Psychology of Consumer Behaviour and Behavioural Change

To begin to address the critical questions of interest posed in this rapid review which concern what impact food labelling has on consumer choices, what is most effective, and why, this section considers four behavioural scientific areas of importance in relation to food related shopping behaviours:

1. Habit and fluency
2. Behavioural economic factors (for example preferences, values, norms)
3. Behavioural change techniques
4. General impact of labels on consumer behaviour

Thus, the aim here is to present theoretical and empirical insights into the psychological mechanisms (cognitive, social and economic) that inform the way that consumers make decisions with respect to their food purchases, and the general understanding of the role of food labelling.

Cognitive factors: Habit and fluency

Given that the vast majority of decisions regarding food purchasing are conducted in supermarkets, and given that they are frequently occurring, they are repetitive, there is a vast array of options to choose from within each product category, and the choices are of low risk, together these present the core conditions for habit formation to occur . Habits are highly practiced sequences of actions that have become automated over time in response to specific contextual and informational sources, and they are formed because they are able to efficiently serve a clear goal . Thus, it can be expected that consumers that face the same decision context will make highly predictable repetitive choices in order to introduce efficiencies into their behaviour. In turn, it can also be expected that consumers also attend to the same information to inform their choice behaviour25 because consumers are motivated to streamline the time they spend making repeated choices.

To illustrate just how influential habitual purchasing behaviour can be, empirical work using an eye-tracking field study has shown that even when in-store signage is used to promote a particular food product (increasing consumers' visual attention to it), ultimately past product choices were still more predictive of final consumer choices over and above in store efforts to persuade consumers to purchase the promoted product. Crucially, the extent to which promotional in-store signage influenced purchasing decisions interacted with how familiar the consumers were with the store itself – the less familiar they were, the more in-store signage captured their attention and influenced their choice behaviour.

Habit formation is supported by fluency, a core cognitive mechanism that enables the efficiency of processing information to support decision-making that enhances the subjective experience of ease . In shopping contexts, we see two examples of this: perceptual fluency28 and navigational fluency . Familiarity increases fluency, so that the more often a consumer visits the same shopping store, the more they rely on visual cues (for example price , signage , brand information , reduced-price offers) for perceptual fluency, and physical cues (for example location of food item on shelves , location of food in particular aisles) to travel easily and quickly across the store.

Summary – Cognitive Factors: Taken together, work examining habitual consumer behaviour shows that because of the highly repetitive nature of food shopping, consumers streamline their choice behaviour through mechanisms such as fluency via familiarity; this helps to efficiently determine what to look for and where to look for products that will be purchased.

This means that unless there are strong motivational reasons to change, those consumers highly familiar with a store will attend to the same information, attend to it in a shallow way, avoid making multiple comparisons between food products of a given category, and choose the same routes around a store. In cases where consumers are less familiar with the store, they are more influenced by a range of informational sources, though most often this is in-store promotional offers, along with branding and price. Strong motivational reasons to change behaviour include: health reasons (for example pregnancy , ill health , developing food allergies , obesity), financial circumstances (for example loss of earnings , changes in occupation), and social factors (for example adopting food habits of a social group through changes in lifestyle , location , or religion).

Cognitive, Social and Economic factors: Behavioural Economics Factors (for example preferences, values, norms)

Behavioural economic analysis of consumer choices combines insights from cognitive psychology, social psychology, consumer psychology, sociology, and economics . In general, the different disciplines are combined to develop theories and frameworks to determine answers to questions regarding: What works? Why does it work? What more needs to be done? The latter of which will be addressed in the next section ‘Behavioural Change Techniques.

What works? The Basics: Basic understandings of consumer behaviour are informed by behaviourist models, such as those devised by Watson in the 1920’s that outlines the association between stimuli (cues from the environment) and their effects on behaviour via reinforcement mechanisms. In particular, there was a new movement of applied scientific research that sought to understand how marketing and advertising was able to motivate needs, preferences and desires for goods (and services) that were not originally in the profile of needs, preferences and desires that a consumer had . In answer to the question “What works?”, the findings from early research, and since, is that it was possible to direct, through behavioural engineering (i.e. early methods of behavioural change), ways of influencing consumptive habits via conditioned emotional control responses. Through a variety of combinations of visual stimuli, verbal stimuli (messages), and other sensorial cues (for example sounds, tastes, odours), based on early theoretical work driven by behaviourists, it was possible to predict which stimuli would optimally drive consumer choices in carefully controlled conditions . This work was then expanded to take into account social cues (for example preferences, values, norms) that also inform the way in which consumers make their choices in asocial (for example stores, supermarkets) as well as social contexts (for example canteens, restaurants).

In what ways do these social cues influence consumer behaviour? Theories such as the Identity-based motivation (IBM) theory , Value-Beliefs-Norms (VBN) theory , as well as Social-Cognitive (SC) theory help to highlight the salient social factors that motivate choice behaviour. IBM theory and relatedly VBN theory asserts that consumer behaviour is motivated by either individual or group associated norms and values. Identity salience motivates actions, such that when personal identity salience is present then there is an emphasis on achieving personal norms, values, goals and strategies, and achieving agency and control. This type of salience might be more likely triggered in situations where consumer choices are made in isolation of others, such as in a supermarket, or solo dining . Social identity salience occurs where individuals are motivated to act in ways that are congruent with a group’s norms, values, and goals, which might be more

common in contexts where meal choices are made in the presence of others, such as in a canteen or restaurant. Familiar dining companions' values and norms will be a strong motivating factor in each group member's meal choices. To the extent that consumptive choices (for example sustainable consumption, healthy eating) are viewed as an important lifestyle choice by the dining group, and if collective action to surmount a social problem is seen as valuable and achievable, then pro-social meal options are chosen.

Economic factors: In addition to basic cognitive and social psychological research, consumer psychology and sociological factors, traditional economic theory informs behavioural economic research of consumer behaviour, which asserts that consumers are consistent in their preferences and values over time . However, behavioural economics, based primarily on psychological research, suggests that consumers are not so consistent with regard to their preferences and values, which are largely informed by the various factors discussed thus far (for example visual information, textual information [for example labels], social cues). From the work discussed, it is clear that consumers have competing preferences, and the value they place on these preferences can vary significantly based on the consumer context, as well as taste and convenience, offer of immediate rewards, and financial factors. In regards to financial factors, what is clear is that any other factors that inform their choices (for example brand, labels, social cues) are traded-off against the price of any consumer product they purchase . In particular financial factors are shown to take precedence over many other influential factors where there is a price decrease (for example through subsidies) , price increases (for example through taxing to disincentivise unhealthy choices) , and both48.

Summary - Cognitive, Social and Economic factors: Both theoretical and empirical work in the area of behavioural economics of consumer choice behaviour suggests that there are multi-factorial influences on decision-making. At the most basic level, there are visual, verbal and sensorial sources of information that guide consumer choice behaviour. At a level up are social factors, such as salient social factors (for example group identity, for instance identifying with those that are proactive in reducing climate change, or vegans/vegeterians) that motivate choice behaviour, in particular the ways in which individuals associate their identity to social preference, norms, and values that in a social context inform the way individuals make choices based on other around them. This can be observed directly in social contexts when people make collective decisions about their consumptive choices (for example choosing what meals to eat at the home with others or in restaurants). Alternatively, this can be observed indirectly, where social identity (in the absence of others) is still triggered when consumers associate their choices with reference to general preferences, norms and values of a social group they identify with (for example family, friends, religion, culture, society). Finally, the cognitive and social factors are typically offset by financial factors that appear to be one of the most salient aspects driving choice behaviour in consumer contexts.

Behavioural Change Techniques

Another way in which behavioural economics and other disciplines intersect in the context of consumer choice behaviour is through behavioural change. Behavioural change (both the empirical and theoretical frameworks that have been devised) is a way of characterising the processes that ordinarily guide behaviour. From this understanding, it is then possible to develop behavioural techniques (for example nudges) to direct changes in behaviour in a predictable and positive manner (for reviews, see 48 and 85).

To guide researchers and practitioners to design a behavioural intervention, often the first port of call is to analyse the behavioural factors that are most relevant to the context, to then devise the appropriate levels to motivate change. Three of the most common behaviour change frameworks used by several established public institutions, such as the OECD, World Bank, and several governments are: The Behaviour Change Wheel (hereafter BCW) , the Behaviour, Analysis,

Strategies, Interventions, Change (hereafter BASIC) toolkit , and the Easy, Attractive, Social, and Timely (hereafter EAST) framework developed by the Behavioural Insights Team. BCW, EAST, and BASIC share several critical features in common. They are prescriptive in outlining the process of developing behavioural change interventions for targeting social policy issues. Also, in all three frameworks, the establishment of criteria for success of behavioural interventions is quite stringent, since the requirement is that a priori, the researcher and the practitioner need to assert a directional association, along with the magnitude and period in which the outcome following the intervention will be.

A critical limitation of the three common frameworks is that they do not give a precise answer as to whether and when a combination of behaviourally informed and regulatory measures might be more suitable. In the main, the frameworks broadly tell researchers and practitioners what to look out for when designing public policy interventions based on behavioural insights, but crucially, none provide sufficient information on what to expect when combining behavioural interventions with regulatory instruments, such as taxes, even though a combination of choice preserving and choice incentivizing measures are used in many real-world situations.

Nonetheless, of the various different methods of behavioural change that the different frameworks outline, labelling falls under the category of information provision. For example, in the nutritional health domain, traffic light labelling (TLL) is often referred to as an example of information provision designed to inform and motivate behavioural change. In this review TLL does not necessarily refer to the Food Standards Agency (hereafter 'FSA') traffic light labelling system' traffic light labelling system. TLL is hypothesized to simplify information provision by facilitating relative comparisons between different levels of a product attribute, due to automatic associations between colours (for example green, yellow, red) and moral imperatives – that is, red is often associated with harmful outcomes, and green is often associated with good outcomes.

The psychological mechanisms that underpin the influence of labelling largely depend on the type and format that labelling takes on. For instance, with TLL, the idea is that the label supports easy decision-making where comparisons between similar food products can be made. That is a consumer can make simple comparisons of nutritional (and calorific content) information by comparing factors such as energy (for example unit - kilojoules), fat (for example unit -grams), saturates (for example unit -grams), sugars (for example unit -grams) and salt (for example unit -grams) bypercentage intake of the reference intake by either a portion or by 100grams. To ease the comparison based on traffic light coding of nutritional content of food, reference values can also be provided . A reason for doing this is that making relative comparisons of nutritional content of food can be hampered by an absence of basic recommended daily values (for example daily calorie intake for men, women, children). To help make the values more salient, reference values can be presented in the form of physical activity associated with nutritional values, such as calories presented as the expenditure needed (for example average minutes or miles of walking) to expend calories in association with the TLLs . However, the impact of reference values of this kind along with TLLs has been shown to have limited impact on changing consumer behaviour68 . While there are good psychological reasons for hypothesising that reference values can support easier relative comparisons, the one most obvious reason for finding that it does not have any significant additive behavioural change effects is that (as discussed before) consumer attention is limited given the available time to make consumer choices. Thus, by swamping the consumer with multiple details on which to make comparisons, it is likely that consumers will default to the most salient relative comparison they can make, which is price.

Another method of behavioural change is to use a combination of labelling and social norms48 . The idea here is that consumers are provided with critical information about a food product by signaling, especially when making relative comparisons, which of the compared items is the "better" option with reference to social norms . The idea of providing social norm information is that it communicates behaviours of a target group (for example a peer group, or other shoppers). In this way, the idea is to invoke a social identity mode that motivates consumers to consider the

values attributed by a group as to the preference of that group (for example “Customers’ favourite”). In addition, social norms can also invoke a different salient social identity to that typically adopted by a group of diners in order to orientate them towards pro-social values. Stronger forms of this method include injunctive norms (which might be typical or atypical) which communicate (dis)approved of behaviours and which often have a tendency to fail or backfire 85. What we know from the vast literature on social norming labelling is that several conditions need to be satisfied for social norm messages/labels to effectively lead to behaviour change: identification with the reference group; observability of the behaviour; and salience of the social norms .

Summary – Behavioural change techniques: Theoretical frameworks regarding behavioural change, as informed largely by work from psychology and economics, first try to characterise the principles that govern behaviour, and the factors that influence it, so as to develop interventions that can predictably change behaviour for the better. Behavioural change frameworks provide a generic guide to what could be used as interventions, though cannot, in the main, specify which intervention is best suited for the specific target behaviour that needs changing. Despite these limitations, the value of behavioural change frameworks is that they provide a range of previously tested behavioural interventions that can be trialled (with varying degrees of success – for a review see85).

The most common methods that are used in the context of consumer choice food behaviour is the provision of information, either in the form of labelling, or else through the use of social norming. For example, TLL used to communicate nutritional facts about products enables relative comparisons to be made between similar food products. To further assist in making comparisons, reference values (for example physical expenditure) and social norms (for example typical consumers choices) may be used. The overarching idea behind techniques of this kind is so as to make salient information that consumer may either ignore, or do not find useful, when making their choices, and to do this in a manner that makes the information visually and psychologically striking and easy to process. As a result, information that would otherwise not be attended to is then processed, which in turn is assumed to result in changes in behaviour in the direction of specific goals (for example to increase healthy eating, sustainable consumption).

General impact of labels on consumer behaviour

Before presenting a review of the impact of different types of labels on behaviour, this section presents an overview based on summary analyses conducted across multiple studies. The aim here is to give a general impression of the findings overall, and what they reveal regarding the general impact of food labels on consumer behaviour. Thus, one way to assess the general impact of food labelling on consumer behaviour is to look to the many systematic reviews, and meta-analytic studies that have been conducted . Meta-analytic studies differ from general systematic reviews in that they take a particular area (for example nutritional labelling) and statistically examine the overall effect sizes (for example the magnitude of the effect of the labelling on behaviour) based on a collection of empirical studies that have been conducted.

Nutritional and Calorie Labelling: For instance, a recent systematic review (2017) of 53 empirical studies (both field and laboratory studies) on the impact of calorie labelling reported that to date, it is still unclear whether calorie labels on menus have any significant impact on consumer choice behaviour. One of the key reasons for this are methodological issues with the designs of the studies along with low statistical power to determine any reliable effects. Consistent with this, a meta-analytic study (2015) examined the impact of calorific labels on menus on consumptive behaviours in restaurants. The meta-analysis included 14 studies applying strict criteria for inclusion for analytic purposes. In the analysis, before and after menu labelling outcomes were used to determine weighted mean differences in calories, saturated fat, total fat, carbohydrate, and sodium ordered/consumed,which were pooled across studies using

random effects modelling. In laboratory settings, labels were found to reduce calorie consumption, however none of the field studies showed any impact of labelling on reducing quantity of carbohydrates, total fat, saturated fat, sodium, or calories consumed.

A recent meta-analysis (2015) focussed on the effects of three types of food labelling schemes ('Food labelling', 'traffic light labelling', 'traffic-light nutrition labelling', 'Nutrition labelling', 'Nutrition claims labelling', 'Nutrition claims regulation', 'EU regulation food labelling', 'EU nutrition labelling program', 'Traffic light label', 'Public health nutrition', 'Health logo' 'pick the tick', 'Guideline Daily Amounts', 'the Heart Symbol', 'the Choices logo', 'The Choices program in the Netherlands', 'The Keyhole program in Sweden', 'Program less salt is healthier', 'Green check marks', 'EU regulation food labelling', 'EU nutrition labelling program', and 'EU nutritional labelling program) on changing calorie intake. This was based on nine studies that met their criteria of experiments that used a randomised control design (RCT), as well as where possible a pre/post comparison where a RCT was not used. The findings showed that while calorie labelling led to minor increases in the selection of healthy foods, the labelling made little difference on overall calorific consumption. A further meta-analysis (2018) examined the impact of calorie labelling and equivalent physical activity labelling (for example calories [229 calories] and an activity and length of time to complete it to burn off the calories [walking 44 minutes]) on calorie consumption). The analysis included eight studies which were a mixture of laboratory and field experiments, with the overall conclusion being that labels with physical reference points did not make any significant impact on food energy consumption.

A meta-analysis (2018) made up of 28 studies followed similar strict inclusion criteria. . The studies examined nutritional labelling (for example recommended daily intake of sugar, salt, fats, calories and nutritional facts labels) of food and non-alcoholic beverages on calorific consumption, as well as whether there were unintended negative side effects (for example that the labels caused harm by increasing calorie intake - backfiring). While none of the studies showed the presence of negative side effects, only the poorest quality studies showed evidence that labelling led to any positive changes in calorie consumption.
A meta-analysis of several types of food labelling (2019) reported findings from 60 empirical studies (with over 2 million observations across 111 intervention arms in 11 countries). As with the systematic review36, there was huge variability in the methods and designs of the studies, with multiple types of manipulations and multiple types of labels (for example salt, trans fats, nutrients, calories) being examined, and the length of the interventions determining the impact of labelling on behaviour also varied (between less than a week to a year). The conclusion of the meta-analysis was also quite damning. Nutritional labelling did not significantly alter consumer intakes of dietary targets (for example sodium, total carbohydrates, protein, saturated fat, fruits, or whole grains).

Front of Pack Labelling: A recent meta-analytic study (2020) looking at 114 studies examining front of pack nutritional labelling, and a further meta-analysis looking at 19 studies examining sugary drinks warning labels (2020) showed that labelling did not significantly result in positive behavioural changes in food consumption. Two further meta-analytic studies, one on nutritional labelling and physical activity reference points (2020) and health warning labels (for example WARNING: Drinking beverages with added sugar(s) contributes to obesity, diabetes and tooth decay; WARNING: Excess calories cause obesity, which causes [heart disease, bowel cancer, type 2 diabetes]) on food and alcohol (2020) did find positive changes in behaviour. But both these meta-analytic studies acknowledge that the empirical investigations included in the analysis were laboratory studies where, under idealised conditions, labelling is shown to impact hypothetical behaviours.

Eco Labelling: While labelling of nutritional details has gained the most attention, there are systematic reviews of the impact of eco-labelling on food consumption. A systematic review of 56 studies (2021) revealed a positive impact of eco-labelling (i.e. organic, fair-trade, ethical food production, animal welfare, environmentally sustainable, greenhouse gas emissions). Here the

positive impact was determined by increases in the selection of food options that were associated with lower carbon emissions, relative to a control (baseline without the presentation of the food labels). However, there are very few studies examining the impact of labelling on real world food choices in actual consumer settings, and of the four studies that did, the findings across them were mixed. The findings were mixed as a result of variations in sample sizes, whether or not the studies were conducted in the laboratory or in field settings, and whether a randomised control study design was used. Further work is needed to establish whether there is any interaction between the effectiveness of eco-labelling on different consumer groups in field settings, along with comparing different types of eco-labels in real world consumer contexts. What we know from this work and other related work on eco-labelling is that, as with nutritional labels, the types of eco-labels that have been used vary hugely, and so this variability will impact effectiveness. Also, different types of labels are devised by different stakeholders (for example environmental organizations, governments, multi-national, and/or domestic firms) which will also impact effectiveness to change behaviour towards sustainable diets, because the labels will be evaluated according to usefulness and trustworthiness. Finally, as with nutritional labels, consumers vary according to their interests, values, beliefs and what they can afford, which also impacts the extent to which they attend to or use eco-labels to inform their decisions.

Trust in Labels: Finally, one matter of recent importance is how trust informs the way in which consumers make their decisions, particularly when interpreting labels . Theoretical models, such as Tonkin et al. (2015) (see Figure 1), which have been informed by empirical work, suggest that the factors that influence trust in labels are often driven by the attributions of trust in regulatory bodies (for example food safety), food industry (for example marketing claims), brands, and topical news stories concerning food scares and scandals. These are background sources of information ‘priors’ which guide the interpretation of understanding of literal information conveyed through food labels (Trust in the labels) and through association of the labels with food systems (Trust through the labels).

Figure 1. Tolkin, Wilson, Coveney, Webb & Meyer (2015). Conceptualisation of trust judgements made around food labelling

As several studies suggest, food labelling is a mode of communication between the food system and consumers, in the absence of a face-to-face encounter. The value of theoretical work and the empirical findings that support it, is that a critical analysis can be conducted through a framework which describes the factors under which trust judgements are made around food labelling, such as the contextual factors that likely enhance trust in food labels, and inhibit attention to them.

Food labelling can enhance or undermine consumers' expectations of moral, ethical and safety matters in the food system and various agents that play a critical role in it (for example regulators, food manufacturers, food producers, retailers). For example, food scares and scandals can significantly impact the integrity of, and reliance on food labels to communicate honest information . In fact, food scares and scandals can orientate consumers towards attending to labels that carry information about country of origin of food products , meat production practices , and organic produce . In addition, food scares can reduce overall trust in key actors in the system, which limits interest in and adoption of new dietary habits, which are signalled by various types of food labels (for example nutritional labelling, calorific content, eco-labelling) .

Summary - General impact of labels: Taken together, what we can draw from the systematic reviews and meta-analytic studies is that labels carrying information about nutrition, warnings, and the sustainability of food products do not significantly impact consumer choice behaviour in a

meaningful way (for example reducing calorie consumption, increasing healthy eating, increasing sustainable consumption). Conditions under which labels are shown to have a significant positive impact on behaviour are based on studies run under laboratory conditions, and often feature hypothetical choices. Furthermore, methodological issues impact the likelihood of finding reliable positive effects of labels on consumer choice behaviour. These include variability in the types of labels used, and variability in the length of time that the labels are examined to have had an effect on choice behaviour. They are also often absent of any theory explaining the choice of formatting of labels and messages.

In addition to this, of the many practical barriers that exist that prevent labels from potentially influencing consumer choice behaviour the follow are identified: 1) the amount of available time/available attention to process the labels, 2) confusion in processing the labels because they are unclear, 3) limited interest in accepting the message of the label . Also, discussed in the previous section [‘Consumer Shopping Behaviour’ - Frequency/volume of decisions], there are also particularly salient factors in the context of shopping that gain a high premium in consumers’ minds. These are: price, indicators of value for money, and cues to quality. Also discussed are taste and cultural factors which serve as valuable criteria for informing choice. Additional factors that have also been referred to are: economic incentives, novel technologies (for example smart phone usage), and environmental contexts (for example organisational innovations in schools, worksites, and communities that structure and inform the way consumers make food choices outside of food stores) along with attributions of trust in the food system and the various actors associated with it (for example regulators, food manufacturers, retailers).