



Unit Pricing

Qualitative Research Report

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contents



1. Executive Summary	2
2. Background and objectives.....	5
3. Sample and approach	7
4. Research findings	11
How participants shop and perceive best value	11
Who uses unit pricing and why	14
How unit pricing is used.....	17
How unit pricing compares to other ways of perceiving value.....	25
How the use of unit pricing has changed during the cost-of-living crisis	28
Differences in the use of unit pricing in-store versus online.....	29
Ease of use and ideas for improving the use of unit pricing	31
5. Conclusions	35
Appendix 1. Sample	37
Appendix 2. Discussion guides	39

01

1. Executive Summary

This qualitative research project involved 50 participants to explore their use of unit pricing when grocery shopping. The research was conducted between July and August 2023 and examined shopping behaviours both in-store and online using observations and interviews. The research was commissioned by the Competition and Markets Authority (CMA) as part of its review of unit pricing in the grocery sector.¹

The research found different levels and styles of unit pricing usage amongst participants, with half the sample using unit pricing and half not. There were no socio-demographic patterns associated with use, rather it was driven by shopper attitudes, including having an 'analytical mindset' and being price conscious. The use of unit price information was selective and not undertaken across all product categories. Additionally, factors such as the shopper's tiredness, and busy store environments, were barriers to use.

Several participants in our sample were unaware of unit pricing. Where participants were aware, knowledge typically stems from informal learning through family and friends.

There were also several participants who were aware of, but did not commonly use, unit pricing. They gave three reasons for this. First, was the discreet way in which unit pricing is displayed. For example, the font was small, muted in colour, and positioned after the selling price, making it easy to overlook while scrolling online or quickly selecting items in-store. Second, other 'rules of thumb' were used to assess value – such as whether a product was on a deal or promotion. Third and related, unit pricing required cognitive effort to use, and did not fit with the shopping style of participants who prioritised making shopping as quick and easy as possible.

¹ [Unit pricing - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

Users of unit pricing highlighted seven decision-making contexts where unit pricing proved most beneficial. These were:

- comparing the same product in different formats
- working out the value of buying a big-ticket item
- helping to select a product when overwhelmed by choice
- verifying supermarket deals
- shopping for new or infrequently purchased products
- noticing a reduction in the quantity or size of a product, and;
- buying in bulk.

Unit pricing was mainly used to compare store cupboard essentials and household cleaning products. For example, it was commonly observed to be used for packaged groceries with a long shelf life (such as pasta and rice) and cleaning categories (such as bleach or detergent). It was less commonly used for product categories where quality matters (as participants believed that higher quality products were unlikely to have the lowest unit price) and for fresh or perishable foods (as unit price was associated with buying in bulk, which in turn may lead to food waste).

Despite these patterns, shoppers' personal preferences ultimately determined their use of unit pricing. For example, certain participants were happy to pay more for a premium toilet roll, whereas others focused on cost per sheet as they did not place a high value on having a premium product in this category.

While some participants had increased their use of unit pricing during the cost-of-living crisis, this was limited to those with prior experience of using it. We saw no evidence that shoppers on the very lowest income levels were using unit pricing more, nor were prompted to use unit pricing due to financial pressures.

While used in both channels, participants were observed to use unit pricing more when shopping in-store rather than online. In-store, participants explore aisles for inspiration and make comparisons, whereas when online, participants relied more on favourites lists or previously bought items. These features make online shopping quicker and participants spend less time comparing the cost of items.

Participants believed unit pricing was an easy concept to understand. This included those who were previously unaware of it. Some participants were familiar with the concept of unit pricing but had not heard of the term itself (and generally participants felt the term 'unit pricing' was not intuitive). Instead, they referred to it using other terms, such as 'price per weight'.

When using unit pricing, while participants were generally at ease with standard metric weight and volume measures, difficulties arose with units that do not align well with

the quantity they intend to purchase. Participants said using unit pricing became especially challenging when shopping for fresh fruit and vegetables. This was because loose versus prepacked foods tended to have a mix of by-weight and by-item measurements that participants found hard to compare. There was a preference for by-item measures for most fresh fruit and vegetables and, overall, a desire for measures to be harmonised across similar goods.

Participants believed awareness-raising and consistency in how unit pricing is displayed is required to increase its use. They said measurement units also need to relate to how products are used in real life. Additionally, the benefit of checking unit pricing to get better value for money needs to be more salient for shoppers. Practical examples and myth busting are likely to help in this context - for example, showing when relying on rules of thumb (such as 3 for 2) may not always lead to the best deal. Additionally, participants considered that making unit pricing easier to read and more obvious would drive use.

02

2. Background and objectives

Ensuring that shoppers can make informed choices about the value of the grocery products they buy is vital given the cost-of-living crisis and inflationary pressures on food and other essentials.

Unit pricing is a labelling system for displaying the cost of different products by reference to standard units of weight or volume. It enables shoppers to compare the relative costs of different products regardless of their packaged size and helps them get the best deal when comparing products.

For example, the unit price for a product could be:

- the price per volume measure (e.g. per 100ml or per litre)
- the price per weight measure (e.g. per 100g or per kg)
- the price per usage measure (e.g. per wash), or
- the price per item measure (e.g. per banana).

In January 2023, the CMA launched a review considering the use of unit pricing both in-store and online in the groceries sector. The review follows the Which? 2015 Groceries Super-complaint where the CMA considered pricing and promotional practices in the groceries market. The CMA's response to the Super-complaint identified three areas where there were believed to be problems with unit pricing in supermarkets. These were:

- legibility
- inconsistency, and
- missing information on special offers.

The CMA's current unit pricing review builds on this work and considers:

- if the unit pricing issues identified during the 2015 super-complaint persist
- compliance with the law by retailers, and
- shopper awareness, understanding and use of unit pricing information.

This research focuses on shopper awareness, understanding and use of unit pricing. The overall research objective was to better understand how UK shoppers make use of the unit pricing information available to them when shopping for products.

Specifically, the research explored:

- the extent to which shoppers currently use unit pricing when choosing which products to buy
- whether and how shoppers use unit pricing in-store and online, and any differences between these
- in what circumstances and with what types of products shoppers use unit pricing
- when using unit pricing, are there particular unit measurements that shoppers find most helpful or any that are found to be particularly difficult to understand
- whether unit pricing is used to help shoppers choose which retailers to buy particular products from and which products to buy in a particular retailer
- where shoppers are not using unit pricing, why this is
- what actions, if any, shoppers are taking to save money when shopping for food and other household essentials, and whether this has changed with the cost-of-living crisis.

03

3. Sample and approach

The research engaged 50 members of the public in a three-stage process to observe their grocery shopping behaviours and understand the factors affecting the use of unit pricing. Fieldwork took place between July and August 2023.

Participants were recruited to cover a range of socio-demographic characteristics and the sample included a mix of genders, age and social groups, household composition and income levels, ethnicity, and educational attainment (including those with no formal educational qualifications). Participants were recruited across the four nations of the UK.

Given the cost-of-living crisis, the CMA were interested in the extent to which unit pricing was used by lower income households. Additionally, educational attainment was used as a proxy for numeracy skills, which in turn could influence confidence in using unit pricing.

Several behavioural characteristics were also selected during recruitment. The sample was split to include 25 participants who undertook their grocery shopping online versus 25 who shopped in-store. A range of grocery retailers were also included in the sample. Convenience sized stores were excluded,² and participants had a minimum basket size of 10 items for the accompanied shops.

Criteria, a professional fieldwork agency, undertook recruitment and quotas were used to ensure participants met the sample characteristics. For the grocery retailer used, only soft quotas were applied, as the CMA were not interested in reporting on specific retailers as part of this research. A full sample profile is given in Appendix 1.

At the point of recruitment, participants were provided with an information sheet that set out the purposes of the research, what data will be collected, why it is needed and how long it will be stored. Participants were asked to provide written consent to take part in the research, with additional verbal consent provided at the interview stage.

² Retailers are currently exempt from having to provide unit pricing if they have a store size of less than 280 square metres.

Post-recruitment, Basis Social undertook a three-stage research process with each participant. To minimise the influence of the research process on shopper behaviour, the subject of unit pricing was not mentioned to participants until the latter part of the post-shop interview. Rather, the research was described to participants as exploring how shoppers make decisions about their grocery shopping, rather than about unit pricing specifically.

The research stages were as follows.

Stage 1: Pre-meet

The first stage involved a 30-minute online interview to meet the participant, and understand more about their lives, including their relationship with cooking and grocery shopping. The pre-meet interview also provided the opportunity to discuss the research process, confirm the date and time of the accompanied shop, and check that the participants were happy to undertake an interview after shopping.

Stage 2: Accompanied shop

The second stage of the research was an accompanied shop, which involved observing how shoppers purchase items when grocery shopping. Participants were asked to shop as they normally would. To minimise any influence on participants' behaviour, the observations were undertaken unobtrusively and, other than a greeting at the beginning of the session, did not involve any contact or conversation with the participant during the shopping trip.

Specifically, for in-store purchases, observations were undertaken at a distance of approximately 20 feet from the shopper. Fieldnotes were used to record information on the behaviours observed (this was done verbally on an audio recorder). The researcher paid specific attention to the category of product shopped, the time spent deciding whether to purchase (i.e., did it look quick and habitual, or a considered choice), and whether other items were looked at in this context. After an item was selected, the researcher took a photo of the shelf, including how the selling price and unit price was displayed and made a note of any other information (e.g., a promotion) that may have influenced the choice.³ A rough map of the store was also made at the end of the shopping trip.

For online shopping, observations were undertaken on the Zoom platform. Participants were asked to login into their online grocery retailer and share their screen. The researcher then recorded the shopping event. Participants were asked to shop as they normally would, and the researcher turned off their audio and video feed throughout the process to minimise disruption. During the shopping trip, the researcher kept verbal fieldnotes of what they were observing and described any contextual influences on behaviour – for instance whether participants shopped from

³ To protect privacy, photographs were not taken of the participant or any other shoppers as part of the research process.

lists, what items were returned from searches, whether promotional activities were clicked on, as well as dwell time on page. For each purchase, a screen shot was taken that captured the selling price, unit price, and other products on the page.

After the in-store or online observations, the researcher spent approximately 1-hour organising their fieldnotes and images of the purchase decisions. They identified 5-10 purchases where they believed an active choice was being made between products. These products then formed part of the focus for the post-shop interview, and the role of unit pricing was explored in this context.

Stage 3. Post shop interview

The final stage of the research was a post shop interview. This was undertaken approximately one hour after the shopping trip, while purchasing decisions were still fresh in participants' minds. Researcher notes together with photographic evidence (for in-store shops) and video clips (for online shops) were used to help the participant recreate their shopping journey. As noted above, 5-10 purchases were explored in depth, depending on the size of shop. Participants were asked what influenced their purchase, and any spontaneous mention of the use of unit pricing was explored. After this, awareness and use of unit pricing was explicitly discussed, and examples of unit pricing shown to aid discussion.

Specifically, the post shop interview covered the following topics:

- overall experience of the shop and why the retailer was selected
- whether anything was notable or different from usual about the shop
- whether a shopping list was used
- whether the participant was working to a budget
- a detailed review of 5-10 purchase decisions including:
 - whether the participant had planned to buy the category, brand and format of the product
 - what attracted the participant to the item versus other items
 - what mattered most to the participant when making the purchase and why
 - what information, if any, was used to help the participant decide whether to buy the item
 - where unit pricing was spontaneously mentioned, how it was used and understood by the participant, including any difficulties they had using unit pricing information
- overall importance of pricing to the participant's shop

- the influence of promotions or offers, including loyalty card-related discounts
- an introduction to unit pricing, including awareness, whether it was or had previously been used and understanding of the concept
- where unit pricing was not used by the participant, the reasons for this
- ease of use across different types of unit measurements and formats, using examples.

Full topic guides for research stages 1 and 3 are provided in Appendix 2.

Participants were paid an incentive to take part in the study and completing all three stages. This was £100 for those shopping online and £120 for those shopping in-store.

04

4. Research findings

How participants shop and perceive best value

Understanding how people shop and make purchase decisions provides important context to understand how and when unit pricing is used. A typical supermarket has tens of thousands of products available to purchase,⁴ yet shoppers typically only buy around 40 items per visit.⁵ Shoppers adopt strategies to cope with the overwhelming amount of choice on offer, using mental shortcuts (known as heuristics) to settle for something considered good enough or satisfactory, rather than spending time weighing up the pros and cons of each product choice.⁶ Best value is perceived relatively in this context.

Participants were observed to adopt three main strategies to reduce choice complexity when grocery shopping. These were:

1. **Brand loyalty and repeat purchases**

All participants in our sample bought certain brands they were familiar with and regularly purchased, and most participants used lists (either physical or mental) to shop for specific brands. In the case of online shopping, participants were observed to commonly use a 'favourites' list or items previously bought.

Brands were shortcuts to a variety of associations. It was common for participants to shop supermarket economy own brands (such as 'saver ranges') as they were associated with value for money.

"I do tend to go for a lot of the own branded products because I strongly believe that I'm saving a lot of money and I'm not compromising on quality."

⁴ CMA (2023). [Competition, choice and rising prices in groceries](#).

⁵ Grocer (2020). It's a golden age for challenger brands with small budgets to reach consumers.

⁶ Byron Sharp (2010). How Brands Grow: What Marketers Don't Know.

- *Online shop, Male, 40-59, Household income: £45,001 - £65,000*

Branded goods were often seen as a signal of quality. For example, participants variously mentioned buying specific brands across a range of categories (biscuits, butter, children's food, toiletries) as they were perceived to have specific quality characteristics (freshness, taste, healthiness, softness and so on).

Several participants also used loyalty cards, which was said to influence behaviours in two ways: it made them more likely to shop at a specific supermarket; and seek discounted own brand or other loyalty card offers within store.

2. Deal seeking

Deal seeking was another very common behaviour. Participants said that offers and discounts such as '3 for 2', 'buy one, get one free' or loyalty points strongly influenced purchases, and was often the main information used to consider whether a product was best value. While deal seeking was especially used by the price conscious shoppers, all participants looked out for deals that were perceived to be good value for money, especially discounts on branded goods. Participants said that promotional materials were easy to spot in-store, especially due to the use of coloured sales stickers. Deals were particularly influential in prompting unplanned purchases.

"They generally don't reduce coconut water, they always reduce the coconut milk. So, when I see the red [discount] sticker [on the coconut water], I grab two of them. That's an automatic for me because I use them daily".

- In-store shop, Male, 40-59, Household income: less than £18,000

"If it is on offer, I think it's more likely it makes me want to buy it... Sometimes look at stuff and I don't actually need it till next week or something. But I'm like, 'oh, it's on offer'. Right, okay. I'll just get it."

- In-store shop, Female, 18-24, Household income: less than £18,000

Some participants mentioned keeping mental logs of how much certain brands cost in different retailers and were mindful of when these products were on offer. It was relatively common for participants to say they split their shopping across different retailers to take advantage of this.

3. Ease and convenience

Most participants in the study said they were keen to get their grocery shopping done as quickly as possible. Some found grocery shopping a stressful experience, especially shopping in-store when the shops were busy and they were in a rush. Websites that were hard to navigate were also described as overwhelming. Finding an item that was 'good enough', especially when time pressured or having too much choice presented, was a relatively common behaviour. Participants' purchase behaviours were observed to be influenced by the physical layout of a store or webpage, ease of finding an item, and the extent to which they felt rushed or pressured by other customers.

"I did feel that the website today had got quite a lot on there... They have a baby event on and [deals such as] buying three for two on meals. It's quite overwhelming [and hard] to focus on what I'm searching for. I can't find what I need. It's distracting. I prefer it to be simpler."

- Online shop, Female, 25-39, Household income: above £65,000

Perceiving value

Participants perceived good value by assessing several attributes of a product against its price. These attributes were generally associated with the perceived superior quality of a product (such as taste or freshness), though could also involve different product sizes or convenient formats such as multi-packs or single servings. It was very common for participants to say they were willing to pay a higher price for better quality or for a more convenient product format.

As will be seen later, participants' judgments concerning quality and good value varied between individuals based on their personal preferences, needs, and financial considerations. In this context, 'rules of thumb' were adopted by certain participants to help them make what they perceived as good value choices. For example, participants mentioned they would work within a pricing range that they were not willing to go over for a better-quality product – for example, when shopping for wine.

For certain participants, judging value sometimes involved a relatively sophisticated series of trade-offs. For example, one participant mentioned buying a more expensive milk brand that lasted longer, prevented waste and ultimately saved them money.

"I always go for [brand X] because it's longer lasting, isn't it? So even though it seems that it's more expensive, in the long run it's actually not, because if you just buy whole milk itself, once you've opened it, it kind of goes off. [Brand X] is filtered, and it has a longer life."

- Online shop, Female, 25-39, Household income: less than £18,000

Some participants were particularly price conscious and would make most purchase decisions based on the cheapest selling price alone, irrespective of whether this was the best value. This was generally done by having a mental map of the lowest priced products, rather than checking prices of each item.

Implications for the use of unit pricing

Unit pricing was only one type of information on display in store and needed to compete for a shopper's attention against a plethora of promotional and other marketing activity. Participants described unit pricing as 'hard to see' or 'read' in comparison to special offers and discounts. Overall, participants believed that unit pricing was not displayed in a way that is likely to catch their eye, and consequently they had to make an active decision to seek out the unit price when shopping. The extent to which this was done varied between individuals and the grocery categories they shopped. Making the effort to look for the unit price also needed to be seen by shoppers as relevant when deciding what products are best value, compared to using other information such as promotional deals and offers. Use of unit pricing is explored in more detail next.

Who uses unit pricing and why

Participants familiarity with, and use of, unit pricing varied greatly. This ranged from a complete lack of awareness of unit pricing to a thorough, nuanced understanding and day-to-day use. Whilst not a quantitative study, approximately half of the participants in our sample used unit pricing to varying degrees.

Awareness and understanding of unit pricing

Participants awareness of unit pricing information was varied across the sample, and recognition of the term 'unit pricing' was more limited still. Generally, participants felt the term 'unit pricing' was not intuitive. Instead, participants often used alternative terms to describe unit pricing information they saw on price labels. Phrases like "price per weight" or "price per kilogram" were most commonly used.

"I didn't know that's the term you use for measurements and pricing. No, I didn't. I haven't heard about that."

- Online shop, Male, 18-24, Household income: £30,001 - £45,000

The high degree of variation across participants meant that no obvious demographic patterns emerged regarding who was more or less likely to be aware of unit pricing. Of those that lacked awareness, some had only ever been interested in the selling price and therefore were not aware of (or interested in) unit price information. Others mentally calculated the price per volume of weight of items without realising this information was already provided in the unit price.

Of those that were aware of unit pricing, some were actively aware, in that they sought unit price information when shopping, whereas others knew unit pricing was there, but they rarely gave much thought to it.

"So, I think I've always known to look at the unit price. I think that's just what I was taught."

- *In-store shop, Male, 25-39, Household income: £45,001 - £65,000*

"I've been shopping for all of my life without it really. Apart from the odd thing, I've lived without unit pricing and managed."

- *In-store shop, Male, 25-39, Household income: above £65,000*

Participants that used unit pricing learnt about it socially rather than through formal learning or education. These participants recalled early shopping experiences where they were made aware of unit pricing by family or friends and shown how to use it when comparing products.

"[Unit pricing] was something that my husband pointed me in the direction of years ago and I have always been mindful of it since. At the time I thought I was getting bargains for things, and I wasn't."

- *Online Shop, Female, 25-39, Household income: £30,001 - £45,000*

Characteristics of users

Participants in our sample appear more pre-disposed towards the use of unit pricing based on attitudes and related behaviours rather than demographic characteristics. Overall, participants who were price conscious were observed to have greater awareness and usage. Those on the lowest incomes were price conscious but so too were many who were more affluent. Users of unit pricing were also more likely to:

- have a practical need to buy a lot on a smaller budget
- have developed price checking behaviours from a young age
- be sceptical of supermarkets claims about value
- describe themselves as having a mathematical or analytical mindset.

"I would say pretty confident and I'm quite good at math, so I think it [unit pricing] makes quite good sense in my head."

- *Online shop, Female, 18-24, Household income: £18,000 - £30,000*

In the following pen portrait, Peter's motivations, and behaviours around the use of unit pricing are described.

Pen Portrait⁷ 1: Meet Peter...

Approaches life with a mathematical mind and is suspicious about supermarket deals.



Peter is a former engineer who lives with his wife, two cats and a dog in the English countryside. He's comfortably retired which he puts down to being careful with his money. Whether it is his shopping budget or his pension, Peter likes his financial decisions to logically make sense. Since his retirement, he has the time to shop at a more leisurely pace and to scrutinise prices at his local

supermarket, which he finds "interesting". He does not trust supermarkets – particularly when it comes to multi-pack deals or prices of prepacked fruits and vegetables. He uses unit pricing to check if offers are too good to be true. As someone who is detail orientated and good with numbers, Peter thinks unit pricing is easy. He considers it to be an integral part of his decision-making process, as it helps him get the best value, and makes him feel like a smart shopper.

Participants that did not use unit pricing also share certain characteristics. Firstly, they had not heard of, had not noticed, or had forgotten about unit pricing and mainly compared selling price. When unit pricing was brought to their attention, they tended to believe that unit pricing was not a tool they could use to save money as it was less useful for the products they bought, or they did not believe using unit pricing suited the way they shop (these beliefs are explored in more depth below). They were also generally more interested in other features of products as opposed to pricing, such as quality or convenience.

"It's not very relevant to me... having limited space in my fridge, it's better for me to buy the smaller packet."

- *Online shop, Male, 18-24, Household income: £30,001 - £45,000*

⁷ All pen portraits in this report are based on real participants, however to protect their anonymity, participant names have been anonymised, and the images used are stock images.

"For me, it's just about the [selling] price."

- *Online shop, Male, 40-59, Household income: £45,001 - £65,000*

Whilst price mattered to all low-income participants, this research found no evidence that unit pricing was used or valued more by those on lower incomes versus other groups. There are two main reasons for this. First and foremost was that participants on a low income were focused on the selling price. These participants had tight weekly budgets for shopping, and the price they pay at the till was the main calculation that mattered. Larger pack sizes are more expensive, and were generally not affordable for these participants, regardless of the potential saving per unit. The second reason was that participants on low incomes believed they already got good value by adopting thrifty behaviours. Perhaps the most distinctive of these was their tendency to purchase different items from different retailers in order to get the lowest selling price, which included making use of budget supermarkets and bargain variety stores.

"I think the nappies there were like £3.49 or something... I know [another supermarket] is cheaper because I have experience of going to every other kind of shop."

- *In-store shop, Female, 25-39, Household income: £45,001 - £65,000*

As noted above, participants held several beliefs that also acted as barriers to the use of unit pricing. The most common of these was that unit pricing is only useful if you are considering buying in bulk. This association made unit pricing feel unsuitable for many purchases. As well as the participants on a low income who could not afford the selling price of larger purchases, it was also a barrier for participants who lived alone or did not have enough storage space to bulk buy. This belief also meant unit pricing was perceived by many participants as less relevant to use when buying perishable food, as many did not want to buy large quantities which in turn would create food waste, making any financial saving meaningless.

How unit pricing is used

Participants were observed to use unit pricing to compare products in different scenarios, creating distinct 'styles' of usage. These styles of use were influenced by participants' personal characteristics and circumstances, their beliefs around what constitutes value and their relationship to different grocery categories.

Those most commonly observed ways in which participants used unit pricing were:

- 1. Comparing the same products in different formats:** Unit pricing was used to check if a product sold in a particular format was cheaper, and if it was cheaper, by how much. For example, participants compared whether it was better value to buy soft drinks in a six pack versus a large bottle format.

"I really do use it when there's a variety of different size options I can go for."

- *Online shop, Female, 25-39, Household income: above £65,000*

- 2. Working out the value of buying a big-ticket item:** For certain participants, unit pricing was used to assess the value for money for purchases above a certain price threshold, especially for expensive products such as olive oil.

"I've tried all of them... this particular Spanish one, I find quite good. It's actually got some robust, very good flavour... the one litre size used to be £5 or £6 but now you can see 500ml is £5.25"

- *Online shop, Female, Over 65, Household income: less than £18,000*

- 3. Helping to select a product when overwhelmed by choice:** When encountering similarly sized items of various brands (including own brand) that are hard to differentiate between based on quality, participants used unit pricing as a helpful tool to choose between them. For example, unit pricing was used to choose which breads, rice or types of pasta offered the best value.

"I don't know what a good pitta is. Do you know what I mean? I couldn't tell you whether I had one that's 28p or 12p [per pitta]"

- *Online shop, Male, 40-54, Household income: above £65,000*

- 4. Verifying supermarket deals:** Some participants were highly sceptical about supermarket promotions and used unit pricing to confirm whether a deal was actually good value for money before purchasing.

- 5. Shopping for new or infrequently purchased products :** When buying an item for the first time in a while, participants would generally spend time more time familiarising themselves with the category and can use unit pricing to help establish good value products.

"The smaller packet per the amount you got, it was slightly more expensive. So I

was just like, I don't want it to go out of date and I'm trialling it in what I'm making on the weekend. So it was on my list and I knew I needed to get it, but I haven't bought it enough to be confident

- Online shop, Female, 18-24, Household income: £18,000-£30,000

6. Noticing a reduction in the quantity or size of a product: Participants were prompted to check unit pricing when a product they regularly buy looks different – for example, if they notice a reduction in the size or quantity of the product but the selling price remains the same (which was noted as more common given food price inflation).

7. Buying in bulk: For some participants, unit pricing only becomes relevant to them when they need large amounts of a product to work out how to make affordable purchases. For example, this could be when entertaining others and needing to buy food or drink in bulk.

"Generally, the only time I would use the (unit pricing) information is if I'm going to buy a larger quantity of it and it's useful to know in that sense."

- Online shop, Male, 18-24, Household income: £18,000 - £30,000

In the following pen portrait, Lily's approach to using unit pricing on items above a certain price is described.

Pen Portrait 2: Meet Lily...

Unit pricing gives her confidence to buy big ticket items and makes it easy to compare like-for-like products.



Lily is three months into her first job after university. Whilst she's not a naturally price-conscious person, she's at a time of her life where she needs to make her money go further. With her new busy lifestyle, she tries to invest time and energy into shopping around for good deals but sometimes this simply isn't possible. She had not heard of the term unit pricing before this research but sometimes uses 'the small number' when shopping in categories like household cleaners, because she feels there's no difference in the quality between brands. She tends to make big purchases of things like detergent, which can eat up a lot of her budget. She checks the unit pricing between big and

small packs to help her work out whether it's worth the upfront investment. Her rule of thumb is to check this for anything £5 and above. Anything less than this is not worth the hassle. She also wouldn't bother looking at the unit price if an own brand item was available, as she'd assume it was always the cheapest.

Contextual and environmental factors that impact how and when shoppers use unit pricing

When observing participants, context and environment were seen to play a significant role in influencing their approach to shopping. Several factors were identified across the sample as having a particular impact on the use of unit pricing.

Time pressure was the most common factor that influenced how participants approached their shop. Most participants were time poor and, across the sample, people wanted to minimise the time they spent shopping. Using unit pricing slows down shopping and was viewed as not always a suitable tool to use when pressed for time.

"When I'm into the supermarket, it's like a supermarket sweep. I'm like, let's go, got to get out the supermarket store. The children are driving me mad."

- Online shop, female, 25-39, Household income: above £65,000

Similarly, how much energy participants had when shopping had an impact on the use of unit pricing. Many people have busy lifestyles, whether this be with managing childcare or other responsibilities, and shopping is another chore on their list that they want to expend as little energy as possible doing. Making comparisons between products using unit pricing was seen by participants as requiring cognitive effort, which was challenging when they were feeling tired.

"Whether I look at it [unit pricing] much depends to a certain extent on my energy levels when I'm shopping. I didn't today because it's after work and I just want to get in and get out in one piece."

- Online shop, Male, 40-59, Household income: above £65,000

Participants were also observed to be influenced by who they are shopping with. The presence of others, especially children, can make it hard to concentrate and can shape the choices made in-store, which in turn can limit the use of unit pricing.

"When the kids are with me, it's just not possible as much as I'd be up for checking prices, I've always got my eyes on them."

- *Online shop, Female, 25-39, Household income: less than £18,000*

Unit price visibility and shelf edge labelling were additional factors that had a bearing on whether participants used unit pricing. Inconsistencies in pricing information across stores, and the presence of discounts and other larger, more prominently advertised pricing information can increase the amount of effort required to identify and use unit pricing.

"[Unit pricing] is difficult to read because it's very small. I don't know whether that is maybe because they haven't got enough space on the label, they got to put so much information on there."

- *In-store shop, Male, 25-39, Household income: £18,000 - £30,000*

Another contextual factor that influences whether unit pricing is used is whether the participant had made similar purchases recently or not. Where participants had bought similar items before and thought they had secured a good deal based on price, this information was salient, and participants assumed the price remained the same.

Even participants who were active users of unit pricing did not use it on every shopping trip and for every item. Participants relied on their memory and commonly made decisions based on previous assessments that may have included unit pricing. Several participants mentioned phases of concentrated attention on unit pricing. These phases were typically associated with having more mental space, and the absence of environmental factors that might hinder their ability to use unit pricing. They retained this information for future use. Some participants said they retained a rough understanding of unit pricing information for extended periods of time, using it as an anchor for what good value might look like in a category, until a significant change in a product prompted them to reassess value for money.

"The unit price did play a role [in this purchase]. I just didn't look at it there and then. Every now and then I get really into it and take the time to compare. I remembered it was better value than the others."

- *In-store shop, Male, 25-39, Household income: above £65,000*

The use of unit pricing across categories

The ways in which participants related to different categories of groceries was a key influence on whether they used unit pricing; and specifically, whether they saw the category as a 'luxury' (a premium product where pleasure, comfort, or enjoyment is key) or a 'commodity' (a basic good that is generally interchangeable with other goods of the same type).

When shopping for luxury items, participants were more interested in other indicators of value, such as quality, rather than the price of the item (and by extension the unit price).

"I've got certain items where I don't care how much it costs, I'll always get it."

- *Online shop, Male, 25-39, Household income: £18,000 - £30,000*

When shopping for items viewed as commodities, products tend to be seen as functionally equivalent, and therefore price becomes the distinguishing factor. Participants were more likely to view certain categories of products as commodities and make greater use of unit pricing in this context. One such category was household cleaning products, like washing up liquid or bleach, which many participants saw as very similar. Participants approached these purchases with a commodity mindset using unit pricing to get the best price per volume. Other household products where unit pricing was used in this way included kitchen roll, dishwasher tablets, and laundry detergent.

"Like washing liquids and that kind of stuff... I guess those kind of household commodities."

- *In-store shop, Female, 25-39, Household income: £45,001 - £65,000*

For some participants, staple food items and packaged groceries like tinned goods, dried pasta, rice, and vegetable oil, were also approached with a commodity mindset. These were also seen as functionally equivalent to other products in their respective categories, with little to distinguish between brands. Additionally, they have long shelf lives that made them suitable to buy in larger quantities. In this context unit pricing became useful to ensure participants could buy in larger quantities and get the best deal.

"I then work out whether it's cheaper [using unit pricing]... whether it's baked beans or soups, I would see if they were cheaper in the four pack."

- *In-store shop, Male, Over 60 years, Household income: less than £18,000*

"For things where you have different sizes and you're not sure, oh, is that going to last, and will I use this... I bought, like, a really big bottle of ketchup. I'm still going through it, but I bought it because it was cheaper, and I know I would use it. For stuff that's not perishable, it's kind of more useful."

- *In-store shop, Female, 18-24, Household income: less than £18,000*

While participants used unit pricing for categories such as cleaning products and food staples, such behaviours were by no means universal. In the following pen portrait, Sandra's use of unit pricing and other ways of working out best value is described in relation to different products.

Pen Portrait 3: Meet Sandra...

Struggling with the cost-of-living crisis and trying to save money where she can as a result.



Sandra is a hard-working mother of two whose finances have been severely impacted by the cost-of-living crisis. Whilst she tries not to compromise on quality when it comes to items for her children, she has had to make some sacrifices and now works with a strict budget when she goes shopping. Sandra was introduced to unit pricing by her husband years ago. She's found herself increasingly aware of unit pricing recently, as she's more interested in getting the best value item, particularly when it comes to everyday practical essentials, like pasta and deodorant. However, when it comes to baby products, she only trusts certain brands, which are more expensive. To get the best deal on these, she will make the effort to shop around to find special offers and discounts.

Ultimately, a shopper's personal preferences determined their use of unit pricing. The exemplar of this was toilet roll. Some participants viewed toilet roll as a commodity product and sought value in terms of price per sheet or roll, whereas others valued 'luxury' and sought value in terms of attributes like softness or sustainability. Participants purchasing 'luxury' toilet roll expected to pay more, and unit pricing was viewed as less relevant to their decision.

"The thing I'm bothered about is the quilted. That's come from my mum. I think it's the quilted feel of the toilet roll itself... I'm looking for a higher quality product."

- *Online shop, Female, 25-39, Household income: above £65,000*

"I've never had a problem with going with whatever and I like to just make sure I've got plenty of toilet roll in the house. That's one thing I hate running out of. So, I always buy a bigger bag, even if I've got some... I went for the cheapest one because I'm quite happy to get the cheapest one as long as it's there."

- *Online shop, Female, 25-39, Household income: less than £18,000*

Beyond whether products were seen as a commodity or not, there were other categories where unit pricing was observed to be less commonly used. Many participants saw perishable fresh food as less relevant for unit pricing – mainly as unit pricing was associated with buying products in large quantities, and participants were concerned to avoid food waste.

For a few participants, fresh meat was the exception to this rule. The general high price of meat prompted participants to consider price more, and the variety of formats the product is sold in made unit pricing useful as a comparison tool. Balancing quality, freshness and best price per weight was deemed important.

"I think it's essential with meat because I think it's the most expensive product, edible product. I think meat, more than any other product, is the most expensive. So you try to get the best price and the highest quantity."

- *Online shop, Male, 18-24, Household income: £30,001 - £45,000*

Participants were observed to use unit pricing less often for the following food purchases:

- **Deli and fresh counter items** were seen as premium foods where shoppers expected to pay more, and price comparisons to the same prepackaged goods were not commonly observed.
- **Items that were seen to be one-off treats** such as ice cream or cakes, were also seen by participants to be less relevant for unit pricing. Participants saw treats as about pleasure rather than with a cost-saving mindset.
- **Items that are generally sold in small quantities with low selling prices** were seen by participants as less relevant for unit pricing. Spices were a good example of this. Differences in cost per 10 grams were thought to be minor and consequently it was not worth the time and effort to look at the unit price, with selling price the primary point reference.
- **Where brands were particularly important**, price comparisons of any kind

were seldom undertaken. For example, some participants would only ever buy a certain brand of baked beans regardless of price.

"No, I would never look at the unit price of ice cream because it's... one of these items that I just wouldn't compromise too much... I would pick a decent-ish quality. Like I would never go for the cheapest."

- Online shop, Female, 25-39, Household income: above £65,000

"Anything that is generally branded, like [Brand X] I will always buy. I won't use a cheap antiperspirant...you don't want to compromise on quality with something as important as hygiene."

- Online shop, Male, 40-59, Household income: £45,001 - £65,000

How unit pricing compares to other ways of perceiving value

As noted earlier, participants used a wide range of rules of thumb to perceive good value. These were commonly used instead of unit pricing.

Some examples of these rules are:

- **Discounted items are bargains:** Discounted products in-store or on discount pages online, are perceived to be much better value than other similar product which are not on promotion.
- **Bigger pack size indicates lower unit cost:** Some participants automatically assumed all larger pack sizes of the same product have a lower price per item.
- **Economy own brand ranges are always seen as the cheapest on the shelf:** It is common for participants to assume that the economy own brand ranges of items are always priced lower than the branded equivalents.
- **Loose items, lower cost:** Some participants believed that loose foods cost less, as they're not paying for packaging.
- **Multi-pack provides a discount:** Where multiple items are sold together, participants assume the price per item is always less.
- **Price matching claims signal good value:** Participants believed that supermarkets would only highlight a price match if it was the lowest cost on the market.

"But you just psychologically think that the biggest would be the cheapest."

- Online shop, Female, 25-39, Household income: above £65,000

"So, I've noticed that the supermarket own brands, they are a bit cheaper. The other ones are usually £1.85 or something... Because I've already paid a pound before for packets of popcorn. And when I saw that they were a £1.85, I thought, oh, it's 85 pence extra, for which I paid a pound for.

- *In-store shop, Male, 40-59, Household income: above £65,000*

"It's usually cheaper [buying loose] when you're buying a certain amount... I normally only want two potatoes to do jacket potatoes, and it only cost me 60p the other day."

- *Online shop, Female, 25-39, Household income: less than £18,000*

"I usually buy the multi pack because that is better value, but they didn't have it. But had they have had that, then yeah, I would have gone for that just because it is cheaper."

- *In-store shop, Female, 25-39, Household income: less than £18,000*

"What influenced my decision [to purchase the milk]? The price match... And the flour? Probably the price match again".

- *In-store shop, Male, over 60 years, Household income: £18,000-30,000*

While the use of these rules in preference to unit pricing varied widely, they were more commonly observed among participants who valued convenience and speed when shopping or when participants were under time pressure. In these scenarios price comparisons of any kind rarely occurred.

However, when reflecting on these rules of thumb in interviews, participants were less sure that they were always provided best value, and one participant gave an example of a branded product that had a lower cost than the own-brand item.

How discounts and offers can influence the use of unit pricing

All participants, regardless of their purchasing style, were found to check for discounts, even for pre-planned purchases.

Automatic purchases of discounted items often occurred when shoppers had previously purchased a product, had satisfactory experiences with the product, viewed the product as functionally equivalent to others, or when premium items

were discounted to a more affordable price. In these cases, deliberate unit price comparisons were infrequently observed.

"I always look at a discount when I see one. If it's something I want. Especially if it's something I've had my eye on for a while but is a bit pricey. I have a rough idea of what I'm willing to spend so if it works with that, I might give it a go."

- Online shop, Female, 25-39, Household income: less than £18,000

In addition, shelves of discounted items in supermarkets or 'offers' pages online can feel busy and overwhelming for the shopper, meaning identifying and making use of unit pricing information requires greater time and energy. Many participants believed that BOGOF offers and discounts are visually more accessible and allow them to quickly make decisions around value without needing to use unit pricing.

As noted, a minority of participants were sceptical about how supermarkets signal value and so used unit pricing to check if a deal was too good to be true. Closely linked to this was a feeling amongst this group that unit pricing was not communicated clearly when used alongside discounts and loyalty card prices. For example, it was unclear to these participants whether the unit price referred to the discounted or loyalty card price, or the regular price of the item (they assumed the former).

Pen Portrait 4: Meet Rajiv...

A lifetime of savvy shopping has led him to keep rough unit prices in his head.



Rajiv lives alone and has a well-paid charity job. Growing up in a low-income household means he was always taught to pay attention to price and whether he's getting best value for money. Despite his comfortable lifestyle, he still tries to be savvy with his shopping, at least when he has the time and energy. He spontaneously mentioned unit pricing and actively uses it as a factor in his decision-making process, although it

isn't something he'll look at for every item. His interest in price means he has a comprehensive working knowledge of what good value looks like for the categories he tends to shop in. While shopping, he can recall the unit price for certain staple items such as rice, bread and potatoes, and uses it as a key factor when calculating value. On occasions where he's buying something for the first time or he notices a stark difference in absolute price, he would pay more attention to unit pricing to compare what's going to give him best value for money.

How the use of unit pricing has changed during the cost-of-living crisis

Participants were all highly aware of the cost-of-living crisis and had noticed how the price of groceries had risen significantly over the last year. Against this backdrop, almost all of them had made some effort to reduce the cost of their shopping and save money. However, participants deployed a ranged of methods to try and save money and unit pricing was only one approach that shoppers used to compare products and find the best value. Around half our sample rarely or never used unit pricing, and the cost-of-living crisis had not appeared to prompt people to use unit pricing for the first time.

Specifically, participants that were already using unit pricing to determine value reported that they were using it more frequently since the cost-of-living crisis began. Participants that rarely or were not using unit pricing instead used other methods to cut costs and find value, such as searching for discounts or buying own brand essentials, were performing these behaviours more frequently. Overall, the increased use of unit pricing due to the cost-of-living crisis was limited to amongst those who were already aware of and using unit pricing.

"I use [unit pricing] a lot more now because of the price of the shopping. Your shopping has got a lot more expensive now. I mean, every time you go in to buy something, it's went up."

- *Online shop, Female, over 60 years, Household income: £18,000 - £30,000*

"[The cost-of-living crisis] does make you more aware and I suppose it just drives a more value for money desire out of all of us. And certainly, with my lifestyle and what I have, I just want value all the time. So do I use the unit price more?... I think I'm more aware of it and by being more aware of it, I may be using it in some aspects more."

- *Online shop, Male, 40-59, Household income: above £65,000*

"With the price of living and the cost of living, I suppose everybody wants to know that they're making a saving somehow. But for me personally, I wouldn't necessarily look at that [the unit price]. I don't think it really interests me. I'm thinking about [selling] price and I'm thinking about the quality of the product."

- *Online shop, Female, 25-39, Household income: less than £18,000*

"[In terms of the cost-of-living crisis] I'll normally just go around and see if I can find the best [selling] prices. And then what I'll do is I'll go straight to the reduced aisle where the fruits and veggies, see if I can find anything in there."

- *In-store shop, Male, 25-39, Household income: £18,000 - £30,000*

Differences in the use of unit pricing in-store versus online

Participants were observed to use unit pricing both in-store and online. However, despite certain features of online shopping potentially aiding unit price comparisons, it was more frequently used in-store. This was because there were different styles of shopping in each channel, and greater time was spent browsing in-store. In comparison, online shopping was quicker, and participants spent less time comparing the unit price of items.

Several features of online shopping were observed to potentially make it easier for participants to compare products using unit pricing. For example, participants did not have to process as much information when online compared with in-store shops. Website page layouts were relatively consistent, and product information, including unit pricing, was neatly organised in rows. Moreover, online shops were carried out individually without the presence of other people or other distractions in-store. The flexibility of when and how participants could access online shops, plus not having to travel and physically spend time in-store, meant participants viewed online shopping as more convenient and less stressful. All these factors make unit pricing easier to use during online shopping.⁸

"Online shops are easy because as soon as you have the item in front of you, you can see the unit price right next to it. Sometimes in the [in-store] shop, it can be hidden, and you have to properly search for it."

- *Online shop, Male, 18-24, Household income: £30,001 - £45,000*

Despite this, most participants were less inclined to use unit pricing online. During online shopping trips, participants routinely used 'favourites', 'previously bought' lists, and 'you may have forgotten' lists as part of their online shop. The presence of a search bar also meant that participants could find the exact item they wanted, and some participants that tried to browse online found the websites to be overwhelming in this context. All these factors meant participants undertook online shopping

⁸ It should be noted that there were several features of online shops that did not aid the use of unit pricing online. Depending on the individual's device settings, unit pricing information could be very small, and advertisements and offers could often clutter webpages, distracting from unit pricing information.

quickly, purchasing previously brought or specific items, with less time spent comparing goods.

"I think because I have already saved in my favourites the products, I want I've already compared those prices... I don't have to really think about it. Apart from the products that I've had to search on the search bar."

- Online shop, Male, 18-24, Household income: £30,001 - £45,000

"I mean, it's 100% quicker doing it online because like you've seen, I just basically just search for it and I kind of know exactly what I'm looking for."

- Online shop, Male, 25-39, Household income: £45,001 - £65,000

Furthermore, several participants reported that they often multitasked whilst online shopping. Using their smartphone, they would scroll through and do their shop whilst on the move, whilst watching the kids, or relaxing in front of the TV. Multi-tasking behaviour was less common (though was observed during fieldwork) when the shop was undertaken on a desk-top computer. Participants also reported that they would usually add to their online shopping at different times during the week. These occasions were generally for forgotten items and did not involve the use of unit pricing.

In addition to these factors, participants that shopped online were more likely to see shopping as a chore and wanted the process to be streamlined. Online shopping was chosen by participants to be convenient, quick, and easy. Using unit pricing requires time and effort that these participants did not want to expend.

In comparison, participants were observed to 'browse' shelves in-store to a greater extent than when using screens. This style of shopping meant there were more occasions in-store where participants were actively deciding on which product to buy. Participants would use information, including unit pricing, to compare products. Participants also described looking for "inspiration" when shopping in-store, essentially allowing items they had not planned to purchase catch their eye.

"I'm a completely different shopper online. That stuff today [online], in and out, bang, bang, bang... When I go in at the shop, I give more care and attention because I'm making more of an effort."

- Online shop, Male, 40-59, Household income: above £65,000

Ease of use and ideas for improving the use of unit pricing

Participants who routinely used unit pricing identified several issues that would need to be resolved to encourage them to use it more frequently, and to encourage more widespread usage of unit pricing. Infrequent and non-users of unit pricing felt the current information was acceptable and were less concerned with the need for changes.

Overall, they said unit pricing as a concept was intuitive, and even participants who had never previously heard of unit pricing were generally able to quickly grasp the idea once it was explained to them. However, the extent to which participants found unit pricing easy to use was mixed.

Participants found certain units easier and more intuitive to use than others. All participants were happy with metric measurements of weight and volume as opposed to imperial. What was more important to users of unit pricing was that units of measurement were consistent across categories and similar products. Where standardisation exists, it was seen as easier to compare products at speed and reduce the need to use mental arithmetic in-store to convert numbers.

"I would want to see everything in the same measurement, if that makes sense... If I was comparing two types of potatoes or whatever, I would want to see both labels in either grams or kilograms just because I'm usually in a bit of a rush."

- *In-store shop, Female, 25-39, Household income: less than £18,000*

Participants also identified that sometimes the unit of measurement felt disconnected from how they consumed an item. For example, participants mentioned the unit price for smoked salmon being measured in price per kg. As pack sizes were never more than a few hundred grams, the unit price did not feel relevant. Additionally, as the unit price was far higher than the selling price, it acted as a disincentive to purchase.

Similarly, participants thought of several products as being 'single use', such as tea bags. When the unit price was shown by weight, people could not conceptualise what 100g of tea looked like. Similar concerns were raised by participants in the context of loose foods, such as onions. Recipes commonly call for 1 or 2 onions, not a specified weight of onions. For these types of items, participants felt a unit price 'each' or 'per item' was a much more relevant measurement.

"Yeah, whereas the [laundry detergent] pods, the little pods, having price per wash is more useful information for me... Same with, like, tea bags. I know I'm only going to use one tea bag per cup of tea."

- *Online shop, Female, 25-39, Household income: above £65,000*

Finally, participants were generally against unit prices being shown 'per serving', as they felt such measures to be subjective.

Participants described five key barriers to using unit pricing

Throughout our research, participants described the following common problems they encountered when using unit pricing:

1. **Unclear presentation on labels.** Most participants felt the current presentation of unit pricing was too discreet. This concerned all aspects of the execution including the placement (generally bottom left and read last), the size relative to other information on the label, faint font colours, and the general busyness of labels and displays. This was consistent across both in-store and online presentation.
2. **Inconsistency in the measurement unit used.** Participants spontaneously mentioned that they had encountered situations where two similar products used different measurements, making the unit price less useful.
3. **A lack of awareness.** Participants felt that not enough is done to draw attention to unit pricing and make people aware of how to use it. Some participants did not know it existed. Participants had become aware of unit pricing through their social circles rather than through formal education or awareness campaigns.
4. **Confusion when used with discounts.** When combined with discounts, participants were confused over whether the unit price reflected the original price, or the discounted price. As mentioned earlier, loyalty scheme discounts were particularly confusing here.
5. **Certain groups are more likely to struggle with unit pricing in its current form.** Some participants strongly felt those with sight impairments and older people may be more likely to struggle with unit pricing unless it was made bolder. Participants felt those with learning disabilities such as dyslexia or dyscalculia would benefit from greater standardisation to avoid calculation errors.

"I think they just need to make [unit pricing] more consistent and clearer. And also, I feel like a lot of the time it's the most tiny little font in the corner of the thing and that's not what people are looking at."

- *Online shop, Female, 25-39, Household income: less than £30,001 - £45,000*

"I find whenever there's, like, a [loyalty card] price or an offer, and then it talks about the unit price, sometimes I'm like, is that with that offer on, or is that the original unit price? So, I would hesitate over that sometimes and be a little bit confused. Maybe if I spent, like, 30 seconds, I would figure it out. But sometimes I don't have 30 seconds, and I would just then go past it because I'm like I'm not confident that that's correct with that offer in place."

- Online shop, Female, 25-39, Household income above £65,000

"I do think that there perhaps are people who are Dyslexic or have got Dyscalculia, might find it confusing or can't read it very well or just their eyesight is a bit poor, who wouldn't be able to look at that."

- In-store shop, Female, Over 60 years, Household income: less than £18,000

"Supermarkets, they'll sell nuts in several different places. They might sell it in the health food section. There might be some in the baking section and there also might be some in the snack section. And because they were quite expensive, I thought, well, I'll have a good look round and see how big the bags are this, that and the other. And what I found was on one label they priced them per 100 grams, on another label, they priced them in kilos."

- In-store shop, Female, Over 60 years, Household income: less than £18,000

Shoppers would welcome easier ways to compare fruit and vegetable prices

Participants singled out fresh fruit and vegetables as a category where it was particularly difficult to make comparisons based on unit pricing.

Loose fruit and vegetables were sold either by weight or by item, but the pre-packaged versions did not always use the same measurement as the equivalent food sold loose. Participants felt that comparing the unit price per item to that per weight was very difficult, and they would have to weigh the item to work it out. In all our observations, the use of weighing scales at point of purchase was not observed.

"I think when it starts to kind of be loose veg and packed veg, I think I get a bit lost at that point because I'm like I don't quite know how much this weighs, so I can't figure out how much it's going to be"

- In-store shop, Female, 25-39, £45,001 - £65,000

In addition, participants felt that loose items measured by weight were particularly unhelpful as they were poor at estimating the weight of the items they had selected. This made loose items feel risky as they did not know what they were going to pay until they got to the till.

"I tried to buy some sweet potatoes loose and it was a crazy amount at the till. I was like, what the hell did I just do? I picked up three sweet potatoes and it cost me three pounds something. So, I was lost, and I never went back to that. Since then, I've just stuck with the plastic containers because they're in there and I know the guaranteed amount."

- In-store shop, Male, 25-39, Household income: above £65,000

Shoppers ideas for improvements to unit pricing

For infrequent users and non-users of unit pricing, there was little desire for change related to unit pricing. They felt the information was there if they wanted to consult it. However, those that regularly used unit pricing voiced three main recommendations:

1. **Make it bigger:** relative to other information displayed on labels, unit pricing was one of the smallest.
2. **Make it more obvious:** relative to other information on the shelf or on labels unit pricing information is hidden. There is no signposting to explain how to use unit pricing. Participants felt more needs to be done to make shoppers aware of its presence and usefulness.
3. **Standardise units:** for unit pricing to be relevant and useful, it must be displayed with consistent units of measurement, particularly between similar products.

"No, the information is there. Maybe make [the unit price] a bit bigger. People don't know [about it] because it is small. Maybe that's why I just remember the [selling] price, because obviously that is what you pay it for. But maybe if the unit price was a bit bigger, people or I would remember it a bit more, take more notice. Although you can read it, it's not obvious, it doesn't jump out and you're not inclined to use it."

- In-store shop, Female, 18-24, Household income: less than £18,000

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5. Conclusions

Unit pricing was used to varying degrees by around half of the participants in our sample, and they found it a helpful tool in their armoury to compare the prices of different products and get best value for money.

However, unit pricing takes cognitive effort to use, and participants rely on other 'rules of thumb' to make many purchases. Unit pricing competes with a plethora of information aimed to communicate value in-store, and the discreet way in which unit pricing is displayed means unit pricing can struggle to be noticed – with a proportion of participants unaware of its existence.

There was no clear relationship between the use of unit pricing and socio-demographic characteristics such as household income. Rather 'shopper mindset', time available to shop, and the extent to which people felt tired or were distracted were more influential.

While the use of unit pricing was subjective and dependent on a range of factors unique to the individual, it was mainly used to compare store cupboard essentials such as tinned goods, pasta and rice, and household cleaning products such as bleach. For these grocery categories, price played an important role in the decision, rather than other attributes such as quality.

However, there were many product categories and choice contexts where unit pricing was less commonly used, mainly as unit pricing was associated with getting value by buying products in large volumes and quantities. Unit pricing was seen as less relevant for perishable foods in this context.

Other barriers to use included different units of measurements being used across similar products, and units of measurement that were not intuitive to how participants consumed a product. Unit pricing was especially challenging to use when shopping for fresh fruit and vegetables. This was because loose versus prepacked foods tended to have a mix of by-weight and by-item measurements that participants found hard to compare.

There were marked differences between use of unit pricing in-store versus online. Despite online shopping overcoming many barriers to the potential use of unit pricing, as the information is more clearly displayed, and the shopping environment is less busy, greater use was actually observed in-store. There were three reasons for this – first was the streamlined shopping process online and ease with which favourites or items previously bought can be purchased again. Second was the greater propensity for shoppers to compare products and look for deals in-store, compared with online. Third was mindset, and a tendency to either get the online shop done as quickly as possible, or to multitask while online shopping, with less attention paid to browsing.

To encourage greater use of unit pricing, based on this research, a focus on awareness raising, plus greater prominence and consistency in how unit pricing is displayed will be needed. Unit pricing needs to make sense to shoppers and be valued by them. This not only means that units of measurement need to be more intuitive, but also that unit pricing needs to be made more salient to the everyday choices where shoppers can get better value for money. In this context, practical examples and myth busting - for example, showing where relying on rules of thumb (such as '3 for 2') may not always lead to the best deal - is likely to be needed. Additionally, a series of practical changes to how unit pricing is presented, mainly centred on the need to make it more obvious and easier to read, were recommended by participants to drive its wider use.

Appendix 1. Sample

Characteristic	Minimum quota	Achieved sample
		N = 50
Mode		
In person	25	25
Online	25	25
Supermarket (only loose quotas used)		
Tesco	4	9
Sainsbury's	4	5
Asda	4	7
Aldi	4	3
Lidl	4	7
Iceland	4	6
Waitrose	4	4
Morrison's	4	6
Ocado	4	3
Co-op	4	0
Gender		
Male	23	21
Female	23	29
Age group		
18-24	10	9
25-39	10	17
40-59	10	15
60+	10	9
Region		
England (North, Midlands and South)	25	25
In person		13

Online		12
Northern Ireland	7	7
In person		3
Online		4
Scotland	10	10
In person		5
Online		5
Wales	8	8
In person		4
Online		4
Social Grade		
AB	15	16
C1C2	15	20
DE	15	14
Ethnicity		
Asian/British Asian	5	6
Black, Black British, Caribbean or African	5	6
Mixed or multiple ethnic background	5	5
White British	20	32
Other Ethnic group	5	1
Household composition		
Living alone	10	11
Couples with no children	10	16
Family with children (inc. single parent)	10	15
Multi-occupancy, unrelated adults	10	8
Household income		
Less than £18,000	5	13

£18,001 - £30,000	5	10
£30,001 - £45,000	5	7
£45,001 - £65,000	5	8
Over £65,001	5	12
Education Level		
No formal education	10	9
Level 1 - 3 (GCSE, A Level or NVQ)	15	16
Level 4 or higher (higher education, degree, masters etc.)	10	25

Appendix 2. Discussion guides

Pre-Meet Discussion guide

Timings	Content
3 mins	<p>Section 1: Welcome</p> <p>Hi, nice to meet you. My name is [XXX]. I work for a company called Basis Social. We are an independent research agency who are currently carrying out a study into shopping behaviours on the behalf of the Competition and Markets Authority - known as the CMA for short. The CMA is the UK's competition regulator, their work focuses on making sure that competition between businesses works fairly for consumers, and they have powers to ensure businesses treat their customers fairly.</p> <p>The aim of our research is to understand more about the ways that people shop for groceries and make decisions about which products to buy. This research has several different stages to it and will include us observing you doing your shopping.</p> <p>The focus of today's conversation is to get to know you a bit better and learn more about your general shopping habits. I will also spend some time at the end of our conversation explaining what you can expect from the next stage of research and can answer any questions you have about the project.</p>

	<p>I intend to record our conversation today for my note taking purposes. Are you happy for me to do this? [All participants have previously provided written consent.] If you are happy, I'll start recording the session now. [Gain verbal consent on the recording].</p> <p>MODERATOR, PLEASE ENSURE YOU TURN THE RECORDING ON.</p> <p>Thank you.</p> <p>Finally, Basis Social are a company partner of a body called the Market Research Society and we abide by their code of conduct. Your participation today is completely voluntary, and you can withdraw your consent to participate at any point in this process. That could be during our interview today, halfway through the research or up until we write our report in August 2023. However, you will only receive the full incentive if you complete all three stages of the research. These are the briefing interview today, the shop along, and the follow up interview. Is that clear to you?</p> <p>Do you have any questions before we start?</p>
<p>10 mins</p>	<p>Section 2: Introductions</p> <p>Purpose: to get to know participant and put them at their ease</p> <p>Moderator to begin...</p> <p>Thanks. Before we talk more about shopping specifically, it would be great to get to get know you a bit better.</p> <ul style="list-style-type: none"> • Can you say a few words to introduce yourself? • How would your friends describe you? • Tell me about where you live? • Do you live alone or with others? <ul style="list-style-type: none"> • Tell me about what life is like for you right now? <p>There is a lot in the news about the cost-of-living crisis, at the moment...</p> <ul style="list-style-type: none"> • Is this something which is impacting you at all? If so, how? • To what extent has the cost of your grocery shopping changed over recent months? • What has been the impact of the cost-of-living crisis on your

	<p>shopping specifically? [Probe]</p> <ul style="list-style-type: none"> o Have you made any changes to what you buy because of this? o Have you made any changes to where or how you shop? o Do you go about doing your shop differently in any other way?
<p>10 mins</p>	<p>Section 3: Grocery shopping</p> <p>Purpose: to understand more about the participant's shopping habits and common behaviours and the factors which underpin and shape these.</p> <p>Thank you. I now want to spend a bit more time talking about how you do your grocery shopping.</p> <ul style="list-style-type: none"> • How often do you shop for groceries? • How many people are you usually shopping for? • Is that online or in person? <ul style="list-style-type: none"> o [If both] What influences whether you chose to shop online or in person? • Describe your approach to grocery shopping. • To what extent are the following important to you? <ul style="list-style-type: none"> o Quality? o Price? o Convenience? o Variety or range of choice? o Which is the most important? If this depends on anything, what is this? • Do you tend to make shopping lists and plan your shop or not? • Do you generally buy the same things each week, or vary what's in the basket? • Do you tend to shop on a specific day of the week or time of day? • Do you tend to do a big shop, or lots of smaller ones? Or a mixture? Why? • In what circumstances would you be doing a big shop vs a smaller one? • Which retailers do you typically shop at? • Why do you choose them? • Do you go to different shops depending on how much you plan to buy? • Do you have a loyalty card at any of these retailers? • If so, does this impact how you shop in any way?

	<ul style="list-style-type: none"> • If participant shops online: • Thinking about online shopping, are you the type of person does all their online shop at once, or do you add things to your basket over time? <ul style="list-style-type: none"> ○ If this varies, why?
<p>7 mins</p>	<p>Section 4: Explaining the research process</p> <p>Purpose: to explain more to the participant about the research</p> <p>[Moderator to thank the participant and then explain they will now share some additional information about the research they will have already agreed to be participating in.]</p> <p>Just to recap on the next steps of this research.</p> <p>As mentioned, the aim of this project is to understand more about how people across the UK do their grocery shopping. As part of this we want to spend time observing how different people shop, both online and in-store.</p> <p>[For in-store accompanied shops]</p> <p>We have chosen to accompany you when you shop in-store.</p> <p>We will have a researcher from our team join you on a shopping trip to one of the stores you commonly visit. They will stay some way behind you and simply observe how you move through the store and which choices you make. They may be making notes or voice recordings.</p> <p>They will also take some photographs of the shelf display for some of the items you purchase but they won't interact with you during the shop.</p> <p>The whole point is to make this as natural as possible – so please try and shop exactly as you would if they weren't there. This also means if you usually shop with your children or partner (or anyone else) feel free to bring them. We just want to see how you usually shop.</p> <p>After the shop is complete, later that day they will travel to your home to discuss with you your experience of that shop and discuss</p>

some of the factors that influenced your experience. This follow-up interview will take no longer than 90 minutes.

Do you have any questions about the process?

The recruiter said you were happy to do [DATE], what sort of time would suit you for us to meet, for the shop? Bearing in mind that we need to do the interview later that day.

If you're currently unsure, can I call you in the coming days to work out the schedule?

[For online shops]

We have chosen to observe you doing an online shop.

We will have a researcher from our team watch how you do an online shop. To do this, we will join you on a zoom call and then ask you to share your screen as you shop. We will talk you through how to do this. We will also record this for our own analytical purposes.

The whole point is to make this as natural as possible – so please try and shop exactly as you would if they weren't there. Consequently, whilst you shop, the researcher will remain on mute and turn off their camera.

After the shop is complete, we will take a break, and then discuss with you your experience of that shop and discuss some of the factors that influenced your experience.

Do you have any questions about the process?

The recruiter said you were happy to do [DATE], what sort of time would suit you for us to meet online for the shop? Bearing in mind that we need to do the interview later that day.

If you're currently unsure, I can call you in the coming days to work out the schedule?

[For both]

	<p>Ok, thank you so much for all your help and time today. It's been really good to meet and talk with you. That's all the questions I had.</p> <p>Do you have any other questions for me right now about the research?</p> <p>We will be back in contact in coming days with more information on the next stage or research and to confirm a time to accompany you on your shop.</p> <p>Thanks again and have a great rest of your day.</p>
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Post shop interview discussion guide

Timings	Content
2 mins	<p>Section 1: Welcome and introduction</p> <p>Moderator to begin:</p> <p>"Great to see you again and thanks for allowing me to ask some follow-up questions about your shopping experience in more depth.</p> <p>The focus of this conversation is to hear a bit more about how you went about your shop today, the factors that influenced what you bought and how you went about weighing up any choices you made between items.</p> <p>Before we begin to discuss this in more detail, I'm aware that when we shop, we can make decisions on autopilot, and therefore you might not be fully conscious of why you picked certain items or came to the decisions you did. That is completely fine and there is no pressure for you to provide a rationale for your choices.</p> <p>I intend to record our conversation today, are you happy for me to do this? [Moderator to gain verbal consent at the start of the recording. All participants have previously provided written consent.]</p> <p>MODERATOR ENSURE YOU TURN THE RECORDING ON PLEASE</p> <p>Thank you.</p>

	<p>Finally, Basis Social are a company partner of a body called the Market Research Society and we abide by their code of conduct. Your participation today is completely voluntary, and you can withdraw your consent to participate at any point in this process. That means during our interview today, or up until we write our report in August 2023.</p> <p>Is that all clear? Any questions before we begin?</p>
10 mins	<p>Section 2: Shopping trip context</p> <p>As you know I took a lot of notes during your shop, but before I discuss these with you, I'm interested in hearing more about your views on the experience.</p> <ul style="list-style-type: none"> • How was the shop for you today? • How did you find the experience? How were you feeling? • What was the purpose of the shop? For example, was it just a regular weekly shop, a top up and/or to buy certain items for a specific occasion? • Why did you choose to shop at [the specific store/website]? • Was there anything notable about shop today? How did it compare to other shops you do? Did anything happen that influenced your purchases? • [If observed using a list] I noticed you had a shopping list? Did you stick to it? Do you generally use a shopping list? • [If did not appear to use a shopping list] You didn't appear to be using a list, why didn't you use one? • Did you have a budget in mind today? Did you stick to it?
25 – 55 mins	<p>Section 3: Reconstruction and reflections</p> <p>Purpose: to identify factors that contribute to decision making when purchasing items and determine if unit pricing was relevant to decision making</p> <p><i>[Moderator note: during this section you will be aiming to identify up to 10 items where there was an active purchase decision (as opposed to a pre-planned purchase, including repeat purchases). Such decisions can involve a choice in terms of the category, brand, or size/format of the item. Ensure a good spread of choices across different products and categories. The purpose is to understand the influences upon the decision, and whether unit pricing was one of these influences.]</i></p>

You will need to come with a list of items from the ethnography and will need to confirm these were not pre planned or repeat purchases during the interview. For larger shops, moderators can spend up to 55 minutes on this section]

I now want to spend some time focusing on what you bought today and why. I'm going to pick some occasions where I observed you purchasing items.

For each, I'm going to show you some pictures/a video clip [for in store/online] and would like you to describe how you made the choice. We'll spend up around 5 minutes on each item, but may cover a few more if time permits.

[Moderator note: ask the participants to point to any specific information captured in the photo/video, as they are unlikely to use the term 'unit pricing. Use the following three questions are to determine if the purchase was pre planned or if the decision was made in-store/online. For decisions made in-store/online, please determine factors that influenced the decision. For pre-planned or repeat purchase move on to next item.]

Before you began your shop...

- had you planned to buy [category e.g. Cheddar cheese]?
[IF NO – A decision was made in-store/online, move onto factors influencing decision]
- [IF YES, ASK...] Were you planning to buy [that specific brand]
[IF NO – A decision was made in-store/online, move onto factors influencing decision]
- [IF YES, ASK...] Were you planning to buy [that size/format item e.g. the 550g big pack?]
- [IF NO – A decision was made in store, move onto factors influencing decision]
- [IF YES – Purchase was entirely pre planned, and no decision was made in store – move onto next item]

For each decision made in store, determine factors that influenced decision

	<p><i>[Look for mentions of value and unit pricing as influences, but do not probe specifically on these so as not to lead participants]</i></p> <ul style="list-style-type: none"> • Was there anything that attracted you to this item vs other items? • What mattered to you most when making this purchase? Why? • Did you seek out any information to help you decide whether to buy this item? <ul style="list-style-type: none"> • What did you look for? [point to photo/video] • Did you compare this item to other items? If so, what did you compare? • Have you done any research on this [category/brand/size/format] before today? <p><i>[Repeat these questions across each of the identified purchase decisions, being sure to fully understand which factors influenced their decision]</i></p> <p>For any spontaneous mentions/demonstration that unit pricing was used, ask:</p> <ul style="list-style-type: none"> • Can you tell me more about how you used this pricing information? • What do you think the pricing here shows? • When you were looking at this in-store/online, did you find it easy to understand? • Was it easy to find during your shop today? • Was there anything about how this information was presented that made it easy or difficult to use today? • Did you feel confident today that you could use that information to compare the price of items?
20 mins	<p>Section 4: Comparing price when making decisions</p> <p>Purpose: to determine how much of a role pricing and unit pricing plays in decision making</p> <p><i>Moderator to use receipt and/or shopping list as stimulus to remind them of other purchases.</i></p> <p>Thinking back over your shop today, beyond the items we've already discussed...</p> <ul style="list-style-type: none"> • Did you compare the price of any other items when deciding what to buy? • What items?

- Tell me how you compared the price?
- Were there any instances today where you found it challenging to work out if an item was good value or not?

To what extent did any of the following influence your purchase decisions today:

- An item being on sale
- An offer, like 2 for 1 or buy one get one free
- A discount for using a loyalty card
- Price matching claims
- The size of the item – i.e. 'value' size
 - [If any of these are mentioned as having influenced purchase decisions, probe to understand how]

One of the things we're interested in today is whether people use unit pricing.

[If not mentioned and discussed previously]

- Have you heard of the term unit pricing before?
- What do you think it means?
- This is an example of unit pricing [Show multiple examples from the shop or back up stimulus if required. Moderator to probe comprehension again once images have been shown].

[Moderator to explain...]

Unit pricing helps consumers compare the prices of goods when those goods aren't sold in equal quantities. Unit pricing tells shoppers how much they're paying for each unit within the package, giving them an apples-to-apples comparison. The units are usually units of measurement like price per kilogram or price per litre, or may be for individual items, such price per banana in a bag.

- Do you feel this information is easy to understand?
- Have you ever used this type of pricing before as part of your shop?

For those that have used unit pricing:

- Are there particular categories of products that you use unit pricing with? By categories we mean the types of things you shop for, such as [use examples from shop]. Why do you use unit pricing for these categories and not others?
- Are there particular brands that you use unit pricing with? Why?
- Are there particular sizes/formats that you tend to use unit

pricing with? Why?

- How do you use it?

[Probe]

- Price and value for money
- Different formats i.e. washing tablets vs powder
- Different sizes of products
- Loose foods, such as vegetables
- Meat, fish, and deli counters

- To what extent is unit pricing useful when making these comparisons during your shop?
- To what extent do you feel confident using unit pricing?
- To what extent do you have any challenges using unit pricing?
[Probe]
 - When comparing with promotions/discounts/loyalty prices
 - Having to use numeracy skills/calculations
 - Extent to which unit pricing is clearly displayed

- Are there particular types of unit measurements that you find it easy or difficult to understand?

[Show examples from the shopping trip or back up stimulus e.g....]

- by weight e.g. price per 100g
- by volume e.g. price per litre
- by unit e.g. price per item
- by number of uses e.g. washes
- by serving e.g. price per serving

- How easy or difficult do you find it to use unit pricing to compare the following:

[show examples from their shopping trip or backup stimulus e.g....]

- Different formats e.g., laundry tablets vs powder
- Products where different units are used
 - price per 100g vs per kg?
 - Price per item vs weight i.e. for fresh fruit and veg
 - Teabags – by weight or by teabag?
 - Toilet roll – by roll or sheet?
 - Baby wipes – per weight or by number?

- [For each, probe how used, and any challenges associated with use]

- Do you ever use unit pricing to compare the price of products sold in different shops or retailers? How do you do this?
- If you are shopping online, do you use unit pricing in the same way you do in store? What might be different?
- To what extent are you using unit pricing more now than in the past? Why?
- In your view, does anything about the way supermarkets use unit pricing need to change?

For those that have not used unit pricing:

[Moderator to explain if not already clear:]

Unit pricing helps consumers compare the prices of goods when those goods aren't sold in equal quantities. Unit pricing tells shoppers how much they're paying for each unit within the package, giving them an apples-to-apples comparison. The units are usually units of measurement like price per kilogram or price per litre, or may be for individual items, such price per banana in a bag, or they may be units of measurement like price per kilogram or price per litre.

- Why have you not used it?
- Is this type of pricing potentially helpful to you when making decisions about products or not?

[Moderator to explain...]

Unit pricing can be used in a number of ways...

[Show examples from the shopping trip or backup stimulus if required]

- by weight e.g. price per 100g
 - by volume e.g. price per litre
 - by unit e.g. price per item
 - by number of uses e.g. washes
 - by serving e.g. price per serving
- Are there particular types of unit measurements that you think are easy or difficult to understand?

[Show examples from the shopping trip or backup stimulus e.g...]

 - by weight e.g. price per 100g
 - by volume e.g. price per litre
 - by unit e.g. price per item

	<ul style="list-style-type: none"> ○ by number of uses e.g. washes ○ by serving e.g. price per serving <ul style="list-style-type: none"> • How easy or difficult do you find it to use unit pricing to compare the following: <ul style="list-style-type: none"> [show examples from their shopping trip or back up stimulus e.g...] ○ Different formats e.g., laundry tablets vs powder ○ Products where different units are used <ul style="list-style-type: none"> ▪ price per 100g vs per kg? ▪ Teabags – by weight or by teabag? ▪ Toilet roll – by roll or sheet? ▪ Baby wipes – per weight or by number? ○ [For each, probe on any challenges associated with use] • Based on what you've seen, does anything about the way supermarkets display unit pricing need to change? • Would anything encourage you to use unit pricing information in the future?
3 mins	<p>Thanks, and close</p> <p>Thank you very much. That completes my questions. Do you have any things you'd like to raise or questions for me before we finish.</p> <p>Thanks again and have a good rest of your day.</p>