analysis of choice data is the prevalence of 'non-trading behaviour'. Always choosing the same alternative can be indicative of not engaging with the survey in cases where the alternatives are not labelled, or a sign that the attribute level differences were not significant enough to influence choices, which could cause indifference between options. In any case, a large number of non-traders implies a poor-quality dataset for analysis.

As shown in Table 6 very few participants always chose the same option across all choice occasions. These results suggest no cause for concern with regard to participants speeding through choosing the same option each time

Table 6: Proportion of customers always choosing the same alternative

Measure	Amazon	Deliveroo	Total
Always chose Option A (#)	0.7%	1.0%	0.8%
Always chose Option B (#)	1.7%	2.4%	2.0%
Always chose Option C (#)	4.9%	3.2%	4.1%
Always chose Option D (#)	0.7%	1.0%	0.8%

Base: Amazon customers=1,799; Deliveroo customers=1,573

Turning to the choice proportions by attribute levels, Table 7 first shows the proportions of choices for Options A and B at different levels of prices. This table includes only choices 1-7, whereas the following table focuses only on the 8th choice. As discussed in Section 2.6, choices 1-7 included price increases for Amazon customers and price decreases for Deliveroo customers. The 8th choice, by contrast, included price decreases for Amazon customers and price increases for Deliveroo customers

In Table 7, and in Table 9 to Table 11, the proportions all average to 30% in the case of Amazon and to 31% in the case of Deliveroo. These are consistent with Table 5 in terms of the proportions choosing Options A and B. In Table 8, the base is different and so the average proportions, as well as the proportions choosing the base price level, will differ to those in Table 7.

Table 7 suggests that Amazon customers were more price sensitive than Deliveroo customers over the core range of price levels shown to each customer group, as indicated by the larger range in '% chosen' across the price levels shown. Results for Deliveroo customers do not display the anticipated monotonic fall in choice proportions at higher price levels, which indicates a low degree of price sensitivity within this range.

It is important to acknowledge that the range of levels differed between the two customer groups, with Amazon customers seeing price increases and Deliveroo customers seeing price decreases for the core part of the conjoint exercise. Aside from any differences between Amazon and Deliveroo customers, the difference in price sensitivities observed in Table 7 could be due to this difference in levels shown. This would be consistent with a well-established result from the literature, emanating from the theory of reference-dependent preferences (Tversky and Kahneman, 1991), that losses are valued more highly than gains, in which case price increases would be expected to be valued more highly than price decreases of a similar amount.

Table 8 tests this hypothesis by showing results from the 8th choice. Here, there is evidence of greater price sensitivity for Deliveroo customers and lower sensitivity for Amazon customers, consistent with the hypothesis that price sensitivity is greater when prices are increasing than when they are decreasing. However, taking the two tables together, the results suggest that Amazon customers were indeed more price sensitive than Deliveroo customers as the range of choice proportions from lowest to highest price level was greater for Amazon customers than for Deliveroo customers over comparable price changes.

Table 7: Proportions choosing Option A or B by prices and customer group (Choices 1-7)

Amazon		Deliveroo	
Price level	**% chosen**	**Price level**	**% chosen**
Base	40%	50% less than base	30%
15% more than base	34%	43% less than base	32%
30% more than base	29%	35% less than base	31%
50% more than base	26%	25% less than base	32%
100% more than base	19%	Base	29%

Table 8: Proportions choosing Option A or B by prices and customer group (Choice 8 only)

Amazon		Deliveroo	
Price level	**% chosen**	**Price level**	**% chosen**
50% less than base	35%	Base	31%
43% less than base	39%	15% more than base	29%
35% less than base	38%	30% more than base	29%
25% less than base	35%	50% more than base	25%
Base	33%	100% more than base	24%

Table 9 shows the proportions of choices by levels of delivery charges. As the table shows, both sets of customers were very sensitive to delivery charges. Deliveroo customers were particularly sensitive to the Free delivery option, while Amazon customers in particular were less sensitive to delivery charge when there was a free delivery charge threshold of £40.

Table 9: Proportions choosing Option A or B by delivery charges and customer types

Delivery charge levels	Amazon	Deliveroo
Free	41%	53%
£3.99	27%	35%
£5.99	18%	23%
£7.99	14%	18%
Free for orders of £40 or more (otherwise £3.99)	38%	33%
Free for orders of £40 or more (otherwise £5.99)	35%	29%
Free for orders of £40 or more (otherwise £7.99)	34%	27%

Table 10 shows choices by speed of delivery. Neither set of customers was very sensitive to delivery speed. The results here suggest that speed was not a dominant factor driving choices for either set of customers.

Table 10: Proportions choosing Option A or B by speed of delivery and customer types

Speed of delivery levels	Amazon	Deliveroo
Within 30 minutes	28%	33%
Within 1 hour	29%	32%
Within 2 hours	29%	31%
Between 2 and 4 hours, within a 30-minute window	31%	30%
Between 2 and 4 hours	32%	29%

Table 11 shows choices by the range of products/brands offered. Range was a driver of choices for both sets of customers, but more so for Amazon customers as indicated by the larger difference in choice proportions between 'Like at a supermarket' and 'Small range' levels.

Table 11: Proportions choosing Option A or B by range of shopping and customer types

Range levels	Amazon	Deliveroo
Small range	23%	28%
Like at a convenience store / corner shop	28%	31%
Like at a supermarket	38%	34%

The descriptive results presented above examined how choice depended on individual attributes without controlling for all other variables that affect choices. This analysis is useful as a means of understanding choice behaviour very directly. However, to obtain a more detailed understanding, an econometric analysis is required that models variables simultaneously, and thereby enables an examination of how each attribute impacts on choice while controlling for the levels of all other attributes.

4.3 Econometric analysis

4.3.1. Methodology

The objectives for the econometric analysis were to measure the drivers of OCG choice, examine the trade-offs between the attributes and model hypothetical market scenarios relevant to the Inquiry. Although distinct models are estimated for Amazon and Deliveroo samples, the modelling methodology adopted was the same in both cases.

In line with common practice for discrete choice modelling (see e.g. Ben-Akiva et al., 2019), our core approach is based on the Random Utility Model (Marschak, 1960). As such, each alternative is assumed to be associated with a utility value and survey participants are assumed to always choose the alternative that holds the maximum utility for them.

Formally, the utility, U, for a customer i for an OCG option j is assumed to consist of a systematic part, V (consisting of observable characteristics) and a random error, i.e.

$$U_{ij}=V_{ij}+\epsilon_{ij} \quad (1)$$

The systematic component of the utility, V_{ij}, is a function of the attribute levels for alternative j, q_j, and a set of parameters β.

$$V_{ij}=V(q_j,\beta) \quad (2)$$

The functional form for V was a matter for empirical testing and development. Our modelling strategy included the following steps:

- We began with a multinomial logit (MNL) specification, which assumes fixed, rather than individually varying, parameters. Each attribute entered the model via k-1 dummy variables, where k is the number of levels taken by the attribute in the design. One level was omitted for each attribute to serve as the base level against which the impact of each of the other levels was measured.

- We then estimated a model linear in price, delivery speed and delivery charge. This indicated only a small reduction in statistical fit in comparison with the first, less restricted, model, but with the benefit of a more parsimonious and intuitively reasonable specification.

- We explored models with interaction effects and identified two as being particularly important.

  - Firstly, an interaction between price and order value was tested and found to be significant. This interaction created a variable measuring price in monetary terms since the price attribute was measured as percentage deviations around the participant's order value. (See below for further discussion of the functional form estimated with respect to price.)
  - Secondly, a dummy variable indicating a price of more than £40 was interacted with a variable measuring the delivery charge for prices less than £40, but which was equal to zero where the price was greater than £40. We expected that those with small order values would be much more sensitive to delivery charge levels with a £40 threshold for free delivery than those with larger order values who could expect to have free delivery when choosing these options. This expectation was upheld in our model findings.

  These interactions were retained in subsequent analysis.

- We relaxed the assumption of fixed parameters and estimated mixed logit models based on a similar specification (Revelt and Train, 1998). The mixed logit model assumes that the model parameters are randomly distributed in the population with density $f(\beta|\delta)$ where δ is a vector of the true parameters of the taste variation and represents the mean and standard deviation of the βs in the population.

  Mixed logit models offer a number of advantages over MNL models.

- They produce estimates of variances within the population, and subpopulations, as well as estimates of mean model parameters.
- They allow for correlation in preferences across the choices made by respondents, which in turn
  - allows for more flexible, and hence realistic, substitution patterns between alternatives
  - gives more accurate estimates of the statistical confidence intervals around the results.
- They allow for derivation of individual-level coefficients (using the method set out in Train, 2009), which itself allows for a segmentation analysis of how results vary across observed customer characteristics.

In the present context, we assumed normal distributions for the variables without a strong prior expectation, including the alternative specific constants and the range level dummy variables, and tested both normal and lognormal distributions for those that did have a strong prior sign expectation, namely delivery charge, speed and price.

In the case of delivery charge, speed and price, for both Amazon and Deliveroo models, lognormal distributions were found to provide a superior goodness of fit to normal distributions, as measured by log likelihood, for each variable. We therefore retained lognormal distributions for these variables in our core model specification.

- Finally, variables that were statistically insignificant (p>.05) were dropped from the final specifications, and variables with random parameters whose standard deviations were statistically insignificant (p>.05) were treated as having fixed parameters in the final model specifications.

The procedure set out here resulted in the models selected for further analysis.

4.3.2. Econometric models

Amazon customers

The final model specification for Amazon customers included the following explanatory variables.

Alternative specific constants

- *Other* and *NoChoice*: alternative specific constants (dummy variables) for the "Shop/order elsewhere" and "Would not buy at all" options respectively. Coefficients on these variables were assumed to be normally distributed.

Speed of delivery

- *Speedvalue2:* Delivery speed (in minutes); coded as 15 if delivery speed was "Within 30 mins"; 45 if delivery speed was "Within 1 hour"; 90 if delivery speed was "Within

2 hours"; 180 if delivery speed was "Within 2-4 hours within a 30 min window" and 180 if delivery speed was "Between 2-4 hours".

A dummy variable equal to 1 if delivery speed was "Within 2-4 hours within a 30 min window' was included in preliminary specifications but was found to be statistically insignificant (p>.05) and was hence excluded from the final model specification.

Speedvalue2 enters the model with a fixed coefficient as preliminary specifications found the standard deviation of the random coefficient to be statistically insignificant (p>.05).

Range of products/brands offered

- *RangeConvStore* and *RangeSupermkt*: dummy variables equal to one if Range was 'Like at a convenience store / corner shop' or 'Like at a supermarket' respectively.; equal to 0 otherwise. The omitted Range level was 'Small range', which was hence set as the reference category against which the other shopping range coefficients compare. These variables enter the model with normally distributed coefficients.

Price

- *mPriceperc*: Negative of price increase (in %) i.e. 0%, 15%,30%,50% and 100%. (NB the range of this variable is [0,1], not [0,100].) Since we assume a lognormal distribution for price increase which implies that the coefficient of price increase is positive, we include the negative of price increase i.e. *mPriceperc = -Priceperc* in our model.

- *mOrdervalue_Price:* Negative of interaction term between order value of customer and price increase of OCG option (%). This variable measures the price shown in monetary terms. The variable enters the model with a lognormally distributed coefficient.

Delivery charge

- *mDelChargeInclThres*: Negative of Delivery charge which =£3.99, £5.99 and £7.99 for delivery charges with the thresholds; =0 otherwise. As with price, we assume lognormal distribution for the delivery charge with threshold variable. Hence, we include the negative of *DelChargeInclThres* i.e. *mDelChargeInclThres*= -*mDelChargeInclThres* in our model.

- *mDelChargeNoThres*: Negative of Delivery charge which =£3.99, £5.99 and £7.99 for delivery charges with no thresholds; =0 otherwise. We assume lognormal distribution for the delivery charge without threshold variable. Hence, we include the negative of *DelChargeNoThres* i.e. *mDelChargeNoThres*=- *DelChargeNoThres* in our model.

- *Price40_DelChargeInclThres*: interaction term between two dummy variables i.e. *Price40* (=1 if price of OCG option is greater than or equal to £40; equal to 0 otherwise) and *DelChargeInclThres* (delivery charge including a threshold as defined above).

The specification with respect to delivery charge allows for separate linear impacts of delivery charge on utility depending on whether the level includes a threshold of £40 for free delivery. One might expect that for orders over £40, the impact of delivery charge for orders under £40 might be considered irrelevant. If this is the case, we would expect the interaction term *Price40_DelChargeInclThres* coefficient to be equal to the coefficient on *mDelChargeInclThres*.

Furthermore, one might expect that for orders under £40, the impact of delivery charge for orders under £40 would have the same impact regardless of whether a £40 threshold was attached to the level. If this were the case, and if the coefficient on *Price40_DelChargeInclThres* were equal to the coefficient on *mDelChargeInclThres*, the coefficient on *DelChargeInclThres* should also be the same as minus the coefficient on *mDelChargeNoThres.*

However, these specifications represent hypotheses only, whereas the model specification chosen was empirically driven, allowing for separate effects to be estimated for delivery charge rates with and without the threshold and, in the case of the rates with the threshold, different coefficients for those with orders greater than £40 and those with orders less than £40. We discuss the results on this issue following presentation of the main table of estimates.

Table 12 shows the estimated coefficients. For the lognormally distributed coefficients on variables *mPriceperc*, *mOrdervalue_Price*, *mDelchargeInclThres* and *mDelchargeNoThres*, the coefficients shown in the table are the mean and standard deviations of the natural logs of the underlying coefficients. The medians, means, and standard deviations of the coefficients themselves are given by $\exp(b_k)$, $\exp(b_k + s_k^2/2)$, and $\exp(b_k + s_k^2/2)\,(\exp(s_k^2)-1)^{0.5}$ respectively (Train, 2009).

Table 12: Econometric model for Amazon customers: estimation results

Choice	Coef.	Std.Err	Z	p	Lower	Upper
Mean						
Price40_DelChargeInclThres	0.16	0.01	12.93	0.00	0.14	0.19
Speedvalue2	-0.001	0.00	-5.01	0.00	0.00	0.00
RangeConvStore	0.43	0.05	8.75	0.00	0.34	0.53
RangeSupermkt	1.45	0.06	25.42	0.00	1.33	1.56
Other	-1.94	0.09	-21.59	0.00	-2.12	-1.77
NoChoice	-6.08	0.22	-28.15	0.00	-6.51	-5.66
mPriceperc	-1.49	0.60	-2.48	0.01	-2.66	-0.31
mOrdervalue_Price	-3.37	0.14	-24.43	0.00	-3.64	-3.10
mDelChargeInclThres	-1.43	0.05	-26.40	0.00	-1.53	-1.32
mDelChargeNoThres	-1.08	0.04	-30.00	0.00	-1.15	-1.01
SD						
RangeConvStore	0.53	0.09	5.83	0.00	0.35	0.71
RangeSupermkt	1.03	0.08	13.37	0.00	0.88	1.18
Other	2.19	0.08	28.50	0.00	2.04	2.35
NoChoice	3.53	0.16	21.73	0.00	3.21	3.84
mPriceperc	1.24	0.24	5.25	0.00	0.78	1.71
mOrdervalue_Price	1.35	0.09	14.87	0.00	1.17	1.53
mDelChargeInclThres	0.27	0.06	4.85	0.00	0.16	0.38
mDelChargeNoThres	0.68	0.04	15.13	0.00	0.59	0.76
Number of obs	50,372 (=7*4*1,799)					
No. participants	1,799					
Log-likelihood	-11,998.79					
Pseudo R^2	0.679					

Note: Coefficients of Priceperc, mOrdervalue_Price, DelChargeInclThres and DelChargeNoThres are assumed to be lognormally distributed; the coefficients shown in these cases are the natural log of the coefficients, which themselves are normally distributed, rather than the coefficients themselves. Coefficients of RangeConvStore, RangeSupermkt, Otherand NoChoice are assumed to be normally distributed. Coefficients of Price40_DelChargeInclThres and Speedvalue2 are assumed to be fixed.

The results show the following:

- The coefficient of the interaction term *Price40_DelChargeInclThres* is positive and significant (p<.05). This indicates that, as expected, customers shown prices of OCG options greater than or equal to £40 were less sensitive to delivery charges when there was a £40 threshold for free delivery than those shown prices of OCG options less than £40.

- The coefficient of the delivery speed variable (*Speedvalue2*) is negative and significant (p<.05). This shows that on average, participants preferred faster delivery speeds, all else equal.

- The coefficients on *RangeConvStore* and *RangeSupermkt* are positive and significant (p<.05). This indicates that, as expected, participants preferred these shopping ranges to the base category of 'Small range'. Furthermore, the coefficient on *RangeSupermkt* is larger than the coefficent on *RangeConvStore*, indicating that customers preferred the supermarket range to the convenience store/corner shop range, as expected.

- The coefficients on *Other* and *NoChoice* are both negative, which indicates that, on average, participants preferred the OCG shopping options presented to them than the outside options of buying their groceries from a shop/order elsewhere or not buying at all.

- The coefficients on *mPriceperc*, *mOrdervalue_Price*, *mDelChargeInclThres* and *mDelChargeInclThres* were all assumed to be lognormally distributed and were hence bounded at zero, assuring the correct signs. Thus, the model captures the expected negative impacts of higher prices and delivery charges.

With respect to the price of the option, the final functional form includes price expressed both in percentage terms (via *mPriceperc*) and in monetary terms (via *mOrdervalue_Price*). This specification was empirically driven, and conforms to the intuitive idea that, for example, a £5 cost increase is likely to be felt more significant when the base order value is £10 than when it is £100. We would note, however, that the coefficient on *mOrdervalue_Price* is substantially more precisely estimated (smaller standard error) than *mPriceperc.* This suggests that there was more consistency across Amazon customers in their response to the monetary value of price than in response to the percentage change.

Two additional points regarding this specification are worth noting.

- Firstly, inclusion of price in percentage terms represents a similar mathematical formulation to inclusion of the log of price in monetary terms, in the sense that the difference between two values of each variable are independent of the base order value. For example, the difference between a 10% and a 20% price increase, as a percentage of base order value, is equal to 0.1 regardless of base order value; likewise, the difference between a 10% and a 20% price increase, in terms of the log of price in monetary terms, is equal to 0.09 regardless of base order value. Hence, a model including log of price in place of price expressed as a percentage would result in very similar results.

- Secondly, the functional form assures that utility is monotonically decreasing in price for all customers but allows the data to determine the slopes of decrease for different base order values. The nature of the functional form can be seen clearly in the following figure. This shows the impact of price increases on estimated utility at low (£20, approximately equal to the 10th percentile) and high (£70, approximately equal to the 90th percentile) order values. The figure shows that utility is linearly decreasing with price, measured in monetary terms, and that the slope of the line is steeper for low order values than high order values, which is consistent with the intuitive idea that any given cost increase is likely to be felt more keenly when it represents a higher percentage of cost.

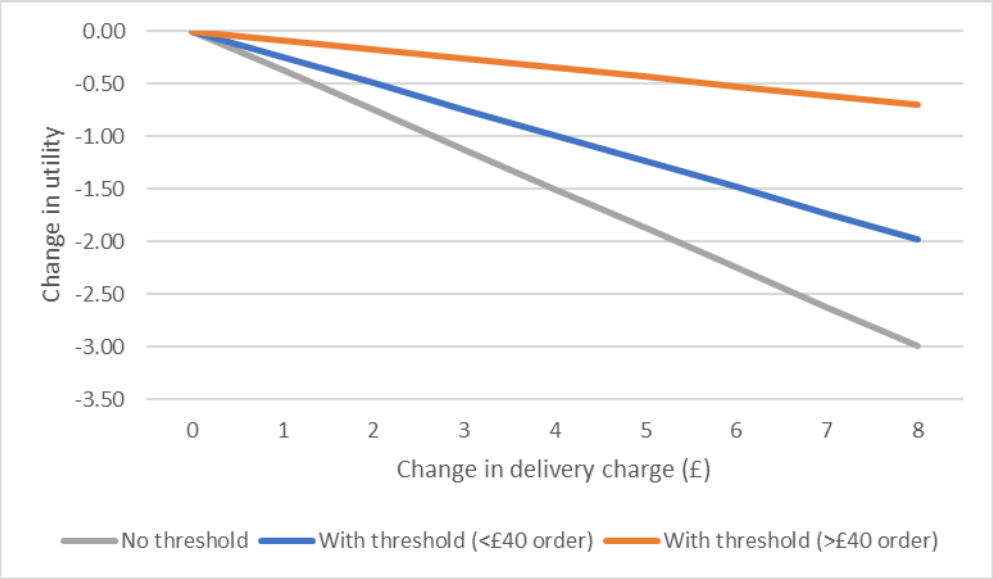
Figure 18: Impact of price increases on utility at median coefficients of *mPriceperc* and *mOrdervalue_Price*

Finally, we would note that the final model form is linear in each of the effects primarily as a consequence of the preliminary testing, described above, which found that linear models tended to perform well, in terms of log likelihood values, against a model with a dummy variable included for each attribute level (omitting a base level for each attribute). Further tests of non-linearity were attempted via inclusion of squared terms within a model otherwise identical to the final model presented. However, this model failed to converge and we hence retained the linear specification.

With respect to delivery charge, the model obtains separate relationships for increases in delivery charge depending on whether the level includes a £40 free delivery threshold and, if it does, whether the customer has an order of more or less than £40. The following figure shows how utility changes with increasing delivery charge for each of these three cases. It shows that the slope is shallowest, but not flat, for delivery charge levels that include a £40 free delivery threshold for those customers with an order of more than £40. For this group, we might have anticipated that the slope would be flat as they could avoid the delivery charge without the need to increase the value of their order. The fact that it is not flat indicates that higher levels of delivery charge still led to some avoidance of the corresponding choice options even though the customer might be expected to be able to avoid paying.

The figure further shows that the slope of the line for 'No threshold' is steeper than the line for 'With threshold <£40 order'. This indicates that the £40 free delivery threshold still confers some utility benefit even for those with orders less than £40. This is consistent with the idea that the customer has the option of obtaining free delivery in this case by increasing the size of their order. This option carries some value which is captured by the model.

Figure 19: Impact of delivery charge increases on utility at median coefficients of *mDelChargeNoThres* and *mDelChargeInclThres*



Deliveroo customers

The final model for Deliveroo customers included the following explanatory variables.

Alternative specific constants

- As in the Amazon model, *Other and NoChoice* alternative specific constants were included and assumed to be normally distributed.

Speed of delivery

- Here, unlike in the Amazon model, a random lognormally distributed coefficient is included to capture speed of delivery. The variable, *mSpeedvalue2,* equals the negative of delivery speed (in minutes), defined in the same way as in the Amazon model. Since we assume a lognormal distribution for delivery speed which implies that the coefficient of delivery speed is positive, we include the negative of delivery speed i.e. *mSpeedvalue2* = - *Speedvalue2* in our model.

- *Speed30minwindow:* Unlike in the Amazon model, we include a dummy variable which equals 1 if delivery speed is "Within 2-4 hours within a 30 min window " and =0 otherwise. This variable enters the model with a fixed coefficient. (This variable was also tested in the Amazon model but found to be statistically insignificant (p>.05), and hence excluded from the final specification.)

Range of products/brands offered

- As in the Amazon model, *RangeConvStore* and *RangeSupermkt* are included with assumed normally distributed coefficients to represent 'Like at a convenience store / corner shop' and 'Like at a supermarket' respectively. Again, the omitted Range level was 'Small range'.

Price

- As in the Amazon model we include *mOrdervalue_Price*, the negative of an interaction between the order value of the customer (£) and the price difference of the option from the base price (%).

- Unlike in the Amazon model, we do not also include *mPriceperc*, the negative of the price difference from the base price (%). This is because the variable was found to be statistically insignificant (p>.05). The resulting specification hence measures a single marginal utility of price increases, as measured in monetary terms, for all order values.

Delivery charge

- The specification of delivery charge is the same as in the Amazon model. It includes the following three variables:
  - *mDelChargeInclThres*: Negative of delivery charge for delivery charges with the £40 free delivery threshold, or zero otherwise. This enters with an assumed lognormally distributed coefficient.
  - *mDelChargeNoThres*: Negative of delivery charge for delivery charges with no thresholds; or zero otherwise. Again, we assume a lognormal distribution for this coefficient.
  - *Price40_DelChargeInclThres*: interaction term between *Price40* (=1 if price of OCG option is greater than or equal to £40; equal to 0 otherwise) and *DelChargeInclThres* (delivery charge including a threshold as defined above). This enters the model with a fixed coefficient.

Table 13 shows the estimated model. As with the Amazon model, for the variables entering the model with lognormally distributed coefficients, the table shows the mean and standard deviations of the natural logs of the underlying coefficients. The medians, means, and standard deviations of the coefficients themselves are given by $\exp(b_k)$, $\exp(b_k + s_k^2/2)$, and $\exp(b_k + s_k^2/2)\,(\exp(s_k^2)-1)^{0.5}$ respectively (Train, 2009).

Table 13: Econometric model for Deliveroo customers: estimation results

Choice	Coef.	Std.Err	Z	p	Lower	Upper
Mean						
Price40_DelChargeInclThres	0.11	0.04	2.99	0.00	0.04	0.18
Speed30minwindow	0.21	0.06	3.63	0.00	0.10	0.32
RangeConvStore	0.24	0.05	5.12	0.00	0.15	0.33
RangeSupermkt	0.66	0.05	12.99	0.00	0.56	0.75
Other	-2.08	0.10	-21.26	0.00	-2.27	-1.89
NoChoice	-4.77	0.20	-23.94	0.00	-5.17	-4.38
mOrdervalue_Price	-3.08	0.15	-19.88	0.00	-3.38	-2.77
mDelChargeInclThres	-1.48	0.04	-33.50	0.00	-1.57	-1.39
mDelChargeNoThres	-1.14	0.03	-34.52	0.00	-1.21	-1.08
mSpeedvalue2	-5.64	0.11	-49.70	0.00	-5.86	-5.42
SD						
RangeConvStore	0.35	0.11	3.32	0.00	0.14	0.56
RangeSupermkt	0.68	0.08	8.12	0.00	0.52	0.85
Other	2.29	0.09	25.51	0.00	2.11	2.46
NoChoice	3.63	0.18	20.11	0.00	3.28	3.98
mOrdervalue_Price	0.88	0.17	5.21	0.00	0.55	1.21
Number of obs	44,044 (=7*4*1,573)					
No. participants	1,573					
Log-likelihood	-11,265.19					
Pseudo R^2	0.698					

Note: Coefficients of mSpeedvalue2, mOrdervalue_Price, DelChargeInclThres and DelChargeNoThres are assumed to be lognormally distributed. Coefficients of RangeConvStore, RangeSupermkt, Otherand NoChoice are assumed to be normally distributed. Coefficients of Price40_DelChargeInclThres and Speed30minwindow are assumed to be fixed.

The results show the following:

- The coefficient of the interaction term *Price40_DelChargeInclThres* is positive and significant (p<.05). This indicates that, as expected, customers shown prices of OCG options greater than or equal to £40 were less sensitive to delivery charges when there was a £40 threshold for free delivery than those shown prices of OCG options less than £40.

- The coefficient of the *Speed30minwindow* variable is positive and significant. This indicates, as expected, that customers, on average, preferred the level 'Within 2-4 hours within a 30 min window' to the level 'Within 2-4 hours'.

- The coefficients on *RangeConvStore* and *RangeSupermkt* are positive and significant (p<.05). This indicates that, as expected, participants preferred these shopping ranges to the base category of 'Small range'. Furthermore, the coefficient on *RangeSupermkt* is larger than the coefficent on *RangeConvStore*, indicating that customers preferred the supermarket range to the convenience store/corner shop range, as expected.

- The coefficients on *Other* and *NoChoice* are both negative, which indicates that, on average, participants preferred the OCG shopping options presented to them than

the outside options of buying their groceries from a shop/order elsewhere or not buying at all.

- The coefficients on *mOrdervalue_Price*, *mDelChargeInclThres*, *mDelChargeInclThres* and *mSpeedvalue2* were all assumed to be lognormally distributed and were hence bounded at zero, assuring the correct signs. Thus, the model captures the expected negative impacts of higher prices and delivery charges, and slower speeds.

With regard to price, the above model differs from the Amazon model in that it excludes *mPriceperc*, the variable measuring price in percentage terms. Specification testing found this variable to be statistically insignificant (p>.05), indicating that, within the range of price levels shown to the Deliveroo sample, customers were equally sensitive to given price increases regardless of the base order value size.

The difference between Amazon and Deliveroo customers in this regard could conceivably be a consequence of the Deliveroo customers have substantially lower, and less variable, order values as a group than Amazon customers. For Amazon customers, the 10th and 90th percentiles of order value were £[✂] and £[✂] respectively, whereas for Deliveroo, they were £[✂] and £[✂] respectively. Within a narrower range there is likely to be a less significant difference in price impacts across the sample of order values even if the underlying preferences are similar.

With regard to delivery charge, the estimated relationship is very similar to that observed for the Amazon model. The shallowest slope of utility (least negative coefficient) is obtained for delivery charge levels that include a £40 free delivery threshold for those customers with an order of more than £40 and a steeper slope for 'No threshold' than for 'With threshold <£40 order'. This again indicates that the £40 free delivery threshold confers some utility benefit even for those with orders less than £40.

4.4 Trade-off analysis

A key outcome of the conjoint analysis is to estimate the trade-off rates between attributes, also known as marginal rates of substitution (MRS). These rates show, for example, how big a fall in price would be needed to exactly compensate for a £1 increase in delivery charge, or how many extra minutes of delivery speed would be equivalent, in utility terms, to an improvement in the range of products/brands offered from Small range to Convenience store range.

Our modelling methodology allows for the estimation of individual level coefficients, using the methodology set out in Train (2009). Individual coefficients represent the mean of the distribution of the parameter conditional on the choices made by the individual. In our calculations, we treat the individual coefficients as point measures for each individual although we acknowledge that this is an approximation due to the fact that the coefficients themselves are random variables.

We consider six trade-offs. The following table shows how each trade-off is calculated using the individual level coefficients from the Amazon and Deliveroo models.

Figure 20: Calculation of trade-off rates

Trade off	Calculation: Amazon	Calculation: Deliveroo
Change in price (%) per £1 delivery charge change	$b_{mDelChargeNoThres}$ / ($b_{mPriceperc}$ + $b_{mOrdervalue\_Price}$*OrderValue)	$b_{mDelChargeNoThres}$ / ($b_{mOrdervalue\_Price}$*OrderValue)
Change in price (%) per 30-minute speed change	-30*$b_{Speedvalue2}$ / ($b_{mPriceperc}$ + $b_{mOrdervalue\_Price}$*OrderValue)	30*$b_{mSpeedvalue2}$ / $b_{mOrdervalue\_Price}$*OrderValue)
Change in delivery charge (£) per 30-minute speed change	-30*$b_{Speedvalue2}$ / ($b_{mDelchargeNoThres}$)	30*$b_{mSpeedvalue2}$ / ($b_{mDelchargeNoThres}$)
Change in price (%) per range improvement from 'Small range'	$b_{RangeConvStore}$ / ($b_{mPriceperc}$ + $b_{mOrdervalue\_Price}$*OrderValue) $b_{RangeSupermkt}$ / ($b_{mPriceperc}$ + $b_{mOrdervalue\_Price}$*OrderValue)	$B_{RangeConvStore}$ / ($b_{mOrdervalue\_Price}$*OrderValue) $B_{RangeSupermkt}$ / ($b_{mOrdervalue\_Price}$*OrderValue)
Change in delivery charge (£) per range improvement from 'Small range'	$b_{RangeConvStore}$ / $b_{mDelchargeNoThres}$ $b_{RangeSupermkt}$ / $b_{mDelchargeNoThres}$	$b_{RangeConvStore}$ / $b_{mDelchargeNoThres}$ $b_{RangeSupermkt}$ / $b_{mDelchargeNoThres}$
Change in delivery speed (min) per range improvement from 'Small range'	-$b_{RangeConvStore}$ / $b_{Speedvalue2}$ -$b_{RangeSupermkt}$ / $b_{Speedvalue2}$	$b_{RangeConvStore}$ / $b_{mSpeedvalue2}$ $b_{RangeSupermkt}$ / $b_{mSpeedvalue2}$

Figure 21 to Figure 26 present the attribute trade-off rates for the entire sample while Table 14 and Table 15 show the trade-off values for the different attributes by segments selected for our analysis.

Figure 21 first presents the distribution of trade-off rates for a £1 reduction in delivery charge in terms of price, for Amazon and Deliveroo customers. The p10, p25, p50, p75 and p90 values represent the 10^{th}, 25^{th}, 50^{th},75^{th} and 90^{th} percentiles of the distribution of trade-off rates.

The figure shows that the median (p50) Amazon customer traded off a £1 delivery charge reduction for a 17.5% change in price. This equals £[✂] at the median order value of £[✂] for Amazon customers. Since £[✂] > £1.00, Amazon customers were hence found to be more sensitive to delivery charge levels than price levels on average, within the core ranges of price change shown to each group of customers.

Similarly, the median (p50) Deliveroo customer traded off a £1 delivery charge reduction for a 69.9% change in price, which is equal to £[✂] at the median order value of £[✂] for Deliveroo customers. Overall, Deliveroo customers' sensitivity to delivery charge was thus even higher relative to price than was found for Amazon customers.

Figure 21: **Change in price (%) per £1 delivery charge reduction**

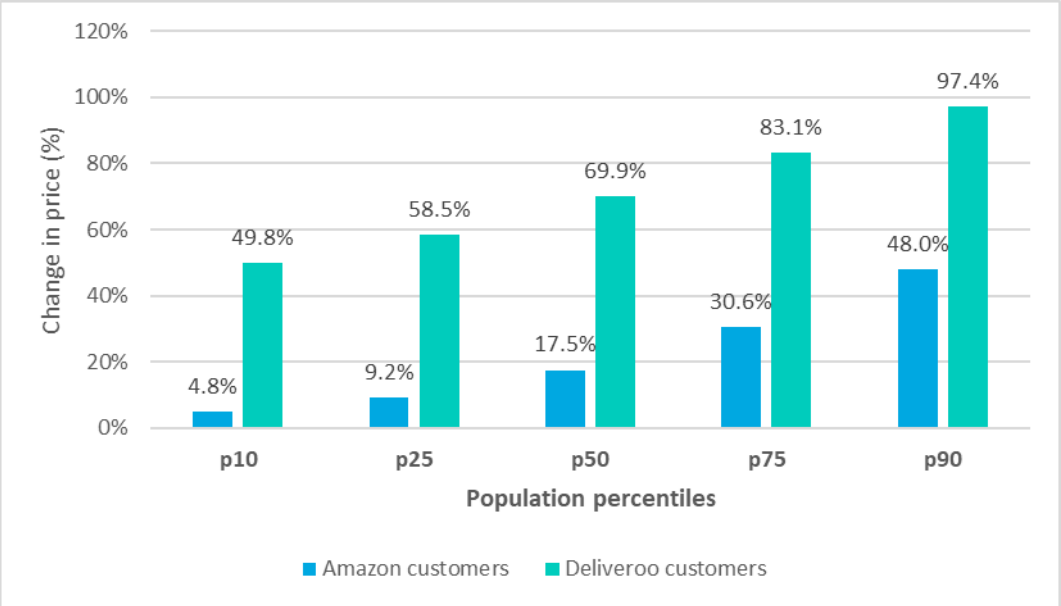


Figure 22 presents the distribution of trade-off rates for a 30-minute change in speed in terms of price, for Amazon and Deliveroo customers. The figure shows that the median (p50) Amazon customer traded off a 30-minute change in speed for a 2.0% change in price, which equals £[✂] at the median order value of £[✂] for Amazon customers.

The median Deliveroo customer traded off a 30-minute change in speed for a 26.2% change in price, which equals £[✂] at the median order value of £[✂] for Deliveroo customers. Overall, Deliveroo customers thus valued delivery speed higher than Amazon customers in terms of price levels.

Figure 23 presents the distribution of trade-off rates for a 30-minute change in speed in terms of delivery charge, for Amazon and Deliveroo customers. The figure shows that the median (p50) Amazon customer traded off a 30-minute change in speed for a £0.11 change in delivery charge while the median Deliveroo customer traded off a 30-minute change in speed for a £0.38 change in delivery charge. Overall, Deliveroo customers thus valued delivery speed higher than Amazon customers in terms of delivery charge.

Figure 22: Change in price (%) per 30-minute speed change

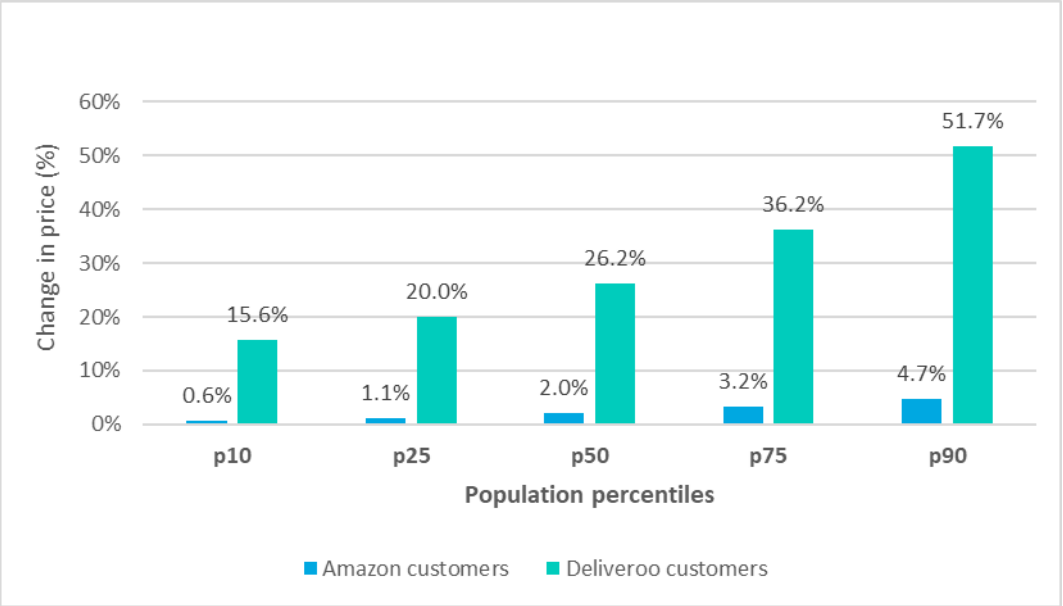


Figure 23: Change in delivery charge (£) per 30-minute speed change

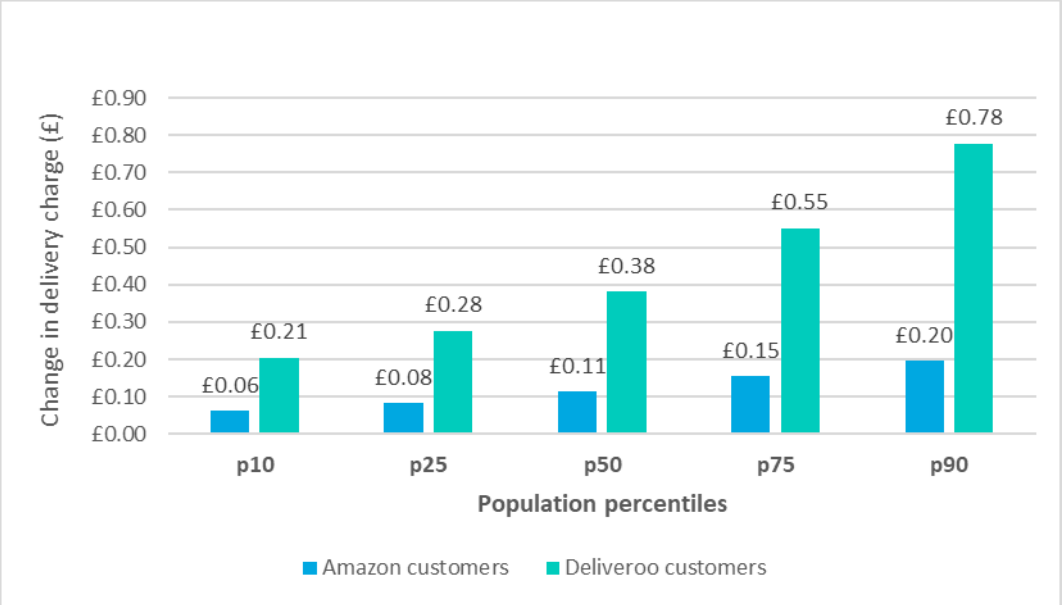


Figure 24 and Figure 25 present the trade-off rates between range improvements and price and delivery charge respectively, for Amazon and Deliveroo customers. Here, and in the remainder of the figures in this section, we show median trade-off rates.

Figure 24 shows that the median (p50) Amazon customer traded off a range improvement from Small to Convenience store level for a 18.4% change in price, which equals £[✂] at the median order value of £[✂] for Amazon customers. Similarly, the median Amazon customer traded off a range improvement from Small to Supermarket level for a 62.1% change in price, which equals £[✂] at the median order value of £[✂] for Amazon customers

The median Deliveroo customer traded off a range improvement from Small to Convenience store level for a 48.3% change in price, which equals £[✂] at the median order value of £[✂] for Deliveroo customers. Similarly, the median Deliveroo customer traded off a range improvement from Small to Supermarket level for a 136% change in price, which equals £[✂] at the median order value of £[✂] for Deliveroo customers.

Figure 24 and Figure 25 both indicate that broader shopping ranges were valued highly by both Amazon and Deliveroo customers. Moreover, since Deliveroo customers' sensitivity to delivery charge was higher relative to price than Amazon customers (see Figure 21: Change in price (%) per £1 delivery charge reduction), Deliveroo values were higher in price terms but lower in delivery charge terms.

Figure 24: Change in price (%) per range improvement from 'Small range'

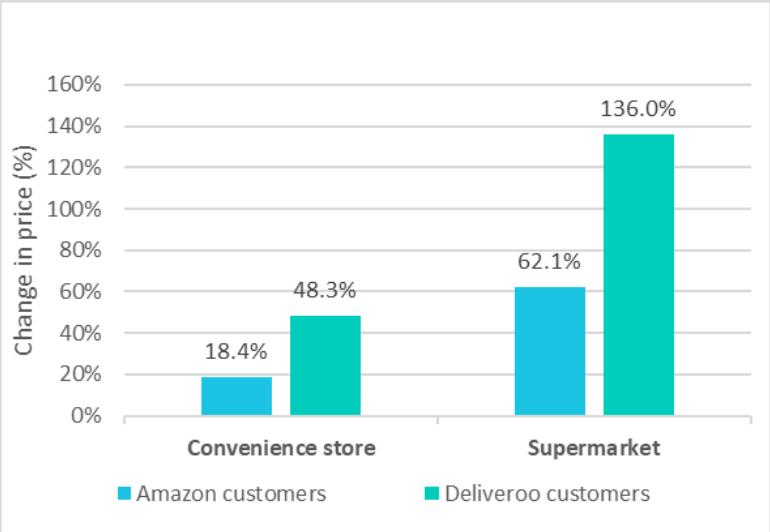
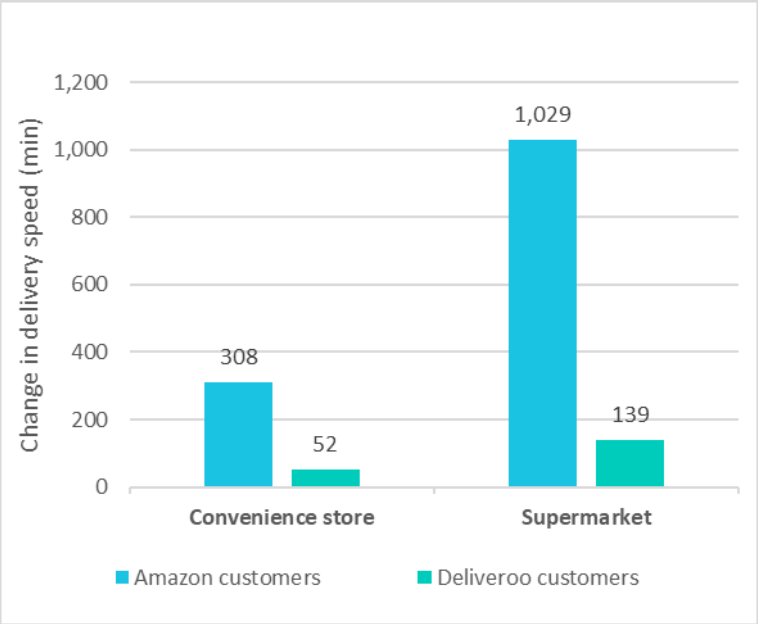


Figure 25: Change in delivery charge (£) per range improvement from 'Small range'

Figure 26 presents the trade-off rates between range improvements and delivery speed for Amazon and Deliveroo customers. For Amazon customers, range dominates over

speed as shown by the fact that the equivalent number of minutes between each pair of range levels is greater than the difference between the maximum and minimum speeds in the survey. For Deliveroo customers, the equivalent number of minutes between each pair of range levels is within the range of speeds shown in the survey. Overall, therefore, Amazon customers are found to have valued range much more than speed while Deliveroo customers traded off range and speed within the conjoint exercise.

Figure 26: Change in delivery speed (min) per range improvement from 'Small range'



Segmented trade-off rates

The trade-off rates presented above have been examined across the following segmentations.

- *Age of participants* split into two groups: age less than 35 years and age equal to or more than 35 years
- *Shopping purpose* split into three groups: shopping by impulse, shopping for general grocery and all other shopping purposes (includes Convenience items such as milk, bread, toilet rolls; Ingredient(s) for cooking a meal that evening; Item(s) forgotten from a planned shop and other purposes)
- *Shopping main reason* split into two groups: unable to shop (which includes Shops shut at the time; Unable to use the car and Unable or difficult to leave the house at the time) and unwilling to shop (includes all other shopping reasons like too busy; habit etc.)
- *Order value* split into two groups: order less than £40 and order equal to or more than £40
- *Shopping frequency* split into two groups: infrequent (which includes About once a fortnight, About once a month. Less than once a month and Don't Know) and frequent

shopping (which includes Nearly every day, More than once a week and About once a week)

- *Region* split into two groups: London and Non-London

In obtaining these segment-specific measures, we again acknowledge that these are approximations of segment differences due to the fact that the coefficients themselves are random variables.

Table 14 and Table 15 present the median trade-off rates by segment for Amazon and Deliveroo customers respectively. Overall, few notable differences were found between the various sample segments. The most notable differences were the following:

- Delivery charge/Price trade-off:
  - Amazon customers with lower-value orders had higher trade-off rates than those with higher value orders
  - Impulse orders had higher rates than general grocery for Amazon customers

- Delivery speed/Price trade-off:
  - Lower-value orders had higher rates for Amazon customers
  - Impulse orders had higher rates than general grocery for Amazon customers

- Delivery speed/Delivery charge trade-off:
  - No notable segment differences were found

- Range/Price trade-off:
  - For Amazon, lower-valued orders had higher values for both range improvements
  - For Deliveroo, General grocery orders had higher values for Supermarket than Impulse orders

- Range/Delivery speed trade-off:
  - No notable segment differences for Amazon.
  - For Deliveroo, General grocery and Other-purpose orders had higher values for supermarket range than Impulse orders.

Table 14: Median trade-off rates by segments for Amazon customers

	Age group		Shopping purpose			Shopping reason		Order value		Shopping frequency		Region	
	Age <35	Age>=35	Impulse	General	Other	Unable	Unwilling	<£40	>=£40	Infrequent	Frequent	London	Non-London
Convenience store/ Price (%)	19.0%	18.2%	24.6%	16.5%	20.0%	18.4%	18.7%	27.5%	14.7%	17.9%	19.6%	16.2%	19.2%
Supermarket/ Price (%)	65.1%	60.1%	74.8%	56.4%	67.2%	61.4%	62.2%	84.5%	51.5%	61.2%	63.9%	58.4%	64.3%
Convenience store/Delivery charge (£)	£1.15	£1.08	£1.20	£1.08	£1.13	£1.08	£1.13	£1.20	£1.06	£1.07	£1.17	£1.11	£1.11
Supermarket/ Delivery charge (£)	£3.71	£3.51	£3.70	£3.56	£3.66	£3.52	£3.70	£3.81	£3.52	£3.54	£3.70	£3.73	£3.56
Convenience store/ Speed (min)	309	307	344	303	305	308	309	317	304	304	317	296	312
Supermarket/ Speed (min)	1034	1028	992	1032	1040	1009	1050	990	1046	1041	1013	1036	1027
30min speed reduction/ Price (%)	2.1%	2.0%	2.4%	1.8%	2.2%	2.0%	2.0%	2.8%	1.6%	2.0%	2.1%	1.9%	2.1%
30min speed reduction/ Delivery charge (£)	£0.11	£0.11	£0.12	£0.11	£0.12	£0.11	£0.12	£0.12	£0.11	£0.11	£0.12	£0.11	£0.11
£1 lower delivery charge/ Price (%)	17.6%	17.4%	20.9%	16%	18.9%	17.3%	17.6%	23.2%	14.8%	17.7%	17.1%	16.7%	18.1%

Table 15: Median trade-off rates by segments for Deliveroo customers

	Age group		Shopping purpose			Shopping reason		Order value		Shopping frequency		Region	
	Age <35	Age>=35	Impulse	General	Other	Unable	Unwilling	<£40	>=£40	Infrequent	Frequent	London	Non-London
Convenience store/ Price (%)	48.6%	47.9%	48.7%	42.8%	49.2%	48.2%	48.3%	48.3%	48.4%	47.4%	49.5%	47.2%	49.4%
Supermarket/ Price (%)	136.7%	134.3%	133.3%	138.4%	142.5%	136.8%	135.3%	136.0%	133.1%	137.4%	133.1%	136.8%	135.6%
Convenience store/Delivery charge (£)	£0.68	£0.67	£0.67	£0.65	£0.68	£0.67	£0.68	£0.67	£0.72	£0.66	£0.69	£0.66	£0.69
Supermarket/ Delivery charge (£)	£1.82	£1.83	£1.76	£2.06	£1.96	£1.79	£1.85	£1.83	£1.64	£1.82	£1.83	£1.83	£1.80
Convenience store/ Speed (min)	52	52	51	46	56	52	52	52	48	50	55	52	52
Supermarket/ Speed (min)	138	141	132	146	158	137	146	139	145	137	146	141	137
30min speed reduction/ Price (%)	26.6%	25.8%	26.8%	26.8%	24.9%	26.3%	26.1%	26.2%	28.0%	26.7%	25.5%	26.1%	26.3%
30min speed reduction/ Delivery charge (£)	£0.39	£0.38	£0.39	£0.39	£0.37	£0.38	£0.39	£0.38	£0.40	£0.39	£0.37	£0.38	£0.39
£1 lower delivery charge/ Price (%)	69.7%	70.2%	70.4%	68.6%	69.7%	70.2%	69.6%	70.3%	67.2%	70.5%	68.5%	69.6%	70.4%

4.5 Simulation analysis

4.5.1. Overview

A market simulator tool was created in Excel to enable users to derive predicted shares of preference in different market scenarios. The simulator tool was developed around the coefficient estimates from the econometric models. The simulator tool allows the user to input different market scenarios, in terms of the alternatives available and their attribute levels in a particular location, and then simulate changes to these scenarios. These changes could include price changes or other attribute level changes like delivery charge, delivery speed and shopping range changes for particular alternatives.

Extracts from the simulator tool are shown in the screenshot illustrations below. Figure 27 shows the input sections of the tool. Here, the user first chooses a base case (described later in this section) for both the Amazon and Deliveroo options, then a market scenario for both the Amazon and Deliveroo options and finally the segments of interest.

The shows the output sections of the tool.

The output sections, shown in Figure 28 include the following for each customer group:

- Share of preference in the base case for the four options i.e. Amazon, Deliveroo, Buy from shop/order elsewhere and Not buy at all
- Share of preference in the scenario case for the four options i.e. Amazon, Deliveroo, Buy from shop/order elsewhere and Not buy at all
- Absolute change in shares i.e. difference in shares between the base and scenario cases
- Proportional change in shares i.e. absolute change in shares relative to the base case shares.

Figure 27: Market simulator tool: Input sections

Base and Market Scenario (Configure base and scenario by selecting features using dropdown boxes)

	Base case		Scenario	
	A Amazon	**B Deliveroo**	**A Amazon**	**B Deliveroo**
Price (Amazon model) *(Input value from 0% to 100%)*	0%	50%	0%	50%
Price (Deliveroo model) *(Input value from -50% to 0%)*	-33%	0%	-33%	0%
Delivery charge (£) *(Choose from dropdown list)*	Free for orders of £40 or more (otherwise £3.99)	£1.99	Free for orders of £40 or more (otherwise £3.99)	£1.99
Delivery speed (minutes) *(Choose from dropdown list)*	Between 2 and 4 hours	Within 30 minutes	Between 2 and 4 hours	Within 30 minutes
Shopping range *(Choose from dropdown list)*	Like at a supermarket	Small range	Like at a supermarket	Small range

Segments (Choose segment to analyse using dropdown boxes)

CHOOSE SEGMENT ->		**SAMPLE SIZE**
Age	All	3372
Shopping Purpose	All	3372
Shopping Main Reason	All	3372
Order Value	All	3372
Shopping Frequency	All	3372
Region	All	3372

Figure 28: Market simulator tool: Output section

Outcomes (Shares of preferences)

	A Amazon	B Deliveroo	C Buy from a shop/order elsewhere for next day/later delivery	D Would not buy at all
AMAZON SAMPLE				
Share of preference: Base	72.9%	7.6%	16.7%	2.8%
Share of preference: Scenario	72.9%	7.6%	16.7%	2.8%
Absolute change in share	0.0%	0.0%	0.0%	0.0%
Proportional change in share	0.0%	0.0%	0.0%	0.0%
DELIVEROO SAMPLE				
Share of preference: Base	35.5%	33.7%	21.9%	8.9%
Share of preference: Scenario	35.5%	33.7%	21.9%	8.9%
Absolute change in share	0.0%	0.0%	0.0%	0.0%
Proportional change in share	0.0%	0.0%	0.0%	0.0%

It is important to note that the shares of preference derived in this simulation analysis are not to be interpreted as predicted market shares. There are important differences between the real-world market and the simulated market that preclude such an inference. These include differences in service availability, awareness, omitted attributes (e.g. brand), and the degree of randomness / determinism in choice, which is likely to differ between a survey and a real-world choice situation.

Notwithstanding these caveats, the outcomes from the simulation models are nonetheless meaningful measures of demand. They show how customers might respond to different scenarios in a world of equal awareness and availability and, as such, indicate their underlying preferences for offers currently on the market, and potentially on the market in future, as measured by the attributes included in the conjoint exercise.

We follow the steps below to calculate outputs based on the Amazon and the Deliveroo models:

- For each customer, we calculate the utilities for each of the 4 alternatives ie. Amazon, Deliveroo, Buy from shop/order elsewhere and Not buy at all, by multiplying the customer-level estimated coefficients for each of the attributes by the value of the attributes inputted by the user for the base and scenario cases in the input sections of the simulator tool.

- For each customer, we then calculate the probabilities for each of the 4 options by calculating the exponential of the utilities for each of the 4 options and dividing them by the sum of the exponentiated utilities over all the 4 options. Estimated probabilities are calculated for all the options and for the base and scenario cases.

- Finally, the share of preferences for each of the 4 options is calculated the (weighted) average of the estimated probabilities for each of the 4 options over all customers. The share of preferences for all the options are calculated for the base and the scenario cases.

The following two sections describe the base case and the three market scenarios considered for purposes of our analysis.

4.5.2. Base case simulation

For purposes of our analysis, we set up a Base case to closely match current Amazon. and Deliveroo market offers. Figure 29 shows the inputs assumed for this scenario. In the case of price. each model sets the base price increase to 0% for its 'own' customers. Given that currently Deliveroo price levels are typically around 50% higher than Amazon price levels for the same items, the price increase for Deliveroo in the Amazon model is assumed to be 50% and the price increase for Amazon in the Deliveroo model is hence assumed to be -33%.

The delivery charge level for Amazon is assumed to be "Free for orders of £40 or more (otherwise £3.99)" and the delivery charge for Deliveroo customers is assumed to be £1.99. Delivery speed is assumed to be "Between 2-4 hours" and "Within 30 minutes" for Amazon

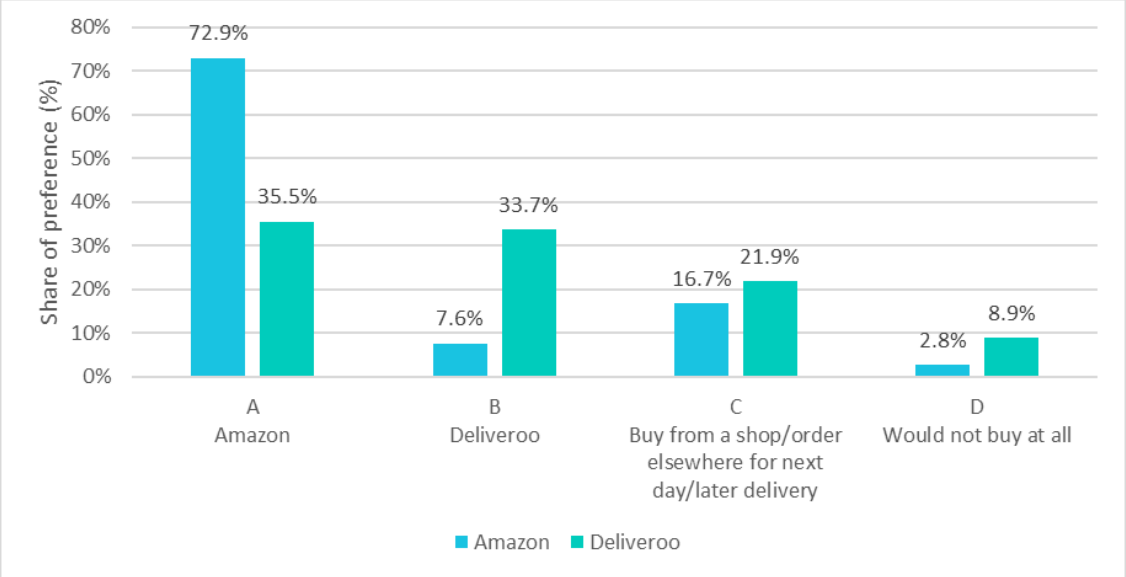
and Deliveroo customers respectively. The shopping range is assumed to be "Like at a supermarket" and "Small range" for Amazon and Deliveroo customers respectively.

Figure 29: Base case simulation: Inputs

	Base case	
	A **Amazon**	**B** **Deliveroo**
Price (Amazon model) *(Input value from 0% to 100%)*	0%	50%
Price (Deliveroo model) *(Input value from -50% to 0%)*	-33%	0%
Delivery charge (£) *(Choose from dropdown list)*	Free for orders of £40 or more (otherwise £3.99)	£1.99
Delivery speed (minutes) *(Choose from dropdown list)*	Between 2 and 4 hours	Within 30 minutes
Shopping range *(Choose from dropdown list)*	Like at a supermarket	Small range

The predicted base case shares of preference are presented in Figure 30. This figure shows that Amazon customers displayed a clear preference for the Amazon alternative whereas Deliveroo customers had a more even sharing of preference across alternatives.

Figure 30: Base case: Shares of preferences



An analysis of the base share of preferences across segments showed very few notable differences. The following three figures present the predicted shares for the base case for only those segments where noticeable differences were found.

Figure 31and Figure 32 show the predicted shares of preference by order value in the Amazon and the Deliveroo models respectively. In both cases, we find that higher order value customers had a higher share of preference for Amazon, amongst both Amazon and Deliveroo customers.

Figure 31: Base shares of preference by order value (Amazon customers)

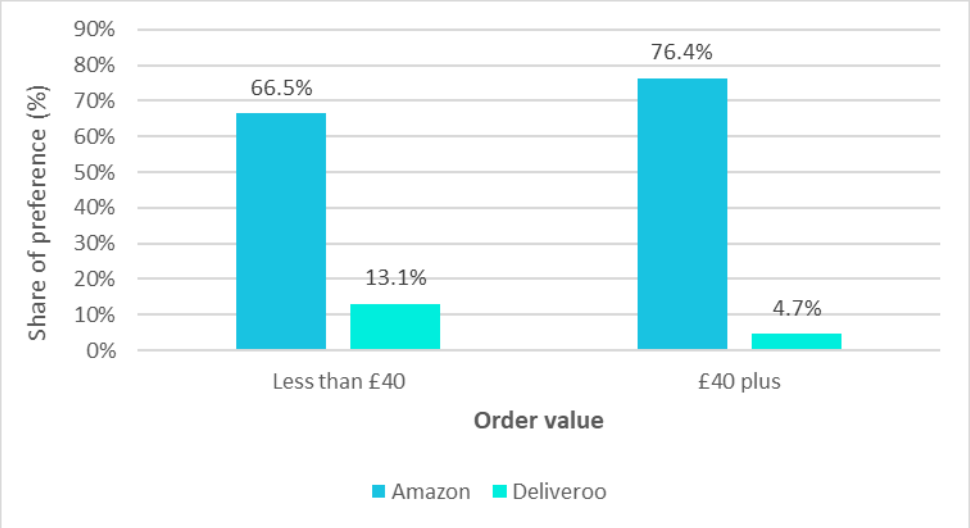


Figure 32: Base shares of preference by order value (Deliveroo customers)

Figure 33 presents base shares of preferences by shopping purpose for Amazon customers. Impulse orders had a 10.1% base share of preference for Deliveroo and general grocery orders had a 6.4% share for Deliveroo. Amongst Deliveroo customers, no notable difference was found across shopping purposes.

Figure 33: Base shares of preference by shopping purpose (Amazon customers)

4.5.3. Scenario simulations

The market simulator tool was used to analyse the following specific scenarios selected by CMA.

- Scenario 1: Deliveroo increases its range
  - 1a. Deliveroo increases its range to Convenience store level
  - 1b. Deliveroo increases its range to Supermarket level

- Scenario 2: How much can Amazon/Deliveroo increase their prices by and still maintain share if they offer free delivery?
  - 2a. Amazon increases its price and makes delivery free to all customers
  - 2b. Deliveroo increases its price and makes delivery free to all customers

- Scenario 3: Amazon increases its delivery speed
  - 3a. Amazon increases its delivery speed to "Within 30 minutes"
  - 3b. Amazon increases its delivery speed to "Within 1 hour"
  - 3c. Amazon increases its delivery speed to "Within 2 hours"

Scenario 1: Deliveroo increases its range

Figure 34 shows the absolute changes in shares of preference when Deliveroo increases its range to Convenience store level. The figure shows that the share of preferences for Deliveroo increases by 3.6% in the Amazon model and 4.7% in the Deliveroo model, mainly at the expense of Amazon's share.

Figure 35 then shows the absolute changes in shares of preference when Deliveroo increases its range to Supermarket level. This figure shows that the share of preferences for Deliveroo increases by 13.8% in the Amazon model and 13.5% in the Deliveroo model, again mainly at the expense of Amazon's share.

Figure 34: Deliveroo range to Convenience store: Absolute changes in shares of preference

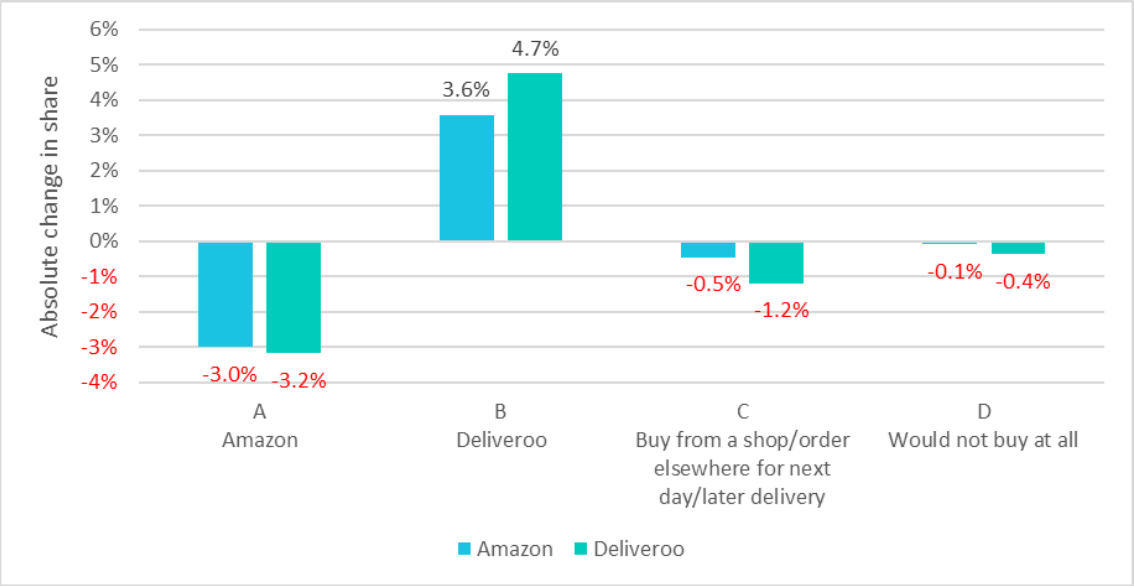
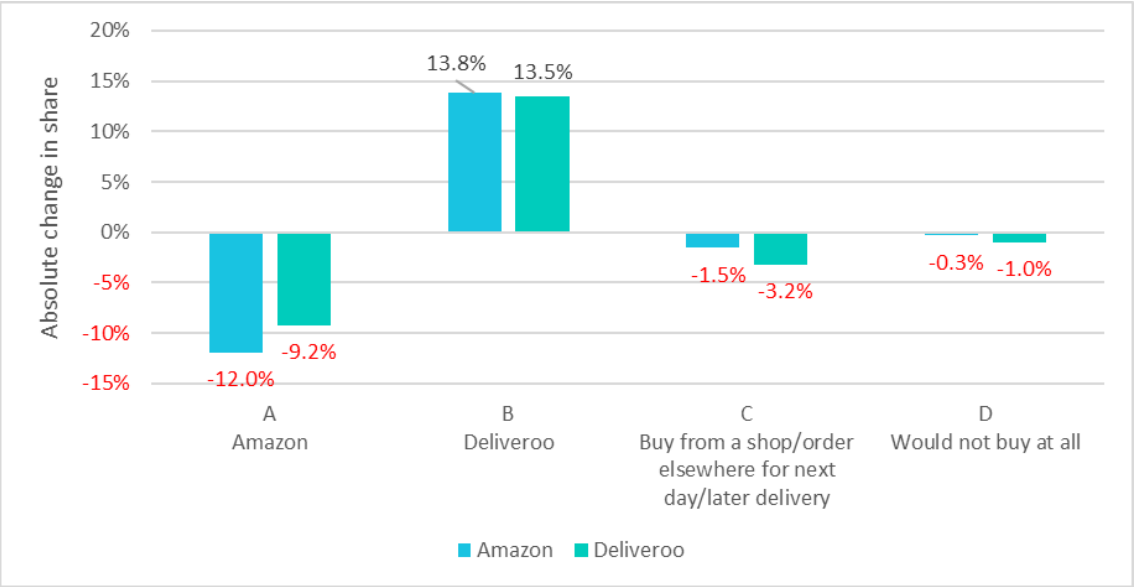


Figure 35: Deliveroo range to Supermarket: Absolute changes in shares of preference



Scenario 2: How much can Amazon/Deliveroo increase their prices by and still maintain share if they offer free delivery?

Figure 36 shows the price increases that will maintain base shares if Amazon and Deliveroo offer free delivery to all its customers. The figure shows that Amazon could increase prices by 19% and maintain share based on the Amazon customers model; or by 119% based on the Deliveroo customers model. Deliveroo could increase prices by 33% and maintain share based on the Amazon customers model; or by 62% based on the Deliveroo customers model.

The findings shown here are broadly consistent with those from Figure 21 showing trade-off rates for £1 delivery charge reductions in terms of price (%).

Figure 36: Changes in price that maintain base shares if Amazon/Deliveroo offer free delivery

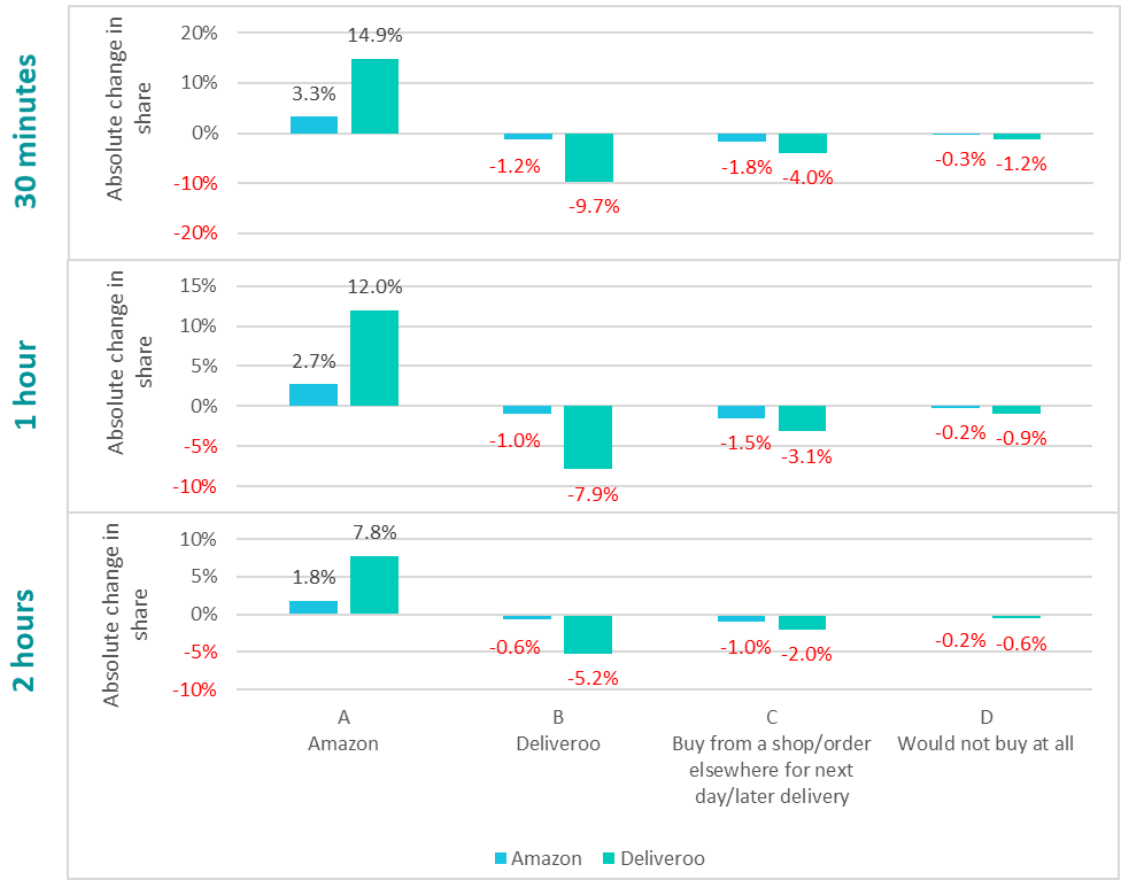
Scenario 3: Amazon increases its delivery speed

Figure 37 shows the absolute changes in shares of preference when Amazon increases its delivery speed to 30 minutes, 1 hour and 2 hours. The results show that Amazon could increase shares of preferences amongst the Amazon customer sample by 1.8%, 2.7% or 3.3% if it improves speed to 2 hours, 1 hour or 30 minutes respectively.

Amongst the Deliveroo customer sample, Amazon shares would increase by 7.8%, 12.0% or 14.9% for the same speed improvements.

Improvements to Amazon shares come at the expense of all other alternatives.

Figure 37: Scenario 3: Absolute changes in shares of preference following Amazon speed improvements



5 Summary of Findings

5.1 Non-conjoint findings

The typical shopping missions are different between the two parties. Amazon customers tend to use it for general groceries, whereas for Deliveroo it is used predominantly for impulse/indulgence buys.

Most Deliveroo customers buy only a small proportion of their groceries via the offer. In contrast, almost half of Amazon customers buy half or more of their groceries from Prime Now. Looking at the size of order, Deliveroo customers make smaller orders than Amazon customers and are typically expecting very fast delivery (90% require within 1 hour) to consume the items straight away. On average, Amazon customers require a slower same-day service, often not consuming the items the same day.

Speed of delivery is the main reason that both sets of customers give for using the merger party's offer. Amazon customers place more emphasis on reliable delivery times and ability to book a scheduled delivery slot. Deliveroo customers place more emphasis than Amazon customers on late night delivery and availability of the service in their area.

A wider range of products being on offer would encourage greater use, particularly for Amazon customers. Amazon customers place slightly more emphasis on lower item prices and free, or lower, delivery charges.

A large majority of customers report that they would not purchase via OCG if their provider stopped offering the service, with the most common action being to purchase in-store. 20% of Deliveroo customers and 11% of Amazon customers would order OCG from another provider.

The proportion of respondents stating that the merger party would be their next best alternative was low; of those who would divert to another OCG provider, a strong majority would not select the alternative merger party. Just 1.6% of Amazon customers would divert to Deliveroo and 4.9% of Deliveroo customers would divert to Amazon. However reported diversion to other providers is similarly limited.

5.2 Conjoint findings

The principal findings from the conjoint analysis can be summarised as follows.

- Trade-off results, obtained via examining ratios of the model coefficients, showed that:
  - customers were substantially more sensitive to delivery charges than changes in price levels

- Deliveroo customers valued delivery speed higher than Amazon customers in terms of price levels and delivery charge
- Broader ranges of products/brands were valued highly by both sets of customers
- Amazon customers valued range much more than speed; Deliveroo customers traded off range and speed across the conjoint exercise.

- In a base case simulation, the model predicted a clear preference for the Amazon alternative amongst Amazon customers but a more even sharing of preference across alternatives amongst Deliveroo customers
  - Higher order value customers of both Amazon and Deliveroo had a higher base share of preference for Amazon
  - Impulse orders were slightly more likely to favour Deliveroo
- Increases in Deliveroo's range improved their share of preference, mainly at the expense of Amazon's share, but most substantial impact occurs in move from Convenience store to Supermarket level
- Amazon and Deliveroo could increase their prices substantially while maintaining share of preference if they were able to offer free delivery (while other party maintains status quo)
- Amazon could increase its share by up to 14.9% of Deliveroo's customers by increasing delivery speed to 30 minutes

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Appendix A

Qualitative interview discussion guide

3380 / CMA Online Convenience Grocery Depth Topic Guide

Good morning/afternoon/evening... My name is … and I work for an independent market research company called Accent. We are conducting research for the Competition and Markets Authority (the CMA), the UK's competition regulator.

The CMA is undertaking research with customers of [Amazon Prime Now / Amazon Fresh / Deliveroo] to understand how customers of this service use it.

The research is to support the CMA's merger investigation in the online convenience grocery delivery market. To enable this research to take place, the CMA used its statutory powers under the Enterprise Act to require [Amazon Prime Now / Amazon Fresh / Deliveroo] to provide contact details for 200 customers who had recently placed an order for groceries. You were included in this sample.

OFFER TO SEND THE CONFIRMATION EMAIL AGAIN IF NEEDED – PARTICIPANT MAY NEED TO BE CALLED BACK AFTER THEY HAVE READ IT, IF THEY PREFER

Thank you very much for agreeing to help us with this research and I'd like to remind you that you will receive a £30 cheque if you complete the interview.

The research is being conducted in accordance with the Code of Conduct of the Market Research Society (MRS) and also with the Data Protection Act . This means that everything you say is confidential and will not be attributed to you personally unless you give your permission for us to pass your comments on in named format.

Our discussion is being recorded. This is standard market research procedure and is to ensure accuracy – so I do not have to try to remember what you have said – and for analysis purposes only. The recordings will not be passed to any third party not associated with the research project, and in reporting the findings from this research everything that you say will be confidential and will be reported in grouped format only.

The discussion will last around 30 minutes.

Can I stress that we are interested in your views - there are no right or wrong answers.

General use / purchase details 10 mins (10-15 including intro)

I would like to find out a bit more about how you use the [Amazon Prime Now / Amazon Fresh / Deliveroo] online convenience grocery shopping service. You may also use other parts of their online delivery service but I would like you to focus on the grocery elements i.e. non-restaurant food, tobacco products, alcohol, toiletries etc. These are items delivered same-day.

GENERAL USE

When did you first use it?

Typically, how often do you order groceries from Amazon/Deliveroo?

Is it just you that places orders, or does anyone else in your household/family use your account to place orders?

- Do you live with anyone else?

In what kind of circumstances do you typically use it?

- Particular days/times or events
- Particular items

How much do you typically spend? Does this vary much?

And typically do you use it for….?

- A main shop
- A planned top-up shop
- An unplanned top-up shop
- An impulse shop
- An emergency shop

And what kind of items do you normally buy in those types of shops? (REPEAT FOR EACH TYPE USED ABOVE)

- A main shop
- A planned top-up shop
- An unplanned top-up shop
- An impulse shop
- An emergency shop

Does the way you use it vary for different occasions or is it fairly consistent? (e.g. weekend/weekday; day/evening; general/specific event etc)

SPECIFIC PURCHASE

We have been given data relating to a single order you made costing [order value from sample] with [Amazon Prime Now / Amazon Fresh / Deliveroo] on [date].

- Do you remember that order?
- And was it you that made the order on your account?

IF PARTICIPANT RECALLS/MADE THE ORDER:

Was this the most recent order you made using Amazon Prime Now / Amazon Fresh / Deliveroo or has there been a more recent one?

<u>FROM THIS POINT, FOCUS ON THE MOST RECENT PURCHASE: ASSESS HOW WELL THEY RECALL THE DETAILS AND CAN PUT THEMSELVES BACK IN THAT SITUATION</u>

IF RECALL:

IF ASKING ABOUT A MORE RECENT ORDER THAN IN SAMPLE:

- What date and time did you make the order?
- How much did it cost?

- Roughly how many items did you order?

What type of items did you buy?

And which of these categories would you say the items you ordered fall into?

- Any fresh food items (e.g. refrigerated, vegetables, bread)
- Any frozen food items
- Any other food items (e.g. tin foods, packaged foods)
- Alcoholic drink(s)
- Non-alcoholic drink(s)
- Tobacco products or e-cigarettes
- Pet food
- Household basics (e.g. cleaning products toilet rolls)
- Toiletries, health & beauty, baby products
- Non-grocery products

Was there a delivery charge? How much?

AMAZON:

- What time did you make the order?
- Did you book a delivery slot? What was it?
- Do you recall when it was delivered?

DELIVEROO:

- Do you recall how long it took to be delivered?

Which of these best describes the purchase you made:

- A main shop
- A planned top-up shop
- An unplanned top-up shop
- An impulse shop
- An emergency shop

IF PARTICIPANT DOES NOT RECALL/ DID NOT MAKE THE ORDER: IF NO, who was it? E.g. friend/partner/family member

Do many people use your account to place orders?

Is it common for other people to use your account to make orders or is it quite a rare event?

I Would like to ask you about the last order that you made using [Amazon Prime Now / Amazon Fresh / Deliveroo] of grocery items e.g. non-restaurant fresh food, alcoholic drinks, tobacco products, toiletries etc.

When did you make the order (date and, if recall, time)?

What type of items did you buy?

And which of these categories would you say the items you ordered fall into?

- Any fresh food items (e.g. refrigerated, vegetables, bread)
- Any frozen food items

- Any other food items (e.g. tin foods, packaged foods)
- Alcoholic drink(s)
- Non-alcoholic drink(s)
- Tobacco products or e-cigarettes
- Pet food
- Household basics (e.g. cleaning products toilet rolls)
- Toiletries, health & beauty, baby products
- Non-grocery products

And how much did it cost?

Was there a delivery charge? How much?

Roughly how many items did you order?

AMAZON:

- What time did you make the order?
- Did you book a delivery slot? What was it?
- Do you recall when it was delivered?

DELIVEROO:

- Do you recall how long it took to be delivered?

Which of these best describes the purchase you made:

- A main shop
- A planned top-up shop
- An unplanned top-up shop
- An impulse shop
- An emergency shop

Purchase motivations 10 mins (20-25)

Did you consider any other options to get these items? Why did you not use them?

- N.B. FOR THOSE WHO DID NOT MAKE THE PURCHASE LISTED IN THE SAMPLE, GET THEM TO THINK ABOUT THE LAST PURHASE THEY MADE USING IT

What were the most important factors that made you decide to place your order online rather than visiting a physical shop? SPONTANEOUS THEN PROBE WHERE NEEDED:

- Wanted it quickly
- Habit
- Unable to go to the shop (probe why not)
- Busy, saves time
- Bad weather
- Other

And what were the most important factors that made you decide to place your order with Amazon/Deliveroo rather than another online delivery provider? SPONTANEOUS THEN PROBE WHERE NEEDED:

- Speed of delivery

- Price of items purchased
- Delivery charge
- Range
- Minimum order amount/size
- Have used them before/already registered/have subscription
- Anything else?

And which one of these was the main reason why you chose to use Amazon/Deliveroo?

I'd like to focus on a few specific elements.

DELIVERY SPEED What about the speed of delivery?

- How long does it normally take to deliver?
- Is speed of delivery important?
- What is the longest you are willing to wait to get the delivery through this service? What would you have done if the delivery time had been 45 minutes? An hour? 1.5 hours?
- Would you order more if delivery was faster?

DELIVERY CHARGE

- Do you normally pay a delivery charge or not?
- does this impact your decision to use it?

PRICE/COST

- When you assess the price, do you consider the price of the items and the delivery charge separately? Or do you just look at the total cost including both?

RANGE

- What about the range of products you can get delivered? How would you compare the range to a…?
  - Petrol station
  - Small convenience store
  - Supermarket
- Is range important to you?
- Would you have been willing to accept a different brand or varieties of the products you purchased?
- Would you have preferred a different brand/variety of the product(s) you purchased.

MINIMUM BASKET SIZE

- Is there a minimum order size? How does this work?
- Does it impact your decision?
- Did you buy additional items to reach the minimum order?
- Are there occasions where you don't make an order because of the minimum order size?

BRAND

- What about brand of supplier [i.e. Amazon/Deliveroo]? Is this a part of your decision or not?

- E.g. what if it was the same service offered by Tesco, or Waitrose, or another online delivery company?
- Who was the actual merchant that provided the products (e.g. Morrisons, Whole Foods, Co-op, an off-licence?)
- Would you have made the same or similar order with [Amazon/Deliveroo] if they had been supplied by a different merchant?
- Would you have made the order from the same merchant if it was available on a different platform (eg through Uber Eats or Ocado)

Is there anything that stops you from using the service more?

- IF NEEDED, PROBE:
- Items' prices too high
- Limited range
- Minimum order too high
- Delivery charges
- Unreliable
- Poor/variable quality of goods
- Website/app difficult to use

IF MORE THAN ONE REASON GIVEN: Which of these is the main reason?

Use of other OCGs 10 mins (30-35)

Thinking about that particular/last order, what would you have done instead if Deliveroo/Amazon was not available:

- Used another online delivery supplier
- Not made purchase
- Gone to a physical store

Why do you say this?

If online, which one?

IF NOT PURCHASED OR GONE TO PHYSICAL STORE: why would you have not used another online delivery supplier?

Are you aware of any other companies that offer fast same-day delivery groceries?

DELIVEROO CUSTOMERS:

- Do you know about Amazon Prime Now or Amazon Fresh?
- Tell me what you know about it
- Have you ever used it?
- Would you consider using it?
- What if there was no subscription charge? Would you consider using it for this kind of purchase?

AMAZON CUSTOMERS:

- Do you know about Deliveroo's non-restaurant delivery? i.e. of grocery items
- Tell me what you know about it

- Have you ever used it?
- Would you consider using it?

I would now like to understand if or how your use of Amazon / Deliveroo might change in different circumstances. Thinking about the order we discussed earlier (REMIND OF DETAILS IF NEEDED), I would like you to tell me what you would have done in the following scenarios.

SHOW SCENARIOS – EMAIL TO PARTICIPANT (PASSWORD PROTECTED SO CANNOT OPEN IN ADVANCE)
N.B. EACHPARTICIPANT WOULD SEE A CHOICE EXERCISE WITH THE VALUES VARYING DEPENDING ON THEIR ACTUAL SPEND FROM THE SAMPLE. EACH PARTICIPANT TO BE SHOWN 3 VARIATIONS – EXAMPLE SHOWN BELOW

Q1. I would like you to think about the online grocery delivery purchase you made on 31 January 2020. Look at the two options – A and B – below and tell me, if you were in that situation again and the option you used to buy was not available, which would have been your preferred choice.

If you would have bought from a shop instead or would not have bought at all, please say.

	Option A	**Option B**
Delivery charge	£7.99	£3.99
Price of order	£32.76	£17.64
Speed of delivery	3 hours	30 minutes
Range of products offered	Like at a small convenience store	Like at a supermarket
Minimum basket size	£5	£5
	◯	◯

I would buy from a shop instead	◯
I would not buy at all	◯

FOR EACH SCENARIO, ASK WHAT THEIR CHOICE WOULD BE, THEN…

- How did you decide?
- Was there anything missing for you to be able to make the best choice?
- Were the different elements of the choices clear? Could they be made any clearer?
- Did the options presented make sense? Were you able to compare them?

- Delivery charges
- Price levels
- Speed of delivery
- Range
- Basket size

– Did you consider subscription costs or not?

Wrap and Close 2 mins (32-37)

How old are you?

Take address details to send cheque to

Thank you very much.

Appendix B

Cognitive interview discussion guide

3380 / CMA Online Convenience Grocery
Cognitive Interview Topic Guide

Good morning/afternoon/evening... My name is … and I work for an independent market research company called Accent. We are conducting research for the Competition and Markets Authority (the CMA), the UK's competition regulator.

The CMA is undertaking research with customers of [Amazon Prime Now / Amazon Fresh / Deliveroo] to understand how customers of this service use it.

The research is to support the CMA's merger investigation in the online convenience grocery delivery market. To enable this research to take place, the CMA used its statutory powers under the Enterprise Act to require [Amazon Prime Now / Amazon Fresh / Deliveroo] to provide contact details for 200 customers who had recently placed an order for groceries. You were included in this sample.

OFFER TO SEND THE CONFIRMATION EMAIL AGAIN IF NEEDED – PARTICIPANT MAY NEED TO BE CALLED BACK AFTER THEY HAVE READ IT, IF THEY PREFER

Thank you very much for agreeing to help us with this research and I'd like to remind you that you will receive a £30 cheque if you complete the interview.

The research is being conducted in accordance with the Code of Conduct of the Market Research Society (MRS) and also with the Data Protection Act . This means that everything you say is confidential and will not be attributed to you personally unless you give your permission for us to pass your comments on in named format.

Our discussion is being recorded. This is standard market research procedure and is to ensure accuracy – so I do not have to try to remember what you have said – and for analysis purposes only. The recordings will not be passed to any third party not associated with the research project, and in reporting the findings from this research everything that you say will be confidential and will be reported in grouped format only.

The discussion will last around 45 minutes.

Can I stress that we are interested in your views - there are no right or wrong answers.

We have developed a questionnaire for the research and we are just in the testing phase to ensure it is working effectively. In a moment, I will hand over control of the screen to you so you can complete the survey. We would like you to go through the questionnaire as you would normally, but I would like you to talk aloud as you are reading the questions and also to talk through your thought process as you are answering the questions. As you are deciding between different options I want to understand how you are making those choices. As I said before, there are no right or wrong answers.

Participant questionnaire completion

PARTICIPANT COMPLETES THE SURVEY – STOP THEM ONCE THEY GET TO THE CLASSIFICATION QUESTIONS (GENDER)

Remind participant to read each question aloud (to help uncover any stumbles or confusion in question wording) and also to talk aloud as they deliberate over any options

Otherwise, do not interfere with the participant as they complete it

Make a note of:

- Any significant pauses before or delays in responding
- Mentions of any question or section of text being confusing / complicated / unclear
- Response options that they struggle to choose between
- Questions they ask about elements of the survey (try not to answer these unless it prevents them from completing the rest of the survey)
- Their response to the following questions:
  - Q2 (recall of order in the sample)
  - Q5 (most recent order)
  - Q9 (type of shop it represents – check for any confusion between codes 3 and 5)
  - Q15 (how much of grocery shopping is through Prime Now / Deliveroo)
  - Q19 (which online grocery providers operate in local area)
  - The choice sets, including the different versions they see (price and also layout of choice options)

Participant understanding / clarity / probing

Go, in order, through any questions or sections of text/explanation that participant struggled with

Then go through each of following, reading out the question if needed. You can also click back to the relevant screen if needed:

CONJOINT

- REVIEW ANSWERS TO THE DIAGNOSTIC QUESTIONS – FOLLOW UP ON ANY PROBLEMS WITH UNDERSTANDING
- How easy or difficult did you find the choices? Why do you say this?
  - What made it difficult
  - Would anything have made it easier?
  - Was there anything missing from the descriptions of the options?
- Were you thinking of the same order mentioned earlier in the questionnaire? Or something more general?
- Before the choice exercises, it explained what the 'price of order' referred to. What did you understand by this? What do you think it was telling you?

- INFORMATION BUTTONS
  - IF USED: were these useful?
  - IF NOT USED: did you see the (i) buttons? Did you consider using them?
- There were two different layouts of the information – which did you prefer and why?
- When the range was 'small range' how did they assess the option?
- When you made your choices what items were you imagining you were purchasing?
  - Was it exactly the same items as you bought in your mentioned order? Or different?
- The information presented referred to 'a typical basket of goods'
  - Did you try to imagine what that would be?

Q2

- How easily were you able to recall the order?
- What items did they buy
- Did you check your account or any other information to help you?
- Would anything have made it easier?

Q3 – Q8 (MOST RECENT ORDER)

- How easily were you able to recall your most recent order?
- Were there any parts that were harder to recall?

Q9

- IF PARTICIPANT CHOSE OPTION 3 OR 5: did this option seem different to 3 / 5? How did you choose between them?

Q15

- How easy did you find it to answer this question?
- What kind of things were you thinking about when you considered 'groceries'?

Q18

- How did you choose between the options presented?

Q19

- How certain were you about these providers operating in your area?
- What parts of their service were you thinking about?

Wrap and Close

Record address details to send the £30 cheque to – add to the Sharepoint

Thank you very much.

Appendix C

Items available under the ‘Small range’ attribute option

Appendix C Items available under the 'Small range' attribute option

As discussed in section 2.4 of this report, a list of product categories and product items was presented to illustrate the 'limited range' option presented in the choice exercises. The list below was available to participants when they clicked an information button that appeared whenever the limited range option was present. The list was developed based on the Co-Op at Corporation Street, 1 Balloon Street, Manchester, M44BE.

Category	Items
Chocolate, Sweets & Biscuits	Cadbury Heroes Carton 185g
	Kit Kat 4 Finger Gold Chocolate Bar
	Cadbury Milk Tray Chocolate Box 360g
	KitKat Chunky Milk Chocolate Bar 4x 40g
	KitKat Original 9 x 20.7g
	Cadbury Dairy Milk Giant Buttons Chocolate Bag 119g
	Cadbury Twirl Bites Chocolate Bag 109g
	Milkybar White Chocolate Sharing Pouch 103g
	Munchies Chocolate Sharing Bag 104g
	Maltesers Fairtrade Pouch 93g
	Haribo Tangfastics Bag 180g
	Haribo Starmix 180G
	Cadbury Dairy Milk Chocolate Bar 110g
	Cadbury Twirl 4 Pack 136G
	Co-op Irresistible All Butter Triple Chocolate Cookies 200g
	McVitie's Digestives Milk Chocolate 266g
	Wrigley's Extra White Bubblemint 46 pieces
Sandwiches, Crisps, Snacks & Nuts	Co-op Classic Ham & Cheese Sandwich
	Co-op Classic Bacon, Lettuce & Tomato Sandwich
	Co-op Simply Chicken Mayo Sandwich
	Co-op Classic Egg & Cress Sandwich
	Co-op Classic Chicken Salad Sandwich
	Co-op Cheese Ploughman's Sandwich
	Co-op Classic Prawn Mayonnaise Sandwich
	Co-op Classic Low Fat Tuna & Cucumber Sandwich
	Fridge Raiders Slow Roasted Chicken Bites 60g
	Fridge Raiders Southern Style Chicken Bites 60g
	Pringles Sour Cream & Onion Crisps, 200g
	Pringles Original Crisps, 200g
	Co-op Irresistible Hand Cooked Sea Salt & Chardonnay Wine Vinegar Crisps 150g
	Co-op Irresistible West Country Cheddar & Red Onion Chutney Crisps 150g
	Co-op Irresistible Lightly Sea Salted Crisps 40g
	Co-op Sweet & Salted Popcorn 100g
	Co-op Salted Popcorn 100g
	Walkers Ready Salted Crisps 6x25G
	Walkers Variety Crisps 6x25G
	Walkers Sensations Thai Sweet Chilli Crisps 150g

	Walkers Wotsits Cheese 6X16.5G
	Doritos Cool Original Tortilla Chips 150g
	Doritos Chilli Heatwave Tortilla Chips 150g
	Co-op Roasted & Salted Pistachios 150g
	Co-op Dry Roasted Peanuts 275g
	Co-op Houmous 200g
	Co-op Soured Cream & Chive Dip 200g
	Co-op Irresistible Coleslaw 300g
Tea, Coffee & Soft Drinks	Nescafe Azera Americano Instant Coffee 100g
	Nescafe Gold Blend Instant Coffee 100g
	Nescafé Gold Blend Instant Coffee 200g
	Nescafe Alta Rica Coffee 100G
	Taylors of Harrogate Yorkshire Tea Bags 250g
	PG Tips Original 160 Pyramid Tea Bags 464g
	Cadbury Instant Hot Chocolate 400g
	Buxton Still Natural Mineral Water 1.5L
	Buxton Still Natural Mineral Water 1L
	Evian Still Natural Mineral Water 1.5L
	San Pellegrino Carbonated Natural Mineral Water 1L
	Coca-Cola Zero Sugar 1.25L
	Coca-Cola Original Taste 1L
	Diet Coke 1.25L
	Pepsi Regular 1.5 Litres
	Co-op Diet Sparkling Lemonade 2 Litre
	Irn-Bru 500ml Bottle
	San Pellegrino Sparkling Lemon 330ml
	Red Bull Energy Drink, 250ml (4 Pack)
	Tropicana Smooth Orange Juice 950ml
	Lucozade Sport Orange 4 x 500ml
	Innocent Smoothie Strawberries & Bananas 750ml
	Appletiser 100% Apple Juice 750ml
	Red Bull Energy Drink, Sugar Free, 250ml (4 Pack)
	Bottlegreen Cordial Hand-Picked Elderflower 500ml
	Fever-Tree Premium Indian Tonic Water 500ml
Pizza, Ready Meals and Cooked Meat	Co-op Thin & Crispy Double Pepperoni 339g
	Co-op Thin & Crispy Margherita 325g
	Co-op Irresistible Wood Fired Salami Diavola Pizza 496g
	Co-op Irresistible Wood Fired Pancetta, Mushroom & Mascarpone Pizza 497g
	Co-op Irresistible Margherita 510g
	Co-op Limited Edition Irresistible Wood Fired Salsiccia Pizza 215g
	Co-op Irresistible Wood Fired Chicken Arrabbiata Pizza 510g
	Co-op Irresistible Wood Fired Spinach & Ricotta Pizza 465g
	Co-op Irresistible Luxury Cottage Pie 425g
	Co-op Italian Menu Chicken & Bacon Pasta Bake 400g
	Co-op Chicken Kievs 325g
	Co-op Classic Menu Sausage & Mash 400g
	Co-op Irresistible Vintage Cheddar Mac & Cheese 350g

	Co-op Italian Beef Lasagne 400g
	Co-op Hot & Spicy Chicken Wings 350g
	Co-op Sliced Chicken Breast 170g
	Co-op Roast Chicken Breast Fillets 230g
	Rustlers Flame Grilled BBQ Rib 157g
	Rustlers Flame Grilled Cheese Burger 162g
	Rustlers Flame Grilled Quarter Pounder 190g
	Co-op British Smoked Rindless Back Bacon 8 Rashers 300g
	Co-op Smoked Salmon 100G
Fruit & Veg	Co-op Carrot Batons 300G
Frozen Food	Birds Eye 10 Cod Fish Fingers 280g
	Quorn Mince 300g
	Linda McCartney 6 Vegetarian Sausages 270g
	McCain The Home Chip Straight 900g
	McCain Crispy French Fries 900g
	Ben & Jerry's Fairtrade Karamel Sutra Core 500ml
	Ben & Jerry's Cookie Dough 500ml
	Co-op Irresistible Passion Fruit & Mango Sorbet 500g
	Co-op Rainbow Uni-Cones 4x 135ml 500g
	The Ice Co Premium Ice Cubes 1kg
	Magnum Classic Ice Cream 110ml
	Rowntree's Fruit Pastilles Lollies 4x 65ml
	Co-op Ice Cubes 2kg
Tins, Jars & Packets	Heinz Beans 415g
	John West No Drain Tuna Steak with a Little Brine 110g
	John West No Drain Tuna Steak MSC with a Little Sunflower Oil 110g
	Green Giant Original Naturally Sweetcorn 198g
	Pot Noodle King Chicken & Mushroom Flavour 114g
	Pot Noodle King Beef & Tomato Flavour 114g
	Batchelors Super Noodles Chicken Flavour 75g
	Nando's Peri-Peri Bag & Bake Medium 20g
	Old El Paso Crunchy Original Tortilla Chips 185g
	Co-op Smooth Peanut Butter 340g
	Co-op Crunchy Peanut Butter 340g
	Co-op Strawberry Jam 454g
	Marmite Yeast Extract 250g
	Hellmann's Real Mayonnaise 430ml
	Hellmann's Light Mayonnaise 430ml
	Heinz Classic Barbecue Sauce 480g
	HP The Original Sauce 425g
	Tilda Pure Basmati Rice 500G
	Co-op Penne Rigate 500g
	Dolmio Original Sauce For Bolognese 500G
	Barilla Fusilli 500G
	Barilla Spaghetti 500G
	Tate & Lyle Fairtrade Granulated Sugar 1kg
	Co-op British Fresh Semi-Skimmed Milk 4 Pints/2.272L

Milk, Cheese & Yogurt	Co-op British Fresh Semi-Skimmed Milk 2 Pints/1.136L
	Co-op British Fresh Whole Milk 4 Pints/2.272L
	Co-op British Fresh Whole Milk 2 Pints/1.136L
	Co-op British Fresh Skimmed Milk 4 Pints/2.272L
	Co-op British Fresh Skimmed Milk 2 Pints/1.136L
	Cravendale Semi-Skimmed 2 Litres Milk
	Arla LactoFree Semi Skimmed Milk Drink 1 Litre
	Co-op Strawberry Milk 1 L
	Co-op Chocolate Milk 1L
	Alpro Soya Light Drink 1L
	Alpro Roasted Almond Unsweetened U.H.T. 1L
	Alpro Almond Unsweetened 1ltr
	Cathedral City Mature Cheddar 350g
	Strings & Things Cheestrings Twisted 4 x 20g (80g)
	Lurpak Spreadable Lighter Slightly Salted 500g
	Clover Spreads 500g
	Alpro Plain Soya with Yogurt Cultures 500g
	Müller Corner Strawberry and Peach Apricot Yogurts 4x 143g
	Muller Corner Crunch 4 Pack 4x 135G
	Lurpak Spreadable Slightly Salted 500g
	Starbucks Fairtrade Frappuccino Coffee Drink Mocha 250ml
	The Collective Raspberry Gourmet Live Yoghurt 450g
	Starbucks Fairtrade DoubleShot Espresso Premium Coffee Drink 200ml
	Fage Total 0% Natural Fat Free Greek Recipe Strained Yoghurt 500g
	The Collective Great Dairy Passion Fruit Gourmet Live Yoghurt 450g
Cereal	Kellogg's Krave Chocolate Hazelnut 375g
	Kellogg's Variety Pack Cereal x8
	Kelloggs Crunchy Nut Clusters Chocolate Curls 450G
	Kellogg's Special K Red Berries 360G
	Cheerios Multigrain 375g
	Quaker Oat So Simple Original Porridge Pot 45g
	Quaker Oat So Simple Golden Syrup Porridge Pot 57g
Bakery	Warburtons Toastie White 800g
	Warburtons Seeded Batch 800g
	Kingsmill Soft White Bread Medium 800g
	New York Bakery Co. 5 The Original Bagels
	Warburtons 6 Crumpets
	Co-op Irresistible Chocolate Cake
	Co-op Irresistible Carrot Cake
Baby	Aptamil Follow On Milk 2 6-12 Months 800g
	Aptamil First Infant Milk from Birth - 6 Months 800g
	SMA PRO First Infant Milk 1 from Birth 800g
	Cow & Gate 1 First Baby Milk Formula From Birth 800g
	Cow & Gate 2 Follow On Baby Milk Formula 800g
	Co-op 80 Sensitive Fragrance Free Baby Wipes
	Sudocrem Antiseptic Healing Cream 125G
	Bonjela Soothing Teething Gel 15ml

Toiletries	Andrex Classic Clean 4 Rolls
	Bodyform Ultra Towels Normal Wings 14x
	Tampax Compak Regular Tampons Applicator 18x
	Always Daily's Singles Panty Liners Normal 20 Panty Liners
	Sensodyne Sensitive Toothpaste Repair & Protect Original 75ml
	Oral B Pro Expert Protection Clean Mint Toothpaste 75ML
	Colgate Max White Medium Toothbrush
	Corsodyl Mint Mouthwash 300ML
	Original Source Tingly Mint & Tea Tree Shower 250ml
	Sanex Dermo Moisturising Shower Gel 500ML
	TRESemmé Moisture Rich Luxurious Moisture Shampoo 500ml
	TRESemmé Moisture Rich Luxurious Moisture Conditioner 500ml
	Co-op Hand Care Aloe Vera Anti-Bacterial Handwash 250ml
	Nivea Soft Refreshingly Soft Moisturising Cream 75ml
	Nivea Deodorant Black & White Invisible Clear Female 250ML
	Sure Men Active Anti-perspirant Deo 250ML
Laundry, Cleaning & Household	Ariel 3in1 Pods 27S
	Ariel Washing Gel Original 24 Washes
	Daz Reg Powder 22 Washes 1.43KG
	Comfort Pure Fabric Conditioner 36 Wash 1.26L
	Fairy Platinum All in One 27 Dishwasher Capsules Lemon 402g
	Fairy Original 433ml
	Dettol Cleansing Surface Wipes 36 Large Wipes
	Regina Blitz Household Towel 100 Super-Sized Sheets
	Domestos Extended Germ-Kill Original Bleach 750ml
	Flash With Bleach Spray 500ML
	Flash All-Purpose Cleaner Crisp Lemons 1L
	Vanish Gold Carpet Care Foam 600ml
	Co-op Antibacterial Floor Wipes
	Dettol Anti-Bacterial Surface Cleanser 750ml
	Harpic Power Plus Citrus Fresh 750ml
	Co-op Thick Bleach Lime Zest 750ML
	Co-op 10m Strong Kitchen Foil 300mm Wide
Pet	Felix As Good As It Looks Adult Cat Food Ocean Feasts in Jelly 12 x 100g
	Purina ONE Adult Cat Food with Chicken & Whole Grains 800g
	Whiskas Cat Milk 200ml
	Go-Cat Chicken with Turkey and Vegetables 1+ Years 825g
	Catsan Cat litter 10Ltr
Spirits	Smirnoff Triple Distilled Vodka 70cl
	Co-op Imperial Vodka 1L
	Gordon's Special Dry London Gin 70cl
	Absolut Vodka 350ml
	Absolut Vodka 700ml
	Absolut Raspberri - Raspberry Flavoured Vodka 700ml
	Baileys Irish Cream Liqueur 70cl
	Disaronno Liqueur 500ml
	Jagermeister 50cl

	Jack Daniel's Old No.7 Tennessee Whiskey 70cl
	Jameson Triple Distilled Irish Whiskey 700ml
	The Glenlivet Founder's Reserve Single Malt Scotch Whisky 70cl
	Captain Morgan Original Spiced Gold 70cl
	Martell VS Fine Cognac 70cl
	Malibu Caribbean Rum with Coconut Flavour Original 70cl
	Courvoisier Cognac V.S. 70cl
	Bacardi Carta Blanca 70CL
	Gordon's Premium Pink Distilled Gin 70cl
Wine & Champagne	Co-op Fairtrade Pinot Grigio 75cl
	Co-op Fairtrade Chenin Blanc 75cl
	Co-op Fairtrade Cabernet Sauvignon 75cl
	Co-op Fairtrade Chardonnay 75CL
	Co-op Argentinian Malbec San Juan 75cl
	Co-op Fairtrade Bonarda Shiraz 75CL
	Co-op Fairtrade Rose 75cl
	Hardys Voyage Shiraz Mourvedre 75cl
	Brancott Estate Sauvignon Blanc 750ml
	The Ned Sauvignon Blanc 750ml
	Hardys Voyage Chardonnay Pinot Grigio 75CL
	Co-op Irresistible Fairtrade Sauvignon Blanc 75cl
	Oyster Bay Marlborough Sauvignon Blanc 750ml
	Campo Viejo Rioja Tempranillo 750ml
	Co-op Irresistible Prosecco 75CL
Beers & Cider	Peroni Nastro Azzurro 4x 330ml
	Peroni Nastro Azzurro 620ml
	Strongbow Dark Fruit Cider 4 x 440ml Cans
	Strongbow Original Cider 4 x 440ml Cans
	Heineken Lager Beer 4 x 440ml Cans
	Heineken 0.0 Alcohol Free Beer 4x330ml
	Heineken 0.0 Alcohol Free Beer 4x330ml
	Heineken 0.0 Alcohol Free Lager Beer 330ml Can
	Stella Artois Lager Beer Cans 4 x 440ml
	San Miguel Premium Especial Original Lager Beer 660ml
	Kopparberg Premium Cider with Strawberry & Lime 500ml
	Kopparberg Premium Cider with Mixed Fruit 4 x 330ml
	Foster's Lager Beer 10 x 440ml Cans
	Amstel Lager Beer 4 x 440ml Cans
	Red Stripe Jamaican Lager Beer 4 x 440ml Cans
	Corona Extra 4 x 330ml
	Desperados Tequila Beer Original 3x 33cl
	BrewDog Punk IPA Post Modern Classic 330ml
	Fosters Lager Can 4X440ML
	Guinness Draught in Can 4X440ML
	Birra Moretti Lager Beer 4 x 330ml Bottles
Tobacco & E-Cigarettes	Benson & Hedges Blue King Size 20 Cigarettes
	Marlboro Gold 20's

	Amber Leaf Tobacco Pouch 30g
	Mayfair Superkings 20 Cigarettes
	Golden Virginia The Original Includes Cigarette Papers 30g
	Sovereign Blue Superkings 20 Cigarettes
	JPS Players Real Red 20
	Lambert & Butler Original Silver 20
	JPS Players Superkings Real Red 20
	Blu Pro Kit
	Blu Liquid Blueberry 1.6% 10ml
	Carlton Red Ks 20S
	Benson & Hedges Superkings Blue 20 Cigarettes
	Rothmans Blue Superkings 20 Cigarettes
	Mayfair King Size 20 Cigarettes
	Carlton Superkings Red 20
GRO - Plant Based Food	Co-op GRO Sizzlin' Sausages 350g
	Co-op GRO Smokin' Bean Burgers 240g
	Co-op GRO Slow Roast Tomato & Veg Pasta Salad 270g
	Co-op GRO Beet Falafel & Giant Cous Cous Salad
	Co-op GRO Spicy Squash & Mex Bean Salad
	Co-op GRO Falafel & Taboulleh Salad
	Co-op GRO Hoisin Du'k Wrap
	Co-op GRO Chick'n & Stuffin'
	Co-op GRO Falafel & Spiced Houmous Wrap
	Co-op GRO Crunchy Veg Burgers
	Co-op GRO The Kashmiri Spice Pizza
	Co-op GRO Mighty Meatballs
	Co-op GRO Hoisin Du'k Protein Pot
	Co-op GRO Meatballs
	Co-op GRO Beat Burgers 227g
	Co-op GRO Porcini Ravioli
	Co-op GRO Meat Free 2 Mexican Bean Burgers 227g
	Co-op GRO Mango & Passion Fruit Bircher

Appendix D

Survey questionnaire

OCG Customer Research – online survey

Introduction Screen

Accent, an independent market research company, is conducting this survey on behalf of the Competition and Markets Authority (CMA), a government body, and asking you to complete a survey about your recent purchase [AMAZON PRIME of groceries] from [Amazon Prime Now / Deliveroo]. It should take about 10 minutes and as a thank you for taking part, anyone completing the survey will receive a £5 incentive (an electronic voucher redeemable in a range of high street and online stores).

Taking part in the survey is completely voluntary and if you have any queries about it you can contact CMAGroceryResearch@accent-mr.com or 020 8742 2211. If you would like to confirm Accent's credentials, please call the Market Research Society's verification service for free on 0800 975 9596. Alternatively, you can get in touch with the CMA (its Public Enquiries line on 020 3738 6000, or at CMAOnlineSurvey@cma.gov.uk).

For convenience you can stop and return to complete the questionnaire as many times as you wish, although once submitted you will not be able to enter again.

We will just start with some scoping questions to check your eligibility for the main interview.

Q1. DELETED

S1. Which of these age bands do you fall into?

Under 16 **THANK AND CLOSE**
16-24
25-34
35-44
45-54
55-64
65 or over
Prefer not to say **THANK AND CLOSE**

Q2. According to our records you ordered groceries online from [Amazon Prime Now/Deliveroo] costing [FULL ORDER VALUE, INCLUDING ANY DELIVERY CHARGES AND VAT] [IF ORDER VALUE CONTAINS SEPARATE DELIVERY CHARGE, including delivery charges,] on [SAMPLE DATE] at [SAMPLE TIME].

[AMAZON]: The order included [BULLET POINT GROCERY CATEGORIES FROM DATA PROVIDED].

[DELIVEROO]: The order included the following items (Top 7 items by value listed, multiple items are only shown once) [GROCERY ITEMS FROM DATA PROVIDED]:

Do you remember that order?

Yes – I personally placed this order

Yes – I placed this order together with someone else
No – someone else in the household placed the order
No - no-one in the household placed that order
Can't remember

Q3. **ASK IF Q2 =3-5** Have you personally made [AMAZON ONLY: a same-day] [DELIVEROO an] order of online groceries from [Amazon Prime Now/Deliveroo] in the past 4 weeks? By groceries, we mean food (e.g. fresh food, frozen food, tins etc, but not including restaurant/take-away food), alcohol, cigarettes, toiletries, household cleaning products etc.

Yes
No **THANK AND CLOSE**
Can't remember **THANK AND CLOSE**

Q4. **ASK IF Q2=1 OR 2** Was the order you placed on [SAMPLE DATE] the last time you ordered groceries for same-day delivery from [Amazon Prime Now/Deliveroo]?

Yes
No, I have placed a more recent order
Don't know/can't remember

We will ask a number of questions about your recent grocery purchase using [Amazon Prime Now/Deliveroo]. If you do not recall the details of the order, it may help to check your order history to refresh your memory.

Q5. **IF Q4=2 OR Q3=1 ELSE SKIP** When did you place your most recent same-day grocery order with [Amazon Prime Now/Deliveroo]? **SINGLE CODE**

Today
1-3 days ago
4-7 days ago
8-10 days ago
11-14 days ago
More than two weeks ago
Two to four weeks ago
More than four weeks ago **SKIP TO MAIN QUESTIONNAIRE IF Q2=1 OR 2. THANK AND CLOSE IF Q2=3-5**
Don't remember **SKIP TO MAIN QUESTIONNAIRE IF Q2=1 OR 2. CLOSE IF Q2=3-5**

Q6. **IF Q4=2 OR Q3=1 ELSE SKIP** Approximately how much did you spend on your most recent order, including any delivery or service charges? Please write the amount into the box below.

Write your answer here: £ **DP CREATE BOX – NUMERIC VALUE ONLY, MUST BE HIGHER THAN ZERO**
Can't remember **SKIP TO MAIN QUESTIONNAIRE IF Q2=1 OR 2. CLOSE IF Q2=3-5**

Q6a. IF NUMERIC VALUE PROVIDED AT Q6 ELSE SKIP And did this include a separate charge for delivery?

Yes
No **USE Q6 VALUE IN CONJOINT PRICE ATTRIBUTE**
Don't know / Can't remember **USE Q6 VALUE IN CONJOINT PRICE ATTRIBUTE**

Q6b. IF Q6a = 1 ELSE SKIP And how much was that delivery charge?

Enter delivery charge amount here: £ **DP CREATE BOX – NUMERIC VALUE ONLY, MUST BE HIGHER THAN ZERO BUT LOWER THAN Q6 VALUE. USE Q6 MINUS Q6a IN CONJOINT PRICE ATTRIBUTE**
Don't know / Can't remember **USE Q6 VALUE IN CONJOINT PRICE ATTRIBUTE**

Q7. **IF Q4=2 OR Q3=1 ELSE SKIP** And for your most recent order, which of these categories did the items you ordered fall into? Please tick all that apply. **MULTICODE**

Any fresh food items (e.g. refrigerated, vegetables, bread)
Any frozen food items
Other food items such as tinned foods, packaged foods etc.
Alcoholic drink(s)
Non-alcoholic drink(s)
Tobacco products or e-cigarettes
Pet food
Household basics (e.g. cleaning products toilet rolls)
Toiletries, health & beauty, baby products
Prepared hot food [DELIVEROO ONLY]
Non-grocery products
Don't know/can't remember **SINGLE CODE.**

IF DO NOT CODE ANY OF 1-9:

- **IF Q2=1 OR 2 SKIP TO MAIN QUESTIONNAIRE**
- **IF Q2=3-5 THANK AND CLOSE**

Q8. **IF Q4=2 OR Q3=1 ELSE SKIP** How long after your order was placed were your groceries delivered?

Within 30 minutes
Between 31 minutes and 1 hour
Between 1 and 2 hours
Between 2 and 4 hours
Longer than 4 hours but the same day
The next day or later **THANK AND CLOSE IF Q2=3-5**
Not delivered yet **THANK AND CLOSE IF Q2=3-5**
Can't remember **THANK AND CLOSE IF Q2=3-5**

IF Q2=1 OR 2 AND ANY OF FOLLOWING CONDITIONS MET, USE <u>SAMPLE ORDER VALUE</u> IN CONJOINT – "SAMPLE INFO"

- **DO NOT RECALL DATE OF ORDER OR MORE THAN 4 WEEKS AGO AT Q5 (CODES 8-9)**
- **DO NOT ENTER VALUE (ORDER COST) AT Q6 (CODE 2)**
- **DO NOT RECALL CATEGORY OF ITEMS ORDERED AT Q7 (CODE 12)**
- **DO NOT CODE ANY OF CODES 1-9 AT Q7**
- **CODE 6-8 AT Q8 (NOT SAME DAY DELIVERY OR DO NOT RECALL DELIVERY TIME)**
- **CODE 1 OR 3 AT Q4**

OTHERWISE, USE <u>Q6 ORDER VALUE</u> IN CONJOINT – "QUESTIONNAIRE INFO"

NEW SCREEN

In the remainder of the questionnaire, you will be asked a number of questions relating to a particular order you made with [Amazon Prime Now/Deliveroo]. When responding

to these, please think about the [IF Q6 ORDER VALUE most recent order you made / IF SAMPLE ORDER order you made on SAMPLE DATE at SAMPLE TIME]. As a reminder, this order was as follows:

- Date of order: IF "QUESTIONNAIRE INFO" SHOW Q5 RESPONSE / IF "SAMPLE INFO" SHOW SAMPLE ORDER DATE
- IF "SAMPLE INFO" Time: SHOW SAMPLE ORDER TIME
- Order cost (including delivery and any other charges): IF "QUESTIONNAIRE INFO" SHOW RESPONSE AT Q6 / IF "SAMPLE INFO" SHOW ORDER COST FROM SAMPLE (INCLUDING COMBINED TOTAL OF ORDER VALUE, DELIVERY CHARGE, OTHER FEES)
    - DO NOT SHOW IF Q6a=2 OR 3 OR IF Q6b=2 Of which delivery charge: IF "SAMPLE INFO" DELIVERY CHARGE FROM SAMPLE / IF "QUESTIONNAIRE INFO" Q6a NUMERIC VALUE
- Order items included: [IF "SAMPLE INFO"] SHOW ITEMS / CATEGORIES FROM SAMPLE [IF "QUESTIONNAIRE INFO"] SHOW ITEMS FROM Q7

Q9. Thinking about your [IF "QUESTIONNAIRE INFO" most recent grocery order / IF "SAMPLE INFO" grocery order placed on [SAMPLE DATE] from [Amazon Prime Now/Deliveroo], please select from the list below the one that best describes the type of shop it was. [LINE BREAK] Please select the one which best describes the main purpose of your order. **SINGLE CODE RANDOMISE OPTIONS**

An impulse or indulgence shop (items such as alcohol, cigarettes, chocolate, ice cream)
Convenience items (such as milk, bread, toilet rolls)
Ingredient(s) for cooking a meal that evening
Item(s) forgotten from a planned shop
General grocery shopping (main or top-up shop)
Other, please specify **DP CREATE BOX TO TYPE IN**

Q9b. And which of these best describes when you wanted to consume/use them?

Straight away / as soon as possible
Within an hour or so
Within the next 2-4 hours
More than four hours, but the same day
The next day or later
Don't know

Q9c. And how quickly did you need your order to be delivered?

Within 30 minutes
30 minutes to 1 hour
1-2 hours (DO NOT SHOW IF Q9b = CODE 1)
2-4 hours (DO NOT SHOW IF Q9b = CODE 1 OR 2)
More than 4 hours later, but the same day (DO NOT SHOW IF Q9b = CODE 1-3)
The next day or later (DO NOT SHOW IF Q9b = CODE 1-4)
Don't know

Q10. Why did you choose to order your groceries online rather than going to a physical store to purchase them? Please tick all that apply from the list below. **MULTICODE RANDOMISE ORDER**

Helps budgeting
Saves time
Could schedule delivery for a convenient time
Already have a subscription with [Amazon Prime /Deliveroo]
Better prices
Shops shut at the time
Unable to use the car
Unable or difficult to leave the house at the time
Too busy
Needed the items immediately
Habit
Can do my shopping when convenient
None of these
Other, please specify **DP CREATE BOX TO TYPE IN**
Don't know **SINGLE CODE**

Q11. And which of these was the **MAIN** reason why you ordered your groceries online? **SINGLECODE**

DP IF SELECT MORE THAN ONE ITEM AT Q10 show all answers chosen at **Q10**

Q12. Which of these were important in deciding to place your grocery order with [Amazon Prime Now/Deliveroo] rather than another online delivery provider? Again, please tick all that apply. **MULTICODE RANDOMISE ORDER**

Range of products offered
Can order non-grocery products
Good quality products
Reliable delivery times
Able to book a scheduled delivery period
Items in stock/few substitutions
Good prices
Fast delivery
Late night delivery available
They deliver to the area where I live
Other online providers not available in my area
Habit
Other, please specify **DP CREATE BOX TO TYPE IN**

Q13. And which of these was the one **MAIN** reason why you chose to use Amazon Prime Now/Deliveroo rather than another online provider? **SINGLE CODE**

DP IF SELECT MORE THAN ONE ITEM AT Q12 show all answers chosen at **Q12**

Q14. Typically, how often do you order online groceries to be delivered on the same day from [Amazon Prime Now/Deliveroo]?

Nearly every day
More than once a week
About once a week
About once a fortnight
About once a month
Less than once a month
Don't know

Q15. Thinking about your spending on grocery shopping both online and in physical stores over the last 3 months, which of the following best describes you? **REVERSE ORDER; HALF SEE 'ALL/NEARLY ALL' FIRST AND HALF SEE 'SMALL AMOUNT' FIRST**

By groceries, we mean food (e.g. fresh food, frozen food, tins etc, but not including restaurant/take-away food), alcohol, cigarettes, toiletries, household cleaning products etc.

I bought all/nearly all my groceries with [Amazon Prime Now same-day delivery/Deliveroo]
I bought most of my groceries with [Amazon Prime Now same-day delivery/Deliveroo]
I bought roughly half my groceries with [Amazon Prime Now same-day delivery/Deliveroo]
I bought some of my groceries with [Amazon Prime Now same-day delivery/Deliveroo]
I bought hardly any of my groceries with [Amazon Prime Now same-day delivery/Deliveroo]
Don't know/not sure

Q16. Looking at the list below, what changes to [Amazon Prime Now same-day delivery/Deliveroo], if any, would make you use it for more of your grocery shopping? Please tick all that apply. **MULTICODE. RANDOMISE ORDER OF CODES 1-11**

Lower item prices
Wider range of products offered
Lower threshold for free deliveries **AMAZON CUSTOMERS ONLY**
Lower minimum order value **AMAZON CUSTOMERS ONLY**
Free/lower delivery charges
Better product availability/fewer substitutions
Website/app easier to use
More delivery time slots available
Quicker delivery
Ability to schedule time slots **DELIVEROO CUSTOMERS ONLY**
Better quality products
Other, please specify **DP CREATE BOX TO TYPE IN**
None of these
Don't know

Q17. Which of these would make the single biggest change to your use of the service?

DP IF SELECT MORE THAN ONE ITEM AT Q16 show all answers chosen at **Q16**

Q18. [AMAZON] Now we would like you to imagine that before starting your [IF "QUESTIONNAIRE INFO" most recent grocery order / IF "SAMPLE INFO" grocery order placed on [SAMPLE DATE], you knew that Amazon Prime Now had stopped offering a same day online delivered grocery service. Thinking of all the options open to you, what would you have done instead? RANDOMISE RESPONSE OPTIONS (EXCLUDING DON'T KNOW)

Ordered online groceries for same day delivery from another supplier
Ordered online groceries for next day or later from Amazon Prime Now
Ordered online groceries for next day or later from another supplier
Gone to a physical store
Not made the purchase
Don't know

[DELIVEROO] Now we would like you to imagine that before starting your [IF "QUESTIONNAIRE INFO" most recent grocery order / IF "SAMPLE INFO" grocery order placed on [SAMPLE DATE], you knew that Deliveroo had stopped offering an online delivered grocery service. Thinking of all the options open to you, what would you have done instead? RANDOMISE RESPONSE OPTIONS (EXCLUDING DON'T KNOW)

Ordered online groceries for same day delivery from another supplier
Ordered online groceries for next day or later from another supplier
Gone to a physical store
Not made the purchase
Don't know

Q19. Which of the following online retailers deliver **same-day groceries** to your postcode. [LINE BREAK] Please only tick companies from the list below if you are sure they offer **same-day delivery of grocery items** to your area. **RANDOMISE ORDER OF CODES 1-8**

By groceries, we mean food (e.g. fresh food, frozen food, tins etc, but not including restaurant/take-away food), alcohol, cigarettes, toiletries, household cleaning products etc.

Amazon **ONLY SHOW FOR DELIVEROO SAMPLE**
Deliveroo (including Co-op) **ONLY SHOW FOR AMAZON SAMPLE**
Iceland same-day delivery
Morrisons (delivered by Amazon) **ONLY SHOW FOR DELIVEROO SAMPLE**
Ocado Zoom
Sainsbury's Chop Chop
Just Eat (including Asda)
Uber Eats (including Iceland)
None of the above
Don't know

Q20. **IF Q18=1 AND Q19 DOES NOT =9 ELSE SKIP** And if [Amazon Prime Now/Deliveroo] had stopped offering an online delivered grocery service before your [IF "QUESTIONNAIRE INFO" most recent grocery order / IF "SAMPLE INFO" grocery order placed on [SAMPLE DATE], which other online same-day grocery provider would you have ordered from: **MULTICODE**

ONLY SHOW CODES SELECTED AT Q19
Other (please specify)
Don't know

CONJOINT

We would like you to think again about [IF "QUESTIONNAIRE INFO" the most recent time you placed a same-day grocery order with / IF "SAMPLE INFO" the same-day grocery order you placed on [SAMPLE DATE] with [Amazon Prime Now/Deliveroo] costing [ORDER VALUE INCLUDING DELIVERY AND SURCHARGES] including delivery. The next set of questions will each ask you to choose what you would have done if the alternatives available to you had been different.

The following 8 questions will each look something like the example shown below. This is an example so please don't try and answer this question!

Example Choice Question

CASE 2

	Option A	Option B	Option C	Option D
Range of products offered	Like at a supermarket	Small range (i)	I would buy from a shop or order elsewhere for next day/later delivery	I would not buy at all
Speed of delivery (i)	Between 2 and 4 hours, within a 30-minute window	Within 30 minutes		
Price (excluding delivery) (i)	£28.00	£35.00		
Delivery charge	£7.99	£5.99		
	○	○	○	○

In this example, you would have two options for online same-day delivery, Option A or Option B. These would be the only options available to you for online same-day delivery.

Alternatively, you could choose either

- 'I would buy from a shop or order elsewhere for next day/later delivery' or
- 'I would not buy at all'.

The online same-day delivery options (Options A and B) differ by the range of products/brands offered, speed of delivery, general price level and delivery charge.

[EACH ATTRIBUTE SHOWN ON SEPARATE SCREEN, INCLUDING THE EXAMPLE CHOICE SET IMAGE, WITH THE RELEVANT ATTRIBUTE BOLDED IN THE IMAGE]

The next 4 screens will explain the different features of the options available to you.

The **Range of products/brands offered** could be like at a supermarket, like at a convenience store / corner shop or a small range. Depending on the range shown it might mean that you couldn't have bought everything you wanted to or, alternatively, that you could add items to your order that weren't previously available. Where '*Small range*' is shown, clicking the (i) button will display the range of actual items available.

Click here to see the products available in the 'small range'

The **Speed of delivery** shows the length of time from when you place your order to when you could expect your order to be delivered. One of the speeds shown above is '*Between 2 and 4 hours within a 30-minute window*'. In this case, please imagine that you could

choose a 30-minute delivery time slot sometime between 2 and 4 hours from when you place your order.

The Price (excluding delivery) is intended to show how expensive or cheap the online delivery provider is. The amounts shown are for a typical basket of goods from this provider that would cost [£ORDER VALUE], excluding delivery, from [Amazon/Deliveroo] (i.e. the amount you paid for your recent order).

Please note: the amount you would actually pay would depend on what you ordered. This could be different, given the options available here, to when you made your order in the real world.

The final row is delivery charge which would be added on top of the price. One of the options you will see is free delivery when the order value is £40 or over. In this case, you would not pay a delivery charge if you spend £40 or more.

Q21. Which of the options shown would you have chosen if these were the only alternatives available to you?

Please make sure you scroll across to see all of the information presented

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SP1Q2 Which of the options shown would you have chosen if these were the only alternatives available to you?

SP1Q3 Which of the options shown would you have chosen if these were the only alternatives available to you?

SP1Q4 Which of the options shown would you have chosen if these were the only alternatives available to you?

SP1Q5 Which of the options shown would you have chosen if these were the only alternatives available to you?

SP1Q6 Which of the options shown would you have chosen if these were the only alternatives available to you?

SP1Q7 Which of the options shown would you have chosen if these were the only alternatives available to you?

SP1Q8 Which of the options shown would you have chosen if these were the only alternatives available to you?

Q22. In the last three months, which of the following companies have you ordered online groceries for same day delivery from? Please tick all that apply. **MULTICODE**. **RANDOMISE ORDER OF CODES 1-8**

By groceries, we mean food (e.g. fresh food, frozen food, tins etc, but not including restaurant/take-away food), alcohol, cigarettes, toiletries, household cleaning products etc.

Amazon **ONLY SHOW FOR DELIVEROO SAMPLE**
Deliveroo (including Co-op) **ONLY SHOW FOR AMAZON SAMPLE**
Iceland same-day delivery
Morrisons (delivered by Amazon) **ONLY SHOW FOR DELIVEROO SAMPLE**
Ocado Zoom
Sainsbury's Chop Chop
Just Eat (including Asda)
Uber Eats (including Iceland)
Other (please specify)
None of these
Don't know / can't remember

Q23. **AMAZON CUSTOMERS ONLY. DO NOT ASK IF Q22=2** We would now like you to think about a different online delivery provider - Deliveroo. Have you used any of Deliveroo's services in the past 12 months (i.e. for delivery of restaurant/fast food and/or groceries or non-food items)? **SINGLE CODE**

Yes
No
Don't Know

Q24. **IF Q23=1 ELSE SKIP** Which of the following Deliveroo services have you used in the last 12 months. Please tick all of the following that apply: **MULTICODE**

I have had restaurant/take-away food delivered
I have had groceries delivered

Q25. **ASK If Q23 = 1** Do you have a Deliveroo Plus subscription?

Yes
No
Don't know

Q26. **DELIVEROO CUSTOMERS ONLY** We would now like you to think about Amazon and the subscriptions they offer. Please tick all the following that apply to you. **MULTICODE**

I've got a subscription with Amazon Prime
Yes, I've got a subscription with Amazon Fresh
I don't have any subscription with Amazon **SINGLE CODE**
Don't know **SINGLE CODE**

Q27. **IF Q26=1 OR 2 ELSE SKIP** Which of the following services have you used in the last 12 months. Please tick all that apply:

I have ordered non-grocery goods using an Amazon account (not Amazon Prime)
I have ordered non-grocery goods using an Amazon Prime subscription
I have ordered groceries from Amazon using an Amazon Prime account
I have ordered groceries from Amazon using an Amazon Fresh Add-on
None of the above **SINGLE CODE**

Classification questions

Q28. Are you…?

Male

Female
Prefer to self-ascribe, please type in **DP ADD WRITE IN BOX**
Prefer not to say

Q29. We mentioned that there would be a £5 incentive for completing this survey. This incentive will be administered by Accent, within 1 week of completion of fieldwork (currently estimated to be 27th March.

This will be sent as an Electronic voucher.

Which email would you like this to be sent to?

SAMPLE EMAIL
Other email: Please write in

If you have any queries about your incentive, please contact us on 020 8742 2211.

Thank you. This research was conducted under the terms of the MRS code of conduct.

Appendix E

Survey weights

Appendix E Survey Weights

Weights were generated to correct for the fact that the Amazon and Deliveroo customer samples were not exactly representative with respect to some of the participant characteristics measured in the survey. The weights were generated using an iterative proportional fitting, or raking, procedure, which matched weighted totals of four calibration variables to the target populations of Amazon and Deliveroo orders.

Table 16 presents the categories used for the calibration variables for both the Amazon and the Deliveroo samples. Note that that the categories used for order value and delivery charge were different for Amazon and Deliveroo to reflect the differences in the spread of data in the respective samples.

Table 16: Population calibration variable categories

	Amazon	Deliveroo
Order value	Low (<=£25)	Low (<£10)
	Medium (>£25 and <=£60)	Medium (>=£10 and <=£25)
	High (>£60)	High (>£25)
Delivery charge	Free	Free
	Less than £4	Less than £3
	Over £4	Over £3
Order time	Day (06:00-17:59)	Day (06:00-17:59)
	Night (18:00-05:59)	Night (18:00-05:59)
Region	London	London
	Non-London	Non-London

Table 17 and Table 18 summarises the final weights applied to the Amazon and Deliveroo samples respectively.

Table 17: Weights for the Amazon sample

	Delivery Charge and Order Time					
Region and Order Value	Free		Lower than £4		Over £4	
	Day	Night	Day	Night	Day	Night
London						
Low			1.33	1.32	1.34	1.33
Medium	1.00	0.99	1.34	1.33	1.35	1.34
High	1.20	1.19	1.61	1.60		1.62
Non-London						
Low	0.80		1.07	1.06	1.08	1.07
Medium	0.80	0.80	1.08	1.07	1.09	1.08
High	0.97	0.96	1.30	1.29	1.31	

Table 18: Weights for the Deliveroo sample

	Delivery Charge and Order Time					
Region and Order Value	**Free**		**Lower than £3**		**Over £3**	
	Day	**Night**	**Day**	**Night**	**Day**	**Night**
London						
Low	1.06	1.17	1.18	1.30	1.45	1.60
Medium	0.94	1.04	1.05	1.16	1.30	1.43
High	1.43	1.57	1.59	1.75	1.96	2.16
Non-London						
Low	0.71	0.79	0.80	0.88	0.98	1.08
Medium	0.64	0.70	0.71	0.78	0.87	0.96
High	0.96	1.06	1.07	1.18	1.32	1.46

These weights were applied throughout our analysis except where otherwise stated, thereby ensuring that the results are representative of the target populations of Amazon and Deliveroo orders by Order value, Delivery charge, Order time and Region.