Edinburgh Napier UNIVERSITY

Doctoral Thesis

An analysis of nudging as a social marketing technique using Front of Pack nutrition labels: A study of women's perceptions of food labels

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This thesis submitted to Edinburgh Napier University, in partial fulfilment of the requirements for the award of Doctor of Philosophy

May 2019

Abstract

Recently, social marketers have adopted the use of 'nudging' as a technique to influence behaviour through subtle tweaks to the environment (Thaler & Sunstein, 2008). Front of Pack (FoP) nutrition labels are an example of a nudge in practice, designed to steer consumers towards healthier food choices. Yet the use of nudging is somewhat controversial, and calls have been made for its practice to be critiqued (Chriss, 2015, 2016; Gigerenzer, 2015; Hastings & Domegan, 2017; Mullane & Sheffrin, 2012; Roberto & Kawachi, 2014). This thesis analyses nudging as a social marketing technique by investigating the perceptions of Scottish female consumers, in terms of how they regard, understand and interpret FoP food labels in real-world contexts. Prior research generally examines perceptions of FoP labels in labs and out of context (Becker et al., 2016; Cecchini & Warin, 2016; Grunert, 2016; Hieke & Harris, 2016). Therefore, this study applied an ethnographic methodology, specifically, observations, 'think-aloud' techniques, and semi-structured interviews. Observations were primarily used to assess what role the context plays in perceptions of FoP labels. Think aloud techniques provided rich insight into the lived experiences of consumers, including what sorts of information was of value to them and what was of less importance. And semi-structured interviews enabled consumers to talk freely about their subjective interpretations and general feelings towards FoP labels. Thematic analysis was then used to code and analyse all three data sets.

In building a picture of how this nudge is perceived, the author was then able to assess if it operates effectively and draw insight for social marketers. Significant contributions to knowledge are presented as it was identified that consumers find these labels impractical and irrelevant, and there is widespread confusion as to their intended meaning. Unlike

previous literature, this thesis considered the context and its role in shaping these perceptions. The implications of these findings were then applied to the field of social marketing and nudging. As a nudge, these labels have limited impact within the obesogenic environment in which they sit. More importantly, this thesis identifies several concerns involved with the use of nudging as a behaviour change technique. It highlights the contradictions between the goals of social marketers and the implications of nudging. As a result, this thesis contributes both practically and theoretically to the field of nutrition labelling, and to the discipline of social marketing.

Key words: Front of Pack food labels, Social Marketing, Nudge Theory, Ethnography

Acknowledgements

First and foremost, I would like to sincerely thank my director of studies Dr Elaine Thomson. From the very beginning Dr Thomson was supportive and encouraging. This thesis would not have been possible without her endless guidance, kind words and confidence in me. Her critical eye is inspiring and something I hope to emulate throughout my academic journey.

Similarly, I would like to sincerely thank Prof. John Ensor for his continuous support and encouragement. His logical thinking forced me to stay grounded and on track. Throughout the PhD process I always felt able to rely on Prof. Ensor for sound advice.

Together, Dr Thomson and Prof. Ensor created an unrivalled supervisory team. They shaped me and my work and helped launch my academic career, for which I will be forever grateful. Thanks to all my colleagues at Edinburgh Napier University for the warmness and guidance they have shown me since I joined.

I would also like to extend my gratitude to all the participants who took time out of their busy lives to take part in my study. I remain struck by the open and generous way in which they allowed me to observe and interview them.

Finally, I would like to thank my friends and family. The PhD cohort within the Business School provided a much-needed network of support and a lasting friendship group. My debate-loving family. My husband Chris.

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"Obesity is not a failure of individual will power, but a failure of political will at the highest level." (2011)

Dr Margaret Chan, Director-General of the World Health Organization,
Opening address at World Conference on Social Determinants of Health
Rio de Janeiro, Brazil

1 Chapter 1: Introduction

1.1 Introduction

Threats to public health such as disease or infections have traditionally been met with swift Government action. Yet obesity is viewed differently. Obesity and overweight are repeatedly referred to as a 'lifestyle choice' (British Medical Association, 2012; Chau et al., 2018), despite the now well-documented evidence for the socio-cultural influences upon diet (Brug et al., 2008; Wilkinson & Marmot, 2003). Conceptualising dietary choices in a narrow manner such as this has resulted in a unique way of not only discussing, but treating this public health issue. Put simply, it's held that since consumers 'choose' to be overweight, they can equally 'choose' not to be. In persistently undermining of the environmental and social causes of obesity, an ideology has flourished which favours personal liberties above all else. Policies that preserve freedom of choice and oppose a 'nanny state', have become the desired course of action, regardless if the latter has been shown to be more effective (Jebb et al., 2013). Consequently, the Government's obesity reduction strategies increasingly involve social marketing and nudge techniques (Herrick, 2007; The Scottish Government, 2017).

Social marketing is the process of using marketing theory and practice to engender behaviour change and bring about social prosperity. Rather than coercing people into behaviour, it seeks to find the best possible way to enable people to *choose* desirable behaviours themselves (NSMC, 2006; Lefebvre, 2011). This approach sits well with the Government's goal of tackling dietary issues whilst maintaining free choice (Shove, 2014). The Government's (2011) white paper 'Call to Action on Obesity' introduced a 'radical new approach' on how to tackle obesity, with an emphasis on personal responsibility and a focus on voluntary participation of industry (British Medical Association, 2012). Traditional styles of governing through restrictions and controls were replaced with information provisions and choice architecture. This shift has had a lasting effect on the measures used today to tackle diet, which consist primarily of "dietary guidelines, food labels, menu labelling, and clinical counselling." (Mozaffarian et al., 2018, p. 1), each squarely aimed at personal responsibility.

Today, the UK continues down this trajectory, blurring the lines between the role of Government and that of marketers, with social marketers playing an ever increasing role (Chriss, 2015; Dibb & Carrigan, 2013; Shove, 2014; Walls et al., 2011). One technique recently adopted by social marketers to aid in the quest to change behaviours is that of nudging. This is the practice of using indirect suggestions or tweaks to the environment in order to influence behaviour (Thaler & Sunstein, 2008), another prized technique favoured by the Government due to its lack of choice-interference (Chriss, 2016; Walls et al., 2011). A Behavioural Insight Team or 'nudge unit' operates today under the current UK Conservative Government with the mantra of 'enabling people to make better choices for themselves'.

This thesis attempts to analyse 'nudging' as a social marketing technique. If these practices are to be readily accepted by Government and routinely used to replace policy,

they must be evaluated and critiqued. Front of Pack (FoP) nutrition labels are an example of a nudge in practice (Cioffi et al., 2015; Roberto & Kawachi, 2014; Scrinis & Parker, 2016; Sunstein, 2014; Velema et al., 2018) designed to help consumers make better consumption choices. Yet significant gaps exist in terms of our understanding of how this nudge is perceived and made sense of. Thus, the goals of this research are twofold, to improve our understanding of perceptions of FoP labels, and to consider these findings in a context where Governments increasingly rely upon social marketing and nudge tools to regulate the behaviour.

Currently, the UK uses one of the most data-heavy FoP label formats employed worldwide (EUFIC, 2018), meaning it contains a relatively large volume of information for consumers to digest. Unlike other countries, the UK has opted for a hybrid label format, combining elements of a traffic light colour coding scheme with a guideline daily amount (GDA) system. With debate ongoing as to which label format is best, academic research attempted to provide some answers in terms of which format is better understood. Yet several critical questions have been left unanswered. Namely that which considers FoP labels in a broader context, values the consumers' perspective, and explores how labels are subjectively perceived.

Existing research tends to focus on how FoP labels are objectively understood (Ducrot et al., 2016; Grunert, 2016; Hodgkins et al., 2011; Kleef & Dagevos, 2011), following the logic that if better understood, consumers will be more likely to use them. Yet human behaviour cannot be neatly explained by cause and effect, it is irrational and complex and often the result of how things are perceived rather than how they are objectively understood (Foxall et al., 1998). Gaps in knowledge remain in terms of how FoP labels are subjectively understood, as in, how they are perceived and made sense of in a subjective manner (Ducrot et al., 2016; Grunert, 2016; Hodgkins et al., 2011; Kleef & Dagevos, 2015). Naturally behaviour is shaped by elements of both objective and

subjective understanding (Fishbein & Ajzen, 1975), and thus both deserve attention. Therefore, this thesis assesses perceptions of FoP labels focusing primarily on the consumers' subjective experiences, an understudied area within food labelling literature (Grunert, 2016).

UK consumers claim to use FoP labels frequently and appreciate their presence (Food Standards Agency, 2008; Grunert, Wills, et al., 2010), yet the latest systematic review of the impact FoP labels have upon consumption, reveals a minimal effect (Crockett et al., 2018; Vasiljevic et al., 2015). An overriding concern in making sense of previous data is the lack of studies conducted within real world contexts. Consistently, studies conducted in laboratory interventions tend to report a stronger effect of FoP labels on consumption, than those conducted in real world contexts (EUFIC, 2018; Grunert, 2016).

This thesis contributes to the field of food labelling literature by uncovering rich insight around how FoP labels are perceived in real-world contexts where consumers are exposed to labels naturally. By positioning the findings within the broader context of behaviour change and policy making, this thesis also contributes to the field of social marketing. Calls have been made for more critique within this field in terms of how it is practiced and the tools it adopts, particularly that of nudging (Pechmann & Slater, 2005; Tadajewski et al., 2011; Tadajewski & Brownlie, 2008; Wymer, 2015). This thesis assesses how FoP labels as a nudge in society are perceived by consumers, and in doing so draws insight for social marketers considering this technique.

The theoretical lens used to guide this endeavour was qualitative in nature, applying an ethnographic methodology. In line with this methodological approach, a unique and specific group of consumers were selected for enquiry (Bryman & Bell, 2015). Scottish female consumers were observed and interviewed in their natural habitat regarding their perceptions and subjective experiences of FoP labels. The findings provide insight into

how FoP labels are perceived by women as they go about their daily lives and how the context influences these perceptions. This thesis underscores the need for more real-world studies. In addition, the findings identify ethical concerns for social marketers adopting a nudge technique. The subsequent sections of this chapter contextualise the research, explaining where it is situated and why is it necessary. Lastly, an outline of the thesis structure is provided.

1.2 Aims and Objectives

This thesis fills several key gaps in the literature. Firstly, there is a need to be more critical of the practice of social marketing, particularly considering the fact that it is being increasingly used by Governments to help tackle public health issues. Being critical does not mean criticising, but instead analysing where improvements could be made, or alternative routes taken (Tadajewski & Brownlie, 2008). One place to start in terms of critiquing social marketing, is its use of nudging. This is a somewhat controversial technique, only recently adopted by some social marketers, which is used to change behaviours (Chriss, 2015, 2016; Gigerenzer, 2015; Hastings & Domegan, 2017; Mullane & Sheffrin, 2012; Roberto & Kawachi, 2014). Thus, the first gap this thesis attempts to fill is to analyse nudging as a tool for social marketers.

To do this, an example of a nudge - front of pack nutrition labels - are assessed in terms of how they are perceived and therein how they are currently operating. Engagement with FoP labels has typically been assessed using in-lab studies, which makes the labels salient and out of context. To better understand engagement with FoP labels, perceptions should be contextualised, they should be examined in real-world environments where FoP labels are found. As Eden (2011) highlights, there is a need to start looking at food labels

in the bigger picture, in context, interwoven with knowledge and surroundings and not as diagrams on paper. Finally, since women and men react differently to health messages, particularly when assessing subjective perceptions which are influenced by gender (Morgan et al., 2016), this study will examine women specifically. As such the aim can be summarised as follows: -

> **Aim:** The purpose of this thesis is to an analyse 'nudging' as a social marketing technique, using Front of Pack (FoP) nutrition labels as an example of a nudge, by investigating the perceptions of Scottish female consumers aged between 30-40 years old, in terms of how they regard, understand and interpret food labels in a real-world context.

To achieve this aim, the following objectives were identified: -

Objectives

1. **To review academic literature concerning social marketing, nudge practices, and consumers' perceptions of front of pack nutrition labels.**

A literature review can be used to identify gaps and structure the goals of the research (Bryman and Bell, 2015). A review of social marketing literature was conducted in order to provide a broad understanding of the discipline, in terms of its theoretical underpinnings and the tools it employs. By having an appreciation for the disciplines' origin and trajectory, it can be better understood why some social marketers have adopted the technique of nudging to achieve behaviour change. This review also assessed why the practice of nudging is controversial for social marketers and identifies the need for critique within social marketing practices.

In addition, literature concerning consumers' perceptions of FoP labels was reviewed. Due to a lack of studies specifically examining *UK* consumers responses to the *UK's* FoP

label format, the scope of literature review was expanded to include studies examining various FoP formats, across Europe. This alone reinforces the need for consumers to have a voice and for studies to explicitly assess the perceptions of UK consumers.

2. **To conduct in-depth, semi-structured interviews as well as real-world observations with Scottish, female consumers, aged 30-40 years old in order to assess their perceptions of front of pack nutrition labels.**

Perceptions are thought of as the way in which something is regarded, understood, or interpreted (Brooks, 2008). Thus, to establish the subjective perceptions that women hold of FoP labels, would require interviewing them in a broad and open fashion. Yet, predominantly quantitative methodology has been used to assess perceptions of nutrition labels (Drichoutis et al., 2008; Grunert, Fernández-Celemín, et al., 2010; Satia et al., 2005; Wahlich et al., 2012), meaning that consumers' perceptions are presupposed from the onset, and lack depth. A gap exists in terms of understanding how consumers perceive FoP labels, and what drives their motivations to use or ignore them. To address this, this thesis avoids a top-down style of enquiry and instead allows consumers to describe their attitudes and opinions of FoP labels and health more broadly using in-depth, semi-structured interviews.

To supplement the interviews, real-world observations are used to gather insight concerning perceptions of FoP labels in-situ. Prior studies tend to examine FoP labels out of context, in laboratory conditions (Crockett et al., 2018; Dean et al., 2015; Grunert & Wills, 2007; Onozaka et al., 2014; Volkova & Ni Mhurchu, 2015; Wills et al., 2009). Conducting research in this was has led to favourable attitudes generally being reported, in terms of how consumers perceive FoP labels (Campos et al., 2011; Grunert, 2016). However, this negates the fact that FoP labels operate in supermarkets, an environment which perpetually promotes consumption of cheap, quick, nutrient-poor foods. This thesis

adopts an ethnographic approach, whereby the context in which behaviour occurs is *as important* as the behaviour itself (O'Reilly & Kiymba, 2015). The objective here is to create a holistic and realistic understanding of how FoP labels are perceived in real-world contexts.

Despite women being responsible for the majority of grocery shopping, food preparation and cooking within home (Food Standards Agency, 2017), very few studies examine women's perceptions of FoP labels in isolation (Wahlich et al., 2012). In addition, of the few studies that do use real-world observations, there is a reliance upon students as a participant sample (Lachat & Tseng, 2013; Miller & Cassady, 2012). The justifications for women as a sample are detailed further in section 4.4.1 *The Sample.*

3. **To apply these perceptions of front of pack labels to the context of nudging, in order to demonstrate if this example nudge operates effectively and draw insight for social marketers.**

Relatively recently, social marketers adopted nudging into their toolkit as an acceptable method to achieve behaviour change and bring about social welfare (NSMC, 2011;Tapp and Spotswood, 2013). This technique advocates that, rather than relying on force or legislation change, behaviour change can be achieved through small changes to the environment which 'nudge' people into making wiser decisions (Thaler and Sunstein, 2008). The notion that social marketers should engage in this form of behaviour change has not gone unchallenged (Chriss, 2015, 2016; Gigerenzer, 2015; Hastings & Domegan, 2017; Mullane & Sheffrin, 2012; Roberto & Kawachi, 2014) and therefore deserves some critique. Using FoP labels as an example, this thesis compares the practice of nudging, alongside the intentions of social marketers to draw theoretical contributions for social marketers employing a nudge technique. This thesis asks if the practice of nudging is in

sync with the intentions of social marketers' by assessing if this nudge operates effectively.

Front of pack nutrition labelling is a form of nudging (Cioffi et al., 2015; Roberto & Kawachi, 2014; Scrinis & Parker, 2016; Sunstein, 2014), designed to facilitate consumer understanding of nutrition information and help people make healthier choices. Therefore, by unpacking consumers' perceptions of FoP labels in terms of how they are regarded, understood, and interpreted, we are also assessing perceptions of a nudge. Thus, we are able to critically investigate if this nudge operates as intended. That is to say, is this nudge perceived and used in the intended way, or are there any issues that arise when a nudge technique is employed?

4. **To draw practical as well as theoretical contributions within the field of nutrition, specifically food labelling, whilst contributing to the field of social marketing, specifically those considering a nudge technique.**

Practical contributions will be drawn for the field of nutrition labelling in the form of adding to our limited understanding of women's perceptions of the UK's front of pack nutrition label. Methodological contributions will be drawn in the form of using real-world observations to unpack perceptions of food labels. These observations involved a unique 'think-aloud' technique where participants where be asked to 'think-aloud' whilst shopping. This enabled the researcher to assess if FoP labels arose naturally in conversation with the participants. It also helped to identify what sorts of information is most relevant to consumers when shopping and importantly, where/if FoP labels fit into this picture. Think aloud techniques allowed the data collection to be natural, spontaneous and comparable to real-world scenarios. By applying this insight to the field of social

marketing, the author was then able to assess the adequacy of nudging as a behaviour change technique.

1.3 Diet in Scotland

Many countries are challenged by an overweight population and the burden of obesity, yet this issue is particularly severe in Scotland. Despite being one of the wealthiest countries in Europe (Khan, 2014), Scotland regularly ranks as one of the most overweight nations (Castle, 2015). Obesity rates are higher in Scotland than in England, Wales or Ireland (Baker, 2015), with two thirds of Scottish adults now overweight or obese (The Scottish Government, 2017). A plethora of alarming statistics illustrate the consequences of this, such as a 30 per cent increase in the number of people in Scotland having feet and leg amputations as a result of obesity-induced diabetes (Turner, 2014). Consuming a poor diet increases the likelihood of developing numerous chronic conditions including diabetes, cancers, high blood pressure and heart disease (WHO, 2004).

In Scotland, the risk of developing a fatal heart disease is significantly higher than in anywhere else in the UK (Thistlewaite, 2015) and a major contributor to heart disease is poor diet (Fitzpatrick et al., 2010). Although this is not a new phenomenon, it has proved extremely difficult to control. Despite all of the publicity around the benefits of consuming fruit and vegetables, the most recent Scottish Health Survey reveals that the average daily consumption of fruit and veg by Scottish adults is at its lowest since 2003 (The Scottish Government, 2017). Making the picture even bleaker, diet in Scotland follows a socioeconomic gradient. Those living in deprived areas are more likely to be obese (The Scottish Government, 2017) and more likely to consume a lower quality diet, consisting of nutrient-poor, energy dense foods (Darmon & Drewnowski, 2008). This is

a persistent and entrenched form of social inequality which despite all efforts, appears to be widening (The Scottish Government, 2017).

Scotland has fostered, what scholars refer to as an 'obesogenic environment' (Simpson et al., 2018). This is the notion that at every possible opportunity from school canteens, to hospitals, transportation methods and even sports centres there are easily available and highly promoted energy dense foods. The sight of these high calorie products at every possible turn only encourages over-consumption (Hawkes & Hawkes, 2008). The marketing budget of the UK's food industry racks up an average of £1bn a year (Boseley, 2014), and it is this promotion of foods high in fats, sugars, salts and saturates specifically, which fuels the obesity epidemic.

1.4 Front of Pack (FoP) Nutrition Labels

A broad range of initiatives have been proposed to improve the nation's diet, one being the introduction of front of pack (FoP) nutrient labels. There are many different formats used globally, however the UK have opted for a hybrid of the Guideline Daily Amount (GDA) label and the Traffic Light (TL) label, as depicted in Figure 1. This label is designed to warn consumers about the nutrient levels of pre-packaged foods (The Scottish Government, 2013b). The GDA information provides the levels of key nutrients (salt, fat, sugar and saturates) per product, and the TLs indicate whether that level of nutrient is high, medium or low using the colours red, amber or green respectively.

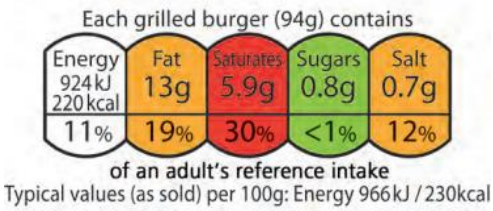


Figure 1. UK Government's Front of Pack Nutrient Label

The Scottish Government claim that these "front of pack labelling markers are easiest to comprehend for all customers, particularly those shown to have the least healthy diets" (2011, p 7). Several studies however, contradict this and instead suggest that FoP labels work best for those who already have a healthy diet, and less well for those on poor diets (Grunert and Wills, 2007; Campos, Doxey, and Hammond, 2011; Castle, 2015). Generally the impact that FoP labels have on diet is mixed but the latest systematic reviews indicate that FoP labels have no significant effect on actual purchasing or consumption habits (Crockett et al., 2018; Vasiljevic et al., 2015).

Until recently, there were a wide range of label formats employed across the UK. The use of monochrome labels, pastel coloured labels, pie charts, bar charts and simple labels (without any figures) led to widespread consumer confusion (Grunert & Wills, 2007; Lobstein et al., 2007). Consequently, existing research tended to focus on deciphering which format was 'best' for consumers to comprehend (Ducrot et al., 2016; Grunert, 2016; Hodgkins et al., 2011; Kleef & Dagevos, 2011), with some authors claiming that prior FoP label studies focussed almost entirely on label comprehension (Neary, 2006; Kleef, Ellen, and Dagevos, 2013). However, simply demonstrating that a label is understood does not mean it will be used. Grunert (2016) summarises that after a decade of research it is well established that comprehension is not the issue. Consumers do understand the majority of label types and can use them to select healthier products but

are not motivated to do so. In order to understand motivations, we must first unpack how they are perceived.

FoP labels are in essence a health message. They aim to inform consumers about the nutrient levels within products with the goal of improving dietary choices. Yet gender influences health seeking behaviours (Morgan et al., 2016) as evidenced by the gender differences found across FoP label research (Campos et al., 2011; Cecchini & Warin, 2016; Miller et al., 2015). Gender can be defined as the "socially constructed roles, behaviours, activities and attributes that a given society considers appropriate for men and women'" (WHO, 2015, p.1). By opening up the scope of nutrition label research to incorporate the context and subjective experiences, the role of gender cannot be ignored. Yet few studies examine gender as a construct in shaping engagement with or perceptions of FoP labels. There are vastly different needs, experiences and outcomes of health messages upon different genders (Morgan et al., 2016). By examining how women perceive FoP labels specifically, we are better able to understand, for example, how the nature of the women's life and her subjective experiences influence the impact of FoP labels as a health campaign. Examining one gender specifically also allows us to assess "how programs, services and policies might be better organized to ameliorate, accommodate or redress the differences between genders" (Morgan et al., 2016, p. 1070). Since there are marked differences between men and women's engagement with FoP labels, this study examines women in isolation.

1.5 Perceptions

This thesis examines perceptions of FoP nutrition labels since they are overlooked in existing food labelling literature (Ducrot et al., 2016; Grunert, 2016; Hodgkins et al.,

2011; Kleef & Dagevos, 2015). Within Psychology, perceptions are defined as "the organization, identification, and interpretation of a sensation in order to form a mental representation" (Schacter, Gilbert, & Wegner, 2011, p. 133). The external world is first registered through the senses – sound, vision, taste, touch and smell pathways, which each result in sensations. These initial sensations are used to register changes in the environment and stimulate 'perception', which is the formation of mental representations in order to further process stimuli. Thus, perception is about how people make sense of the world. This is an extremely subjective process and is affected by one's personal attitudes, expectations, experience, demography and so on. People can experience fundamentally different perceptions from the same stimulus or the same sensory input, making it challenging to research (Schiffman et al., 2014).

From a marketing perspective, the notion that perceptions are distinct from knowledge or understanding is incredibly important. "Consumers pay attention to and interpret stimuli that reinforce and enhance their views of their world, of themselves and of the goods and services they buy" (Foxall, Goldsmith, & Brown, 1998, p.52). People construct mental representations in such a way so as to not conflict with their overarching world view, involving their attitudes, personality and motives. Similar to Veblen's (1899) conspicuous consumption, or the process of consuming in order to display one's status, perceptions are interpretations that align with the consumers' disposition. This means that people not only *consume* to display a desired status but *perceive* in this way too. Although this occurs at an unconscious level, for marketers the consumer's reality is of more importance than objective reality because it is this that drives behaviour (Foxall et al., 1998). Rather than acting on objective facts, consumers act upon their beliefs in terms of how the environment is decoded and assigned meaning.

Therefore, there is clearly a need to unpack how consumers perceive and assign meaning to FoP labels, since it is this that drives behaviour (Foxall et al., 1998). Yet in food-

labelling studies, perception is often overlooked and instead attention is directed towards objective understanding (Ducrot et al., 2016; Grunert, 2016; Kleef & Dagevos, 2015). For example, Grunert et al. (2010) devised a conceptual framework to encapsulate the consumer decision making process in reference to food labelling, as per below, Figure 2. Grunert et al. (2010) claim to explore the areas shaded in grey – perception, understanding, knowledge and inferences. However, when considering perceptions, consumers were simply asked if they had noticed food labels and if so to recall what they had noticed. Steps were then taken to assess understanding. Yet, perceptions involve more than simply seeing and noticing. Research should consider the different ways in which the labels are perceived and what factors influence these perceptions. This is an entirely subjective experience and a complex process and should not be confined to awareness alone.

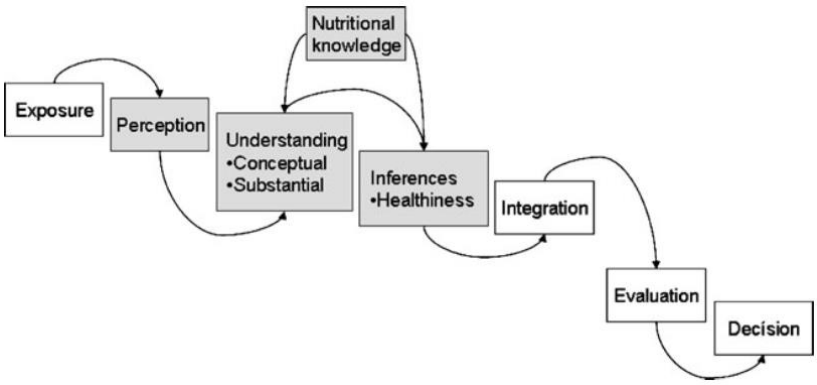


Figure 2. Grunert et al. (2010) Conceptual Framework of Decision Making in Relation to Food Labelling

Similarly, the European Food Safety Authority's (EFSA, 2008) framework of information processing of nutritional information, Figure 3, assigns little weight to that of 'perceptions' within this process. Describing it simply as 'perceptions of health information' (p. 6). Perceptions of health is one aspect that will influence processing of nutritional information, yet there are a whole host of other factors that will play a role in

how nutritional information is processed, for example the environment and the type of individual.

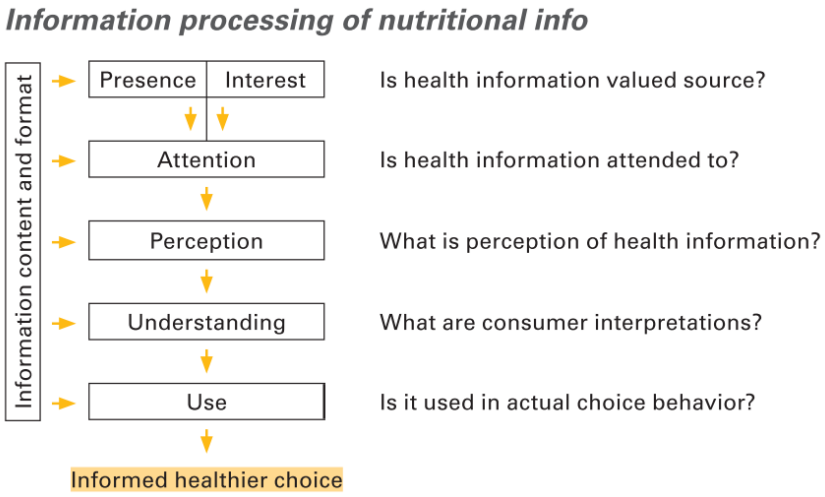


Figure 3. European Food Safety Authority (2008) Information Processing of Nutritional Information

One framework which has tried to incorporate a wider set of elements that will influence perceptions of nutrition labels specifically, was offered by Nayga (1999). Figure 4 suggests that perceptions of nutrition labels are influenced by individual characteristics, lifestyle and attitudes, and product-specific perceptions, for example the importance of price as a factor of influence.

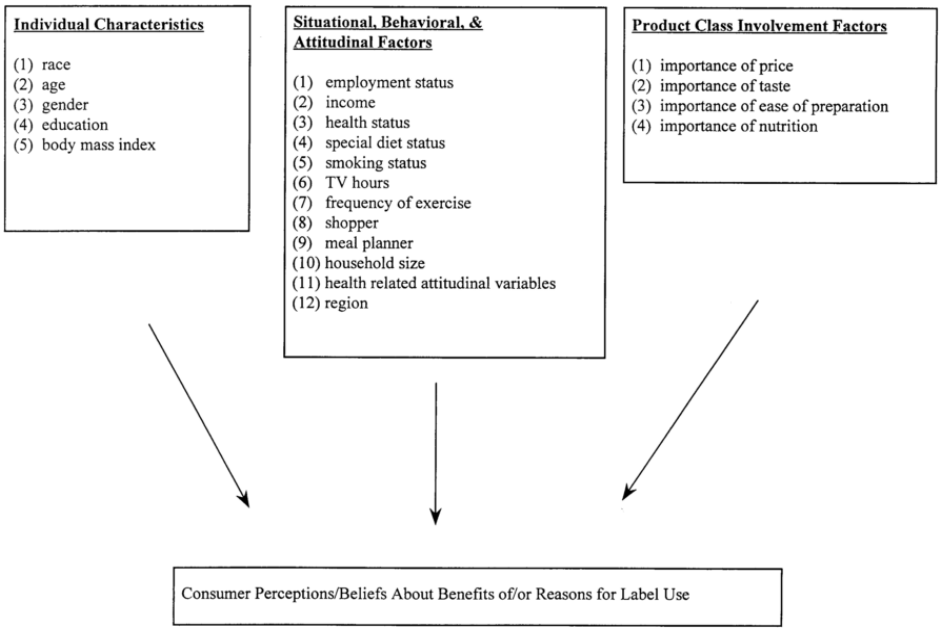


Figure 4. Nayga (1999) Towards an Understanding of Consumers' Perceptions of Food Labels

Nayga's (1999) model above goes some way in encapsulating a broader range of elements that influence perceptions of food labels. However, when considering perceptions, what is being examined is how people make sense of a phenomenon. As such, it is rather difficult to define, and often it can be used to refer to a wide range of variables. Where one author might examine perceptions by looking at preferences of label formats (Möser et al., 2010), another might explore perceptions of the impact FoP labels have on diet (Malam et al., 2009). Most studies within nutrition label literature do not explicitly define what is meant by 'perceptions' when this facet is being examined. Typically, when perceptions are assessed, consumers' broad subjective beliefs towards FoPs are in question (Emrich et al., 2014; Lee & Thompson, 2016; Signal et al., 2008). Emrich et al. (2014) discuss perceptions in terms of *helpfulness, liking, credibility and understanding*. Another study, a systematic review, discusses perceptions in terms of *ease of use, value, liking and trust* (Campos et al., 2011). In other cases, due to the salience of health within

food research, perceptions are explored in terms of judging a product's healthiness – and participants are asked to rate how healthy they 'perceive' certain foods to be using labels (Rayner et al., 2004). Thus, perceptions are defined differently by scholars throughout nutrition labelling literature.

For the purpose of this study, perceptions will be defined as the way in "which something is regarded, understood, or interpreted" (Brooks, 2008, p. 273). Since perceptions are subjective this study intends to refrain from assuming what consumers' perceptions of FoP labels should consist of. In a similar style to Teisl et al. (2002) who conducted an open ended qualitative study in order to 'let consumers explain their reactions' to sustainable labelling, this study examines how consumers naturally respond to FoP labels. Rather than making inferences about behaviour from lab based studies, or having consumers rate their accordance with pre-determined sentences, this study focusses on the consumers' perspective in its entirety and variety (Sirieix et al., 2013). The purpose of this thesis is to provide a detailed account of what consumer's perceptions of FoP labels consist of, and then extrapolate what this might mean for social marketers.

1.6 Social Marketing

Social marketing can be defined as an approach "to influence behaviours that benefit individuals and communities for the greater social good" (French, 2013, p.1). Social marketing applies the same tools and techniques from commercial marketing, to change people's behaviour for the better. It is now a well-established subsect of the marketing discipline, with its own textbooks, journal and conferences each specifically designed to promote the use of social marketing. Social marketers now work in a wide range of disciplines from drug and alcohol misuse to diet and mental wellbeing. A recent UK

Government white paper (2017) 'Action and Ambitions on Diet, Activity, and Healthy Weight' lists social marketing as a key resource in tackling the nation's diet.

Increasingly, governments are turning to social marketers to help tackle public health issues such as obesity (Andreasen, 2002; Herrick, 2007). The Institute of Social Marketing (ISM) who were instrumental in the case against tobacco advertising in the UK, are now fighting a similar battle against the UK food industry (Hastings et al., 2009). Recently, social marketers have adopted the technique of nudging into their toolkit (NSMC, 2011; Tapp & Spotswood, 2013). This technique involves altering behaviour, typically unbeknown to the consumer, through subtle, indirect suggestions in the environment (Thaler & Sunstein, 2008). For example, placing chips at the far end of a canteen rather than having them front and centre, in the hope that that fewer chips are selected by consumers, is an example of a nudge. Nudges act upon consumers without any consent required and are therefore typically cheap and far reaching (Sunstein, 2014).

Although nudging sounds promising, a dichotomy exists between what nudging involves and the founding principles of social marketing. This conflict, recently recognised by scholars (Hastings & Domegan, 2017), will be discussed further in chapter 2 *The Need to Critique Social Marketing.* FoP nutrition labelling is a form of nudging (Cioffi et al., 2015; Roberto & Kawachi, 2014; Scrinis & Parker, 2016; Sunstein, 2014). Thus, by examining FoP labels in terms of subjective perceptions, this thesis also contributes by assessing how a nudge within society is perceived. It critically assesses whether nudging is fit for purpose for social marketers by examining the benefits and pitfalls of employing such a technique.

1.7 Structure of Thesis

Chapter **one** introduces the topic of study, contextualises the research and outlines its aims and objectives. This chapter highlights the necessity of the research.

Chapter **two** is a literature review exploring social marketing as a discipline, and in particular, what led to the adoption of nudge techniques and why critique is needed within this field.

Chapter **three** reviews literature concerning consumer's perceptions of FoP labels; here gaps in nutrition label literature are identified.

Chapter **four** addresses the methodological design of the thesis. This includes justifications for the epistemological and ontological assumptions, as well as explaining why the research methods which were selected. How the data was collected, analysed and asserted quality is also discussed here.

Chapter **five** presents the analysis of empirical data and synthesises the findings. Scottish women's perceptions of FoP labels are presented. A decision was made to combine the findings and discussion chapter so as to ease the flow of reading. Each fining is discussed consecutively in relation to previous work, and new insight is drawn. Areas in need of future research are also presented throughout chapter five.

Chapter **six** summarises the aim, methodological approach and key findings of the thesis. Limitations of the study are also outlined in this chapter. Finally, conclusions and implications of the findings are drawn.

2 Chapter 2: The Need to Critique Social Marketing

The following chapter contributed to a journal article: -

Soraghan, C., Thomson, E. & Ensor, J. (2016) Using food labels to evaluate the practice of nudging in a social marketing context. Social Business. 6(3), 249-265. doi:10.1362/204440816x14811339560893.

2.1 Introduction

Ostensibly social marketing is a harmless endeavour practiced for the greater good. It works primarily to change behaviours, enhance people's lives and bring about prosperity. However, it is precisely these qualities which make it somewhat untouchable. Very few authors criticise social marketing because of its wholesome aims. Yet, unintended consequences of social marketing campaigns exist, and calls are growing to address the lack of critical reflexivity (Bettany & Burton, 2006; Tadajewski & Brownlie, 2008). Moreover, social marketing has recently adopted the controversial practice of nudging into its toolkit. The aim of this chapter is to examine the origins and theoretical underpinnings of social marketing in order to critically review what threats arise through the use of this new practice of nudging.

2.2 Origins and Theoretical Underpinnings of Social Marketing

The concept of social marketing was first introduced by Wiebe in 1951, who posed the question "Why can't you sell brotherhood like you sell soap?" (p. 679). In doing so, Wiebe, (1951) pondered whether good behaviours could be 'sold' in the same sense as selling products, and thus ignited the discussion as to how marketing techniques could be

systematically applied to improve the lives of citizens. In a subsequent paper (Kotler & Zaltman, 1971, p. 3) termed the phrase "social marketing" as a proposed method to influence the acceptability of ideas across a society. Marketing, which had traditionally been reserved for the promotion of consumption, was beginning to be adapted for public health issues (Kotler, and Sidney, Kotler, & Levy, 1969).

During its inception and initial development social marketing was indeed associated with spreading ideas, primarily through health awareness and immunisation programs (Wallack, 2002). A 1967 nationwide contraceptive campaign in India is often cited as one of the earliest uses of social marketing (Wallack, 2002; Hastings, MacFadyen, and Anderson, 2000). By the 1980s social marketing efforts were helping to address international crises such as the spread of HIV and sanitation issues. However, the discipline required a way in which it could be distinguished from existing health workers and thus the focus switched from simple idea-spreading, to measurable behaviour change (Andreasen, 2003). The emphasis on behaviour change remains evident in the latest definition agreed upon by the International Social Marketing Association (ISMA), the European Social Marketing Association (ESMA) and the Australian Association of Social Marketing (AASM): -

> "*Social marketing seeks to develop and integrate marketing concepts with other approaches to influence behaviours that benefit individuals and communities for the greater social good*" (French, 2013, p.1).

Thus behaviour change remains a core concept within social marketing with some prominent figures in the field referring to it as 'the bottom line', or the mandatory element required to claim that social marketing has been applied (Andreasen, 2002; Lefebvre, 2011). Crucially, social marketing has always sought to bring about change

through an understanding of people's lives, motivations and personal requirements. A distinguishing characteristic of social marketing is that it tries to bridge the gulf between what theory tells us, or what research indicates, and what people themselves perceive to be important or necessary for change (Lefebvre, 2009). At its heart then, it is about the consumers' perspective. With its purpose firmly rooted in social change, the scope for its use has become extremely wide reaching. The Scottish Government now have a social marketing hub which aids in efforts to reduce substance misuse, prevent cancers, improve road safety and increase dietary quality, amongst others (ISM, 2017). Yet with this ever-expanding application comes constant adjustments to what is defined as social marketing.

Typically, social marketing is applied in three areas – downstream, midstream or upstream. The expression down, mid, and up-stream stems from a thought experiment in which the best approach to prevent people from drowning in a river is considered (Wallack, 2002). The options are to jump in downstream and save people in the event that they begin to drown, to position a warning placard midstream, or to venture upstream to investigate what causes people to enter the river initially. This analogy is used to assess where social marketing efforts are bets placed. Downstream tactics focus on the "influences on behaviour at an individual level" (Gordon, 2013, p 1542), midstream concerns the immediate environment such as schools and the local community, and upstream refers to the institutions and policies that shape the social system in which people live. For example, smoking levels could be reduced by informing consumers of the health hazards, by banning it at schools or by applying pressure on governments to change legislation. Hence there are various avenues open to social markers, and often all three tiers are targeted. It is widely acknowledged that a combination of action at all levels yields the most effective results (French et al., 2009; Wymer, 2011).

The disciplines' initial theoretical underpinnings were developed by Andreasen (2002) and the NSMC (2006). These six-part benchmark criteria, see Figure 5, involve –

selecting a specific behaviour, researching the influences upon this behaviour, segmenting and targeting a particular goup, offering something in exchange for adopting the new behaviour, using the full marketing mix to promote the adoption of the change, and being weary of competeing forces. This framework has proven to be an effective tool for evaluating the success of social marketing campaigns (Stead, Gordon, Angus, and McDermott, 2007). Carins and Rundle-Thiele's (2013) review showed that those health-related social marketing campaigns which followed Andreasen's (2002) benchmark criteria more closely, perform best.

Figure 5. Social marketing criteria adapted from Andreasen (2002)

As will be discussed in section 2.3 *The Adoption of Nudging*, the introduction of more modern techniques such as nudging, challenges some of the core principles of social marketing proposed in Andreasen's (2002) criteria. Therefore these criteria will be briefly summarised below. What follows is a summary of the principles of social marketing and the elements used to design a campaign.

Behaviour Change

Interventions should target a specific and measurable behaviour, rather than simply promoting awareness, increasing knowledge or altering attitudes. In comparison to blanket messages such as the promotion of consuming five pieces of fruit and vegetables per day, social marketing campaigns operate on specific behaviours, with specific groups of people over a specific period of time (Andreasen, 2002). The new behaviour should be adopted by consumers on a voluntary basis – they should be able to see the value in adopting this behaviour and choose to engage in the process rather than being forced or maipulated in any way.

Research

Formative research is often cited as the single most important step in social marketing (Andreasen, 2006; Carins & Rundle-Thiele, 2013; Hastings, 2007). The aim of conducting formative research is to better understand the target audiences' needs, wants and experiences (Andreasen, 2002). The consumer is viewed as an active part of the social marketing process (Fox & Kotler, 1980) and gaining insight into their behaviour is crucial in shaping a campaign. So rather than a top-down fashion of experts suggesting that citizens behave in one way or another, social marketing comprises of a bottom up approach whereby the campaign is driven by consumer insight. Consequently, psychological theories of behaviour prove valuable in shaping social marketing campaigns. They are used to understand and predict behaviour. Some of the most commonly cited theories within the social marketing literature include the Health Belief Model (Rosenstock et al., 1988), the Self-Efficacy Theory (Bandura, 1977), the Theory of Planned Behaviour (Fishbein & Ajzen, 1975), and the Stages of Change Theory (Prochaska & DiClemente, 1983). Such models are not designed to explain behaviour,

but instead act as a tool to inform our understanding, as well as provide guidance on the influences upon behaviour. However, Lefebvre (2009) points out that the role of the social marketer is not to rely on theory, but to combine science with an audiences' perseptecive.

> *"One principle that distinguishes the best social marketers, is an unrelenting understanding, empathy and advocacy of the perspective of our community that is not slanted by what the theory or research evidence does or does not tell us" (p.47)*

The unique offering social marketing brings in tackling public health issues, which can sometimes be missed by health professionals, is incorporating the consumers' voice. In this sense, social marketing acts as a mediator between how humans 'ought' to behave according to textbook theoretical accounts and how they actually behave.

Segmentation

Segmentation is applied in a similar vein to that of commercial marketing, with the goal being to target homogenous groups who share behvioural characteristics. Rather than targetting anyone who comes into contact with a campaign, it should be instead specifically designed to resonate with a specific group. This not only enhances performance of the campaign but eases the process of measurng the outcomes. Discerning which specific messages will resonate with a specific target group is "the essence of the contribution of social marketing processes to social policy planning" (French & Gordon, 2015, p.75).

Exchange

The concept of 'exchange' proposes that humans are consistently seeking to improve their lot, and the decision of whether to partake in an exchange or not is decided upon by a form of subjective, cost-benefit analysis, similar to that of rational choice theory

(Bagozzi, 1975). The overall worth of adopting a new behaviour or abandoning an existing one is calculated by subtracting the costs, from rewards gained, when performing that behaviour (Hastings, 2007). Thus, this somewhat simple rationale provides social marketers with an extremely significant insight – the target audience must be provided with something they value, in exchange for the adopting the desired behaviour. Essentially, this is the crux of social marketing. The rewards offered can be tangible (e.g. reduced weight) or intangible (e.g. satisfaction) (Gordon et al., 2006). Rothschild (1999) points out that campaigns often ignore this crucial element of exchange, and all too often *assume* what citizens' value, rather than researching what this is.

Marketing Mix

Borden's (1964) 4P model (Product, Price, Place, and Promotion) can be used to operationalise a campaign. Kotler and Zaltman (1971) adapted the 4Ps model from commercial marketing for social marketing. By manipulating each 'P', the idea is to create the optimum strategic 'mix' in order to allow citizens to feel ready and able to change their behaviour. Repeatedly, even within academic literature, social marketing is mistaken for social advertising (Morris and Clarkson, 2009; Dibb, 2014; McAuley, 2014), yet there is more to social marketing than posters and flyers. Raising awareness is essential, but only constitutes one aspect of the process (NSMC, 2011). Hastings (2007) summarises how the marketing mix is applied to aid the design of a social marketing campaigns: -

- *Product* refers to the desired behaviour. Often a number of interwoven behaviours could be targeted to achieve the same goal. For example, a weight-related campaign could persuade consumers to make alternative food choices, change personal habits or prepare meals in advance. Therefore, it is essential that social marketers understand the specific behaviour they wish to change (P. Kotler & Lee, 2008).

- *Price* refers to the cost the target group have to endure in order to adopt a new behaviour or abandon an old one. For example, the price of giving up smoking may be psychological anguish. The price paid is often abstract, for example in choosing to avoid fast food chains young adults may pay the price of ridicule (Stead et al., 2011).

- *Place* refers to situation in which the behaviour change takes place, or the location in which the behaviour change is promoted. Partnerships between campaigns and corporations are fast becoming a modern way of prominently positioning a behaviour change campaign (Sorensen et al., 2013). For example, the ongoing Change4Life campaign works in conjunction with large UK supermarkets to help inform consumers about various health risks of overconsuming certain nutrients. In partnering supermarkets, consumers can download a Change4Life app enabling them to scan bar codes of products to reveal the sugar content.

- *Promotion* refers to the channels in which the new behaviour is promoted. The decision how to promote information can have a huge influence on how citizens view the proposition and how they compare it to competitors' offerings (Hastings, 2007). The distribution channels used by the campaign should correspond to those used by the target group.

The utility of the 4P model (Borden, 1964) within social marketing has come under scrutiny lately. Gordon (2012) asserts that the 4P model is too simplistic to encapsulate all that is required in social marketing and offers a revised marketing mix which includes more modern tools such as relationship building, lobbying, media relations and co-creation. In contrast to Gordon's (2012) proposals, the 4Ps model is description-dense and struggles to fit with the practicalities of today's social marketing. Tapp and Spotswood's (2013) primary objection with the use of the 4Ps model is the fact that it is internally orientated; it encourages social marketers to act *on* consumers rather than being

informed by them. Tapp and Spotswood (2013) suggest the model is good at "retrospectively describing" campaigns rather than aiding in their design (p. 212).

Yet social marketing as a discipline does not shy away from the fact that a majority of its evidence base relies on retrospectively defined campaigns as 'social marketing'. In Stead et al.'s (2007) synthesis of the evidence of social marketing, only six of the 28 campaigns reviewed identified as social marketing. Thereby justifying the existence and effectiveness of the discipline by rebranding what has been done. A minor point perhaps, but it speaks to the idea that the practice should be reflexive and welcoming of critique.

Competition

Competition refers to the factors that compete against the desired behaviour being adopted (Andreasen, 2002). For example, one of the strongest competing factors in adopting a healthy diet is the marketing of unhealthy foods. UK spending on junk food advertising is 30 times what the Government spend on health promotions (O'Dowd, 2017). In recognising and minimising such threats, the design of a campaign is better able to heighten the desirability of the new behaviour (Andreasen, 2002). The consumers' own inertia, self efficacy and willingness to change, can all pose a challenge in a new behaviour being adopted. This is particularly true of social marketing campaigns which tend to be used in situations concerning hard-to-reach behaviours, where the target group are reluctant to change, and where education and awareness haven't succeeded (Rothschild, 1999).

2.3 The Adoption of Nudging

Although social marketing appears to have found its bearings with tried and tested benchmark criteria (Andreasen, 2002), a unified pursuit of social good (Lefebvre, 2011) and a consensus on the definition (French, 2013), some issues continue to test its core principles and change the direction the field is headed. Dominant among these is the concern that social marketing primarily exerts pressure on the individual, yet ignores the environmental influences upon behaviour (French & Gordon, 2015; Hastings & Donovan, 2002; Langford & Panter-Brick, 2013; Wallack, 2002). Scholars have long called for social marketing to move beyond the individual-facing interventions (downstream), and expand into policy development (upstream) (Hastings et al., 2000; Wallack et al., 1993; Wymer, 2011). Yet as the demand to move upstream increases, so does the need up update the traditional toolkit and embrace techniques such as nudging (Tapp and Spotswood, 2013).

Nudge theory originates from behavioural economics. It proposes that psychological insights of human behaviour can help to explain and improve upon peoples' decision making. The concept of nudging was popularised by Thaler and Sunstein's (2008) book, *Nudge,* which propelled the theory into the limelight. Since then, a 'Behavioural Insight Team' or nudge unit, was formed which continues to operate today. Similar units have been established in the US, Denmark, Germany and Belgium (Junghans et al., 2015). The purpose of these teams is to explore ways in which the environment can be changed so as to surreptitiously alter citizens' decisions and thereby behaviour. As well as government agents, nudge theory is also employed by social marketers (French, 2011; NSMC, 2011; Tapp & Spotswood, 2013).

Rather than using force or legislation, nudge theory argues that the decisions made by individuals can be influenced by exploiting psychological insights of human behaviour. Banning junk food in supermarkets would not be considered a nudge, but placing fruit at eyelevel would be. Ensaff et al. (2015) for example, demonstrated that simply by altering

the layout and labelling of food in a secondary school in England, students were more than twice as likely to select healthier food than prior to the intervention. Importantly, the choice of food on offer had not been changed, only the presentation.

Thaler and Sunstein (2008) endorse the use of nudges on the grounds that individuals do not make rational decisions, and this imperfection can be exploited. Simply by changing the way in which options are presented, people can be 'nudged' into making wiser decisions. They emphasize a key characteristic of nudging is that the individuals' freedom of choice is maintained, and it should be easy for individuals to passively accept or ignore the nudge. Consequently, nudge advocates have dubbed the technique 'libertarian paternalism'. Libertarianism is a political philosophy which promotes that only the very minimum government intervention should be exercised, whereas paternalism promotes the restriction of liberties in instances which protect the individuals' well-being. Thus, nudging adopts both of these qualities. With a paper titled 'libertarian paternalism is not an oxymoron' Sunstein and Thaler (2003) assure us that nudging upholds freedom of choice whilst simultaneously permitting government interventions. Their reasoning is based on the belief that the decisions people make "freely" are imperfect, because they are largely influenced by context and framing effects. For example, patients are far more likely to agree to a risky medical operation if told that 90% of patients survive, than when told that 10% of patients die. Nudging changes the way options are presented to people in the environment.

Psychologist Kahneman's (2011) instrumental book 'Thinking, Fast and Slow', offered a new way of understanding human cognition which helped to inform Sunstein and Thaler's (2003) logic. Kahneman (2011) purports two distinct routes for decision making. System 1 which makes unconscious, quick-fire decisions based on emotions, habits, and any salient information at that time, and System 2 which operates much slower, calculating decisions based on potential gains and losses, and considers the overall long term effects.

Thaler and Sunstein (2008) argue that much of our decisions are made under the system 1, which leads to irrational "mindless choosing" (p. 173). For example, people tend to eat more if served larger portions. It is this aspect of decision-making which nudging aims to target, essentially saving us from ourselves and our flawed inertia.

2.4 Why Nudging is Contentious

Nudging and social marketing evidently share some common goals. Notebly the desire to change behaviours and improve social welfare. Yet the use of nudging within social marketing is a contentious issue primarily because it challenges some of social marketing's theoretical underpinnings. The question of whether nudging belongs in the field of social marketing has been raised, albeit in a more practical sense. French and Gordon (2015) reject nudging for two main reasons. Firstly, they propose that nudging is not enough for social marketers and that stronger more targeted action is required. Dibb (2014) agrees that the problems which social marketers face, tend to command more than a nudge to remedy, adding that social marketing is about empowering individuals to make choices of their own accord. Hastings & Domegan (2017) summarise this sentiment by stating that "social marketing risks falling into the trap of copying this infantilising approach when it resorts to… nudging" (p. 255). What is meant here is that social marketers would not benefit from changing behaviours via nudge methods since they reduce the cognitive involvement of the individual. Social marketing is instead about involving the individual in the change process. Secondly, French and Gordon (2015) contend that passively nudging citizens into acting one way or another is not the intention of social marketers, since this does not encourage reflection and learning from the behaviour change process. Instead, the purpose of social marketers is to glean in-depth

insight into specific groups of citizens and use this to target a specific and measurable behaviour. In contrast, nudging is less targeted, and insight from behavioural economics is used to passively act upon consumers without the need for them to learn from the process.

Yet Wymer (2015) endorses the use of nudging as a tool for social marketers, pointing to the benefits of its use in eliminating the option for unhealthy lifestyles. For example, if the desired behavioural outcome was for sunbathers to use a high sun-protection-factor (SPF) cream, one method would be to reduce the number of vendors who sold low SPF creams, thereby 'nudging' sun-bathers to select higher SPF creams, without their knowledge. Similarly, Tapp and Spotswood (2013) do not abolish nudges completely, but instead group them into a cluster of social marketing activity involving persuasion techniques. They position nudging as a secondary concept, whereas consumer insight is deemed a more core concept.

There is an ongoing debate around what constitutes social marketing and what strategies are appropriate for it. However, the National Social Marketing Centre (NSMC, 2011) approves of the use of nudging, stating that: -

> *"Social marketing encompasses the insights of behavioural economics. It is among the methods open to us when planning behavioural programmes and campaigns. It can help us to think about how we can alter the design of the environment, services or materials to make change easier." (p. 17)*

In a similar vein, Dibb (2014) recommends that rather than debating whether nudges are a true representation of social marketing, they should form part of a broad range of tools available to social marketers. Spotswood et al. (2011) request that as nudge techniques become more commonplace, the response should be academic discussion and ethical

concern, rather than immediate rejection due to ties to outdated definitions or longstanding criteria. They conclude that

> *"Sometimes the role of social marketing driven by a popular and political mandate is to work with citizens to help them 'save them from themselves'... Part of this approach is to sometimes work slightly "invisibly" in order to do what is best for both individuals and society" (p. 172).*

This account of social marketing contrasts with that discussed in section 2.2 *Origins & Theoretical Underpinnings.* Here nudging is viewed as an appropriate tool for social marketers. Its use is permitted in situations where there are gains to be made for the social good. In deciding what is good for society, the position of social marketers begins to blend with that of politicians. Indeed Dibb and Carrigan (2013, p. 1393) proclaim "if you are in social marketing you are in politics". Consequently, a growing number of authors (Donovan, 2011; Lefebvre, 2011; Dibb, 2014) call for the purview of social marketing to expand in line with the changing demands of the times, whether that be the incorporation of nudging and involuntary behaviour change if necessary.

Rather than rely on Thaler and Sunstein's (2008) validations for its use, social marketers should be reflexive in their own practices. To disregard the vast volume of insight which behavioural economics provides would be negligent, but to ensure some critical discourse around its offerings is rational and may even enhance the contribution of social marketers in the future. The following section will critically review some issues that have been raised in regards to social marketer's use of nudging.

2.4.1 Eliminates Exchange Aspect

With social marketing "the aim is to ensure the consumer is an active participant in the [behaviour] change process" (French & Gordon, 2015, p 27). Thus, the behaviour change

involves some form of *cognitive engagement*. The notion that a campaign must involve cognitive processing on the part of the consumer, was once considered fundamental to social marketing. “The central element of any influence strategy is creating attractive and motivational exchanges with target audiences” (Andreasen, 2002; p. 7). Thereby implying that a conscious exchange of values should occurr.

In contrast, nudging taps into the unconscious “mindless choosing” aspects of behaviour (Thaler and Sunstein, 2008, p. 173), attempting to passively act upon individuals who may unknowingly concede without any cognitive engagement. Since decisions are so often made in ‘autopilot’ mode, they can be manipulated through slight changes to the environment. Thaler and Sunstein (2008) claim that nudges preserve free choice since consumers can choose to ignore them if they wish. Yet Selinger & Whyte (2011) argue that since nudges work best on consumers who are unaware of their influence, “Thaler and Sunstein oversell the choice-preserving and non-intrusive credentials of nudges” (p. 928). Similarly, Rebonato (2014) argues that consumers are unlikely to scrutinise something which impacts upon their ‘mindless choosing’. This suggests, that if social marketing campaigns were to incorporate nudging, the cognitive engagement and exchange elements which were once so critical to the discipline, may be lost (Soraghan et al., 2016).

2.4.2 Eliminates Insight and Segmentation Aspect

Social marketing was founded upon consumer insight, with campaigns built around the consumers’ perspective, as discussed in section 2.2. For example, if a target group were more concerned with the *cost* of a healthy diet than the health benefits, then campaign would prioritise cost-related messages. Segmentation and targeting are elementary

aspects of marketing. Consumers must be targeted with messages which specifically resonate with them (French & Gordon, 2015).

Yet nudging is founded on something wholly different. Thaler and Sunstein (2008) justify the use of nudges purely on the predictable irrationality, and unconscious biases in human behaviour. Cognitive biases occur due to the automatic and unconscious way in which humans' process information. Nudges are designed to tap into the fallibility of human error. Behavioural economics forms the grounds on which interventions are designed in nudging, rather than the consumer insight as with social marketing (Lefebvre, 2009). Thus, social marketing and nudging seek behaviour change from completely different starting points.

Consumer insight enables social marketers to form multipronged approaches, operating down, mid and up-stream, as discussed in section 2.2. Whereas nudges operate solely at the downstream, individual level. Gigerenzer (2015) argues that designing campaigns around an understanding of human behaviour as 'irrational' and 'flawed' is misleading at best, and at worst destructive. It belittles what is required to remedy social problems. Individuals make poor life choices due to a whole host of reasons, not simply due to unconscious heuristics. This tendency within nudging, to reduce behaviours to their simplest of form in terms of unconscious fallacies, means that the blame for 'bad' behaviours is placed firmly on the individual. As discussed in section 2.2, social marketing is attempting to move beyond the individual facing campaigns and operate more upstream. Therefore, the use of nudges may inhibit this growth, directing attention back towards the individual level (Soraghan et al., 2016).

By adopting nudging and neglecting consumer insight, social marketers may be inclined to ignore the broader social reasons that created certain behaviours in the first place. For example, the corporate world's excessive expenditure on marketing campaigns which

encourage unhealthy lifestyles. Many scholars (Goodwin, 2012; Marteau et al., 2011; Mullane & Sheffrin, 2012) are beginning to query the sensibility of ploughing resources into nudging techniques which are "simultaneously neutralized by marketing strategies" (Junghans et al., 2015, p. 3). Here the argument is that, a small nudge towards selecting fruit over chocolate in the supermarket, will be drowned out by the food industry's disproportionate push towards selecting chocolate in the first place. Social marketers may wish to refrain from using tools which have limited impact upon behaviour change and adopt a narrow focus (Soraghan et al., 2016).

2.4.3 Eliminates Voluntary Choice Aspect

Social marketing traditionally involved persuading individuals to change their behaviour on a *voluntary* basis, as discussed in section 2.2 (Andreasen, 1995). The significance of including 'voluntary' in the paramameters of what constitues social marketing is that it put the onus on the individuals themselves to *choose* to change. Social marketing is not about coercing people into behaviour, rather it seeks to find the best possible way to enable people to chose the desireable behaviour themselves (NSMC, 2006; Lefebvre, 2011). In contrast, nudges by design are inconspicuous. They are not considered to be *chosen* by consumers, but instead to seamlessly act upon them. Nudging eliminates the possibility of consumers voluntarily choosing to engage in the process or campaign. Thus the freedom of choice and voluntary elements of social marketing are lost when nudges are employed (Rebonato, 2014).

This is one of the most commonly disputed issue concerning the use of nudges –do consumers have the ability to 'opt out' of a nudge and is their free will compromised (Whitehead, 2014)? Sunstein (2014) claims that since FoP labels are not mandatory on

the part of manufacturers (manufacturers can choose whether or not to present them), or on the part of consumers (who can choose whether or not to use them), they do uphold freedom of choice. And with free choice comes the option of engaging in the exchange process or not.

If social marketers lose key elements of their practice by adopting nudging, such as the notion that consumers should have free choice to engage with a campaign or not, then consumers also lack any voice in the design of public health promotions. It begs the question as to who gets to decide which behaviours are 'good' and which should be promoted to the masses? Both social marketing and nudging are criticised for assuming superiority within society (Mullane, 2012), yet at least social marketing is conducted in clear view of its audience. Nudges can arise with scant public deliberation or debate, leaving the rationale for promoting one behaviour over another obscure (Baldwin, 2014).

However, others challenge the notion that the behaviour change must be voluntary within social marketing. Donovan and Henley (2003) explain that 'involuntary' behaviour is particularly relevant in upstream cases where the goal is often to change laws and regulations. For example, the social marketing efforts exercised to help abloish smoking in public places in the UK, essentially eliminated the 'voluntary' element of behaviour change for smokers (Spotswood et al., 2011). Therefore debate is ongoing as to whether social marketing efforts must target voluntary behaviours or not, but what is agreed upon is that their efforts are made in the interest of the public (Hastings & Domegan, 2017; NSMC, 2011).

Yet Tadajewski et al. (2011) point out that if social markets were to engage in a reflexive process it might become apparent that their goals are so often tied to governments, corporations and sponsorships, rather than the interest of the public. The use of nudging ties social marketers even close to the interests of these bodies. The public's voice is lost,

and instead broad-brush strategies are rolled out to the masses in the pretence of governments 'doing their bit'. Mullane (2012) found a lack of transparency across nudges which are currently in place in the UK, concluding that it is unclear what evidence is used to form the basis for nudging, how they are operating, and if governments actually use them to improve social welfare or simply to reduce costs.

Recently, French & Gordon (2015) proposed that social marketing campaigns should incorporate the consumer's perspective into the design process, with their wants, needs and values being considered throughout. Thereby enabling, they claim, consumers to have some say over which behaviours are selected and how these behaviours are changed. "At its core strategic social marketing seeks to influence social policy selection and programme delivery to reflect citizens' wants, needs and values" (p. 138). This outlook is directly contrasting to the position of nudges which lack any input from consumers. They are specifically designed to blend into the fabric of society and therefore they attract far less input or opposition from consumers (Chriss, 2015). Nudges act upon human behaviour, without a need to involve opinion. In this sense, nudging is counterproductive to the recent calls made by French & Gordon (2015). Thus, there is a concern that in social marketers adopting the practice of nudging, some of their core values are compromised.

2.4.4 Eliminates Measurability Aspect

With social marketing, the behaviour targeted for change should be measurable (Andreasen, 2002), as discussed in section 2.2. Social marketers aim to minimise inadvertent outcomes by assessing measurable changes (Hastings et al., 2000). Yet there are numerous ways in which consumers will react to a nudge and this is very hard to

predict, consequently the impact nudges have is currently unclear (Mullane & Sheffrin, 2012). Huang and Baum (2012) liken nudging to a game of billiards. After breaking, some balls will move away, and others will move towards the instigator. In the same way, some people will naturally accept the nudge whilst others will repel, making them a risky concept to invest in. As a result, nudges can cause a variety of outcomes, including inadvertent consequences.

For those that naturally 'move away' from the nudge, the consequences may be subtly destructive. Those that are able to act in accordance with the nudge are viewed as good citizens while those that are unable to may feel inadequate (Puhl et al., 2013). This stigmatisation effect could ultimately reinforce the very behaviours that nudging aims to reduce (Budewig et al., 2004), as consumers feel ashamed and incapable and a downward spiral ensues. Moreover, the results of a nudge can be deceptive. Using menu-labelling as an example, Huang and Baum (2012) point out that a nudge campaign to reduced calorie intake in one setting, may not be effective in other settings or on a long term basis, and it is generally unclear what impact nudging has on other facets of life.

Another possible outcome may be that a combination of social marketing and nudging may result in consumers feeling stifled by the Government's insistent messaging on how to behave, and as a result rebel (Mullane & Sheffrin, 2012). Over time consumers may become sensitised or come to reject provisions from the Government. Individuals may "view the governmental project of ameliorating a broad range of social pathologies as manipulative and outright social control" (Chriss, 2015, p. 57). It is possible then, that the use of nudging could unintentionally contribute to consumers' distrust in Government institutions and their messages.

A key aspect of social marketing involves assessing the corrosive effect that commercial marketing has on society, and building evidence to support the introduction of counter

policies (ISM, 2017). For example, the Institute of Social Marketing were instrumental in building a case against the use of junk-food advertising aimed at children, which has subsequently been banned during children's TV programmes (ISM, 2017). Yet the developers of the nudge technique emphasise that nudges can be used to save governments money, by cutting expenditure on health incentives in exchange for simple environmental changes (Thaler & Sunstein, 2008). Thus, on one hand social marketers aim to help to introduce new policies, yet on the other, they aim to eradicate the need for certain policies in exchange for cost-cutting nudges. Legislation change evidently has the strongest impact on behaviour change. Thus by nonchalantly supporting nudges, social marketers may be indirectly reducing the possibility of counter policies being enacted (Soraghan et al., 2016). This section has summarised why the adoption of nudging is a contentious issue for social marketers, the following section will explore potential ways in which this practice could be critiqued.

2.5 Critical Marketing

Evidently there is a need to critique nudging before it is adopted by social marketers. To establish if the contentions outlined in section 2.4 are warranted, a nudge will be examined in practice. In doing so this thesis questions if nudging is fit-for-purpose for social marketers and adopts a critical lens over the practice as a whole. But what might a critique of social marketing look like?

Critical marketing should provide some answers. Critical marketing involves assessing the damage caused by marketing within society and attempts to address the power imbalances related to these. It is "concerned with challenging marketing concepts, ideas and ways of reflection that present themselves as ideologically neutral or that otherwise

have assumed a taken-for-granted status" (Tadajewski et al., 2011. p.83). In marketing, the 'taken-for-granted' ideas involve a prevailing ideology that marketing should be tied to corporate interests. That, for example marketing should continue to push consumption ideals despite its destruction of the planet. In a nutshell, critical marketing is the practice of shining a critical lens over the way marketing is theorised and the effects it has on society.

By this logic, critical *social* marketing (CSM) should involve assessing the damage that *social* marketing causes within society and address its power imbalances too. However, this is not the case. In fact, the literature is almost entirely void of voices concerned over the role that social marketing plays within society. One reason for this may be that the endeavours of social marketers tend to be 'for the greater good'. They set out with the aim of improving society's welfare, thus, their campaigns go unchallenged. The need to be critical of social marketing is less apparent. Whereas with commercial marketing, it is far easier to see the damage being done – excessive marketing of consumerism leads to, for example, waste and pollution. It is as though since social marketing proclaims wholesome aims, it can do no wrong and need not be critiqued.

However, some studies are surfacing which allude to the possibility that social marketing campaigns can have inadvertent effects (Budewig et al., 2004; Gurrieri et al., 2013; Kleef & Dagevos, 2011). In a rare yet illuminating review, Pechmann and Slater (2005) describe eight negative consequences which may arise as a result of social marketing, For example, stimulating interest in an undesirable behaviour, or targeting the wrong audience. Each consequence identified is supported with experimental data. Wymer (2015) describes the unintended consequences of social marketing as "seriously neglected" (p.114), especially when considering that the goal of these campaigns is often to shape social norms. Thus, it should be recognised that good intentions can produce negative outcomes.

This lack of any real CSM being performed adds to the credence that nudging as a new social marketing technique, should be scrutinised. Even the commonly cited definitions used to explain CSM, are void of any critique of social marketing practices. Gordon (2011) who dominates the literature in this area, defines it as: -

> "*critical research from a marketing perspective on the impact commercial marketing has upon society, to build the evidence base, inform upstream efforts such as advocacy, policy and regulation, and inform the development of downstream social marketing interventions*." (p. 89)

This definition suggests that CSM involves only an assessment of the harmful effects that *commercial* marketing creates. This definition is supported by others who define CSM as the gathering and disseminating of negative impacts that *commercial* marketing has on society (Dann, 2010; French et al., 2009).

Why would social marketers rely on a critique of *commercial* marketing rather than being reflective of their own practices? As Gordon's (2011) quote above suggests, one reason is that assessing the impact of commercial marketing, often provides support for certain social marketing ventures, particularly that of upstream campaigns. For example, if the goal was to reduce childhood obesity, one way to achieve this would be to develop legislation against the TV advertising of junk foods targeted towards children. Therefore, social marketers often critiquing commercial marketing by researching and reporting on its damning effects, in order to bolster their cause – in this case reduce childhood obesity. However, there is a need to critique *social* marketing practices too (Langford & Panter-Brick, 2013; Tadajewski, 2010; Tadajewski & Brownlie, 2008).

One way to critique social marketing is to continually challenge or question the prevailing beliefs and norms held within the discipline. To uncover the role of, and potential damage caused by, the status quo. In applying this to social marketing, the status quo is a belief

that social marketing campaigns can do no harm, which leads to power imbalances. Tadajewski (in Varey & Pirson, 2014) points to the power imbalance in terms of the consumers not having a say in whether they are targeted in social marketing campaigns.

> *"social marketing aims to change the behaviour of people acting in ways deemed problematic by a variety of interest groups; not necessarily considered as such by the people targeted for intervention themselves. This raises the spectre of manipulation, especially if the 'consumer' is someone to whom social marketing endeavours are done to, rather than someone extensively consulted during the development of a programme." (p. 44)*

Thus, there is a power imbalance which needs addressing. In addition, the new use of nudging makes this power imbalance even greater since consumers may never know that that they were even targeted. Very few studies have examined how consumers feel about being nudged, with Junghans et al. (2015) claiming to have conducted the first in the UK. Further power imbalances could be caused by only a select few benefiting from a nudge, while others are left behind.

Therefore, it appears that critical social marketing is not yet being practiced adequately. This thesis attempts to add to the limited critique of social marketing endeavours, beginning with that of nudging. Being critical involves reflexivity (Fournier & Grey, 2000) which is lacking within social marketing (Langford & Panter-Brick, 2013; Tadajewski, 2010; Tadajewski & Brownlie, 2008). Therefore, this thesis is reflective upon the practice of nudging as a social marketing technique, questioning if it is in sync with the intentions of the discipline.

2.6 **Summary**

Social marketers face an ever-evolving array of issues. As the discipline develops, the foundations on which it sits are challenged. Recently, the National Social Marketing Centre (NSMC, 2011) approved the use of nudging, deeming it a satisfactory choice of method available. Yet this is a controversial practice and debate has arisen as to whether nudging should be adopted into the social marketing toolkit (Dann, 2010).

Fundamental to the arguments against the use of nudging in a social marketing sphere, is that nudging is by and large, at odds with some of the founding principles on which social marketing is based. The two practices share an overarching goal of improving social welfare yet come at this from very distinct perspectives. For example, social marketing advocates the use of consumer involvement in the behaviour change process, whereas nudges operate at a covert level attracting far less involvement from the consumer. Another line of reasoning in opposition to the use of nudges stems from the lack of clarity in assessing their impact (Huang and Baum, 2012).

It is therefore an opportune time to critique this practice and add to much needed discussion around reflexivity in social marketing (Bettany & Woodruffe-Burton, 2009; Tadajewski, 2010; Varey & Pirson, 2014). Nudging may be advantageous in some circumstances and thus may have a role in helping to tackle certain issues. This thesis attempts to unveil some potential drawbacks involved in using this complex intervention for behaviour change. Some suggest that clinging to the origins of a discipline only serves to promulgate a restrictive view of the field (Dibb & Carrigan, 2013). In contrast, this thesis contends that by continuously examining the origins of social marketing alongside the practices that are used today, reflection is encouraged, as is consideration for the appropriateness of certain tools being used.

This thesis asserts that if nudging is to be so readily admitted by social marketers, it should receive more scrutiny. To justify moving into this realm of covert operations, Spotswood et al. (2011) call for more explicit ethical guidance to be created. Another starting point may be to examine an example of nudging in practice and bring its criticisms to bear. The following section attempts to do just this by investigating an example nudge - that of front of pack nutrition labels. The following section will explore what is known about how this nudge, FoP labels, are currently perceived and interpreted by consumers.

3 Chapter 3: Nutrition Labels

The following chapter contributed to two conference papers: -

Soraghan, C. (2016) 'Implications of nudge marketing: A case study of nutrition labels' presented at the European Social Marketing Conference, Aalto, Finland

Soraghan, C. (2017) 'Applying a strategic social marketing perspective to nutrition label use', presented at Academy of Marketing Conference, Hull

3.1 Introduction

Front of pack (FoP) nutrition labelling is a form of nudging (Cioffi et al., 2015; Roberto & Kawachi, 2014; Scrinis & Parker, 2016; Sunstein, 2014). The author of *Nudge*, in which the concept was born, states that "in government, nudges include… nutrition facts panels on food…which provides a simple guide for healthy eating" (Sunstein, 2014, p.583). FoP labels are designed to 'nudge' consumers into making healthier consumption choices. Therefore a critical literature review was conducted in order to answer 'what is known about how this nudge operates in society today?'. A brief summary of legislation concerning FoPs is first summarised, followed by a review of studies examining how FoP labels perform. Bryman & Bell (2015) suggest outlining the purpose of a literature review before conducting one. Thus, the purpose of this literature review was to

- To build up a picture of how FoP labels perform in the UK
- To critically examine FoP labels as a nudge in society
- To critically examine how FoP labels are perceived
- To summarise and reflect upon what methods are typically used in understating this phenomenon

Originally the aim was to review only those studies conducted using UK-based consumers, however with so few available, the scope was expanded to include European-wide studies. This chapter concludes with a summary of the main findings of the literature review.

3.2 Current Legislation

The impetus towards nutrition labelling grew due to the trend in pre-packaged foods, a change in preparation methods, and the development of multinational products (Cheftel, 2005). The EU's interest in nutrition labels arose due to a drive for a common market place in which food products could be sold easily across countries (Moore, 2001), combined with the need to inform and protect consumers (Cheftel, 2005). Today, the purpose of nutrition labels has moved prominently into a diet/weight-management role. Nutrition labels are viewed as an unobtrusive, far reaching and relatively cheap measure of informing consumers (WHO, 2012). The UK Government's white paper 'Choosing Health', called for nutritional information to be displayed front of pack in prominent consumer vision (Food Standards Agency, 2004). As a result, The Food Standard Agency, which has since been replaced with Food Standard Scotland, developed the first traffic light labelling system in 2004.

Difficulties arose when large retailers such as Sainsbury's and Waitrose began developing their own version of traffic light labels (Grunert and Wills, 2007). Research indicates that the varying formats being used in the market caused consumers to feel confused and misguided (Grunert and Wills, 2007). Exacerbating the issue, the food industry opposed the use of traffic light labels (Lobstein et al., 2007), especially the '*damning red stickers*'

since they discourage consumption (Peretti, 2012). Thus, an alternative FoP label, the Guideline Daily Amount (GDA) was devised by an industry body, the Institute of Grocery Distribution (Rayner et al., 2004). This system displays the percentage that each key nutrient (salt, sugar, saturates and fat) provides of a consumer's recommended daily intake. With retail giants Tesco and Morrisons adopting GDA, the use of both GDA and traffic light labels became widespread across the UK (Benelam, 2013).

Recent changes at a European level have since forced the UK to adopt a single format which has become very prominent within the UK, displayed on almost 80% of all processed foods (EUFIC, 2018). Despite this, the influence of FoPs upon actual consumption chocies remains limited (Crockett et al., 2018; Vasiljevic et al., 2015).

Nutrition labelling in Scotland is governed both by national policy and EU legislation. The European Commission's (2007) white paper 'Strategy on Nutrition, Overweight and Obesity', sparked the need for EU-wide consistent FoP labels (EU, 2011), and subsequently the release of *The Provision of Food Information to Consumers* (FIC) regulation which passed in 2011. The FIC EU regulation number 1169/2011, stipulates the content and style in which all EU members must provide nutritional information on pre-packaged foods (EU, 2011). The aim of the FIC regulation is to ensure the "protection of consumers' health and interests by providing a basis for consumers to make informed choices and safe use of food" (EU, 2011, p.1).

Under this regulation, nutritional information on the back of pack (BoP), as displayed in Figure 6., is mandatory, whereas nutritional content on the front of pack (FoP) it is voluntary. The Scottish Government advocates that all manufacturers should adopt this FoP labelling system (The Scottish Government, 2014).

Energy	**kJ/kcal**
Fat	**g**
of which	
- saturates	**g**
- mono-unsaturates	**g**
- polyunsaturates	**g**
Carbohydrate	**g**
of which	
- sugars	**g**
- polyols	**g**
- starch	**g**
Fibre	**g**
Protein	**g**
Salt	**g**
Vitamins and minerals	**The units specified in point 1 of Part A of Annex XIII**

Figure 6. Mandatory Back of Packet Nutrition Information Grid, source: (UK Gov., 2013)

This tabular BoP information is now mandatory almost worldwide (EUFIC, 2015). However, many consumers find the original BoP format difficult to interpret (Scarborough, Matthews, et al., 2015). With rising obesity rates, policymakers recognised the need to adjust nutrition labelling into a format which consumers would actually use. Thus, the supplementary front of pack information was introduced.

The FoP label is voluntary. It is at the manufacturers' discretion whether to use FoP labels. Presenting this label only becomes mandatory if a health claim is made on the packet, such as '*low fat*' (European Union, 2011). FoP labels must be provided in one of two formats, energy alone or energy plus fat, saturates, sugars and salt. The information may be presented per 100g/ml only; per 100g/ml and per portion; or on a per portion basis only. Additionally, percentage reference intakes (RIs), which represent the maximum recommended nutrient intake, may be provided per 100g/ml and/or per portion.

Where the UK differs from other EU nations is in regards to the controversial use of colour on FoP nutrition labelling. The FIC regulation does permit colour, yet currently only the UK and South Korea have opted to include a colour-coded system known as the

traffic light system (EUFIC, 2015). The UK has opted for a hybrid format combing traffic light coding with GDA information, as depicted in Figure 7. The traffic light coding indicates the levels of key nutrients within products by displaying them as red, amber or green to indicate high, medium or low, respectively.

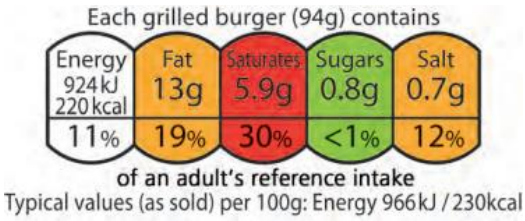


Figure 7. Nutrition Label with UK's traffic light system, source: (The Scottish Government, 2013a)

Although a unified UK FoP label appears to have been decided upon, the GDA-TL system is not without criticisms. It has been said to overly simplify what is required for a healthy diet by focussing on reducing certain negative nutrients (Scarborough, Matthews, et al., 2015). Additionally, a fundamental assumption of FoP labels is that they will facilitate in the decision-making process for consumers, but this rationalises consumption choices into deliberate actions (Lähteenmäki, 2015). Food choices are made with low involvement (Kleef & Dagevos, 2011). Lobstein et al. (2007) estimate that the decision-making process of an average food product occurs within a 4-to-10 second time frame. The following section will review what is known about consumer's use of FoP labels, with particular interest being paid to how they are perceived.

3.3 FoP Labels: A Literature Review

3.3.1 Do FoP Labels Impact Diet?

Assessing if nutrition label use corresponds to changes in purchasing and consumption habits is difficult to measure. Therefore, evidence in this domain is lacking, and results are mixed. Earlier systematic reviews (Cowburn & Stockley, 2005; Grunert & Wills, 2007) conclude that the use of label information can alter overall food purchase behaviour. However, a recent synthesis of the evidence on actual purchasing and consumption found no significant effects of nutritional labelling (Vasiljevic et al., 2015)

However, those who use nutrition labels have been shown to have a higher quality of diet (Pérez-Escamilla & Haldeman, 2002). Previous research has pointed out that the relationship between label use and diet appears to be bi-directional, meaning that those who already have a healthy diet are more likely to use nutrition labels in the first place (Campos et al., 2011), therefore the direction of influence is unclear. On the contrary, Cooke and Papadaki (2014) showed that for young adults in the UK label use did not correlate with dietary quality. Curiously, label use was even found to negatively predict dietary quality, suggesting that those who *are* using nutrition labels are not benefiting from them in the intended way.

Similarly, in a large-scale intervention study where traffic light (TL) labels were introduced on food products at a University canteen, students perceived the presence of the labels as helpful. They claimed to appreciate the TL labels, believed that they were having an effect on their consumption choices, and wished for the TL labelling system to remain in place. Yet the results indicated no significant effect on calories consumed (Seward et al., 2016). This suggests that consumers may assume they know how to use TL labels appropriately, when in fact they do not. This is why subjective understanding is as important to study as objective understanding. A body of work is growing which investigates the impact of introducing FoP labels to University canteens, but so far results are inconsistent (Liu, Hoefkens, & Verbeke, 2015).

There are studies which show that the presence of FoP labels enable consumers to select the healthier option between alternatives (Feunekes et al., 2008; Scarborough, Matthews, et al., 2015), however such studies are conducted in lab based settings and consequently do not represent real-world scenarios. Moreover, just because FoP labels have been shown to allow consumers to select heathier products, does not mean that this ability will transfer into real life habits. Aware of this, Aschemann-Witzel et al. (2013) examined both the ability to use TL labels to select healthier products, *and* motivation to do so. Consumers were asked to first select a product from a range of products which they would choose to buy, then sort this range by healthiness, and then rate the perceived helpfulness of the label in making these choices. TL labels were shown to improve ability to select healthier products, and perceived useful in doing so, but did not influence consumer's choice of product. Again, the use of a quantitative design allowed for no explanations to be drawn out, nor any reasoning provided by consumers. This study is similar to that of Liu et al. (2014) who showed that the presence of calorie labels increased consumers' ability to identify healthier foods, but had no impact on choice. There is a need to uncover why FoP labels do not seem to influence choice, despite consumers being able to use the labels adequately.

In terms of real-world testing the introduction of traffic light labels on food products within a sports centre were shown to increased purchase of healthy, and reduced purchase of unhealthy foods (Olstad et al., 2015). However, naturally, the behaviour of those within sports centres is not representative of the UK population. Similar findings were obtained in a US based hospital where the introduction of a red label on unhealthy foods and a green label on healthy foods resulted in increased sales of healthy foods (Thorndike et al., 2014). However, UK consumers have had more exposure to TL labels and thus the behaviour of US consumers only provides a gauge.

During a 12-month quasi-experiment involving FoP icons being placed on items in vending machines across schools and work places in the UK, there was no effect found on sales of items (Mozaffarian et al., 2012). This may be explainable by the fact that consumers tend to use FoP labels for items they expect to be healthy, and less for indulgent items (EUFIC, 2009), which are generally what is found within vending machines. However, when TL labels were introduced to a range of ready meals and sandwhiches within a popular UK supermarket chain, again there was no effect found on sales of the healthier options (Sacks et al., 2009). Overall this makes for a damning prospect that despite all of the research around FoP labels, their presence may potentially have very little impact upon diet. It also speaks to the need to understand consumers' perceptions in more detail and understand why attitudes appear favourable yet use appears negligible.

3.3.2 Do Consumers Use FoP Labels?

Generally, interest and self-reported use of labels is high in the UK (Campos et al., 2011; Grunert, 2016; Malam et al., 2009). In a questionnaire using a representative sample of UK adults, 66% of respondents claimed to use labels and search for nutritional information (The Food Standard Agency, 2008). However, there are inconsistencies between studies as to what "use" actually refers to (Campos et al., 2011; Hieke & Taylor, 2012). Regardless, UK consumers do appear to at least claim to use nutrition labels often, especially in comparison to other EU countries. Grunert et al., (2010) compared label use across six European countries, and found that UK shoppers were most likely to claim to use nutrition labels, as well as interpret them correctly. Yet Scottish adults are significantly less likely to refer to nutrition labels than adults elsewhere in the UK (Food Standard Agency, 2008).

A major shortcoming of nutrition label research is the reliance on self-reported use, which is likely to inflate results (Cowburn & Stockley, 2005; Grunert & Wills, 2007). Quantitative studies reflecting high levels of label use are contradicted by the low levels found during observational studies (Malam et al., 2009). One reason for this may be that consumers feel compelled to provide socially desirable answers, as in to answer in such a way that will be viewed favourably by the researcher (Fisher & Katz, 1993). Eye tracking studies are starting to accumulate in order to gain a more in depth understanding of label use (Graham et al., 2012), however even these are prone to subject bias – whereby the participant is influenced by the presence of the researcher, and in this case the added distraction of bulky eye-tracking devices.

When assessing consumers' use of labels, previous research often employs a simple question of how often nutrition labels are read (never/sometimes/always) (Blitstein & Evans, 2006; Gorton, 2007; Herpen et al., 2012; Malam et al., 2009; Raspberry et al., 2007). Applying this style of quantitative enquiry into human behaviour is fraught with complications. Label use is a complex human behaviour, and subject to a wide range of influences. It is not clear how or when consumers use labels to make decisions about the healthiness of a product (Scarborough, Matthews, et al., 2015).

Numerous studies have sought to profile determinants of label use. The most frequent nutrition label users are reportedly educated, white women, especially those who are parents (Campos et al., 2011; Grunert & Wills, 2007; Hieke & Taylor, 2012; Mozaffarian et al., 2012) . Least frequent users tend to be male or the overweight or obese (Grunert et al., 2010). Gender appears to be strongly linked to label use with women using labels more frequently than men (Grunert, Wills, et al., 2010; Hoefkens et al., 2011; Stran & Knol, 2013). However it has been suggested that this is a result of women having a higher nutritional knowledge, and when this is accounted for, gender is not a significant indicator of label use (Rodolfo, 2000). Women tend to have a stronger interest in healthy eating

than men (Grunert, Wills, et al., 2010; Lähteenmäki, 2015) which is a predictor for label use (Cooke & Papadaki, 2014; Hess et al., 2011). Several studies indicate that nutrition labels tend to be used more by older individuals than younger adults (Grunert and Wills, 2007; Campos et al., 2011), which could be explained by an increased interest in health with age. Lastly, socioeconomic status is another strong predictor of label use, with people from higher SES groups interpreting nutrition labels more accurately and using labels more frequently than those of lower SES (Hess et al., 2011; Huang et al., 2004; Kim & Kim, 2009; Malam et al., 2009; Sinclair et al., 2013; Todd & Variyam, 2008). Somewhat unsurprisingly, white, middle class, middle aged, women of higher SES tend to use labels most.

Label use within the UK is also predicted by nutrition knowledge and attitudes towards health (Cooke & Papadaki, 2014), by dietary quality (Miller et al., 2015) and by an interest in healthy eating (Grunert, Wills, et al., 2010; Sharf et al., 2012). This helps to build up a picture of who typical users are and what factors have an influence upon label use. However Grunert et al. (2010) stress that numerous studies analyse determinants of label use, but "*leave open the question whether, for example, a lower use of nutrition information… is due to lower nutrition knowledge, lower interest in healthy eating, or other factors*" (p. 177). Meaning that research is needed to drill down into the reasons for these findings. It is apparent who uses them and the characteristics of these people, but now research is needed to explore why this is the case, as well as examine who doesn't use them and how they can be motivated to do so.

3.3.3 Do Consumers Understand FoP Labels?

Using nutrition labels is only worthwhile if they are interpreted correctly. Systematic reviews indicate that comprehension tends to be greatest in young, well educated, females

(Campos, Doxey, & Hammond, 2011; Malam et al., 2009, Raspberry, et al., 2007). Comprehension is significantly linked to prior nutritional knowledge (Campos et al., 2011; Grunert, Wills, et al., 2010; Raspberry et al., 2007), attitudes towards health (Cooke & Papadaki, 2014) and health-related motivations (Hess et al., 2011). People from higher SES have been shown to interpret nutrition labels more accurately than those of lower SES (Grunert et al., 2010; Sinclair et al., 2013). Some studies have shown that comprehension of nutrition labels leads to higher levels of use (Bialkova & Trijp, 2011; Visschers et al., 2010), whereas others have shown that comprehension has little effect on engagement with labels (Grunert, Fernández-Celemín, et al., 2010).

One study which did use the UK's GDA-TL label with UK consumers found that label use was relatively high, and the majority of consumers could understand them and use them to infer the healthiness of a product (Grunert, Wills, et al., 2010). This study used a mixed methods design; however, the interview section was highly structured. Consumers were simply asked whether they had used the labels and to recall nutritional information on products they had purchased. They were not permitted any time to talk spontaneously about their perceptions of labels.

The bulk of previous nutrition label research has focused on comprehension of labels in a bid to decipher which format is 'best' (Ducrot et al., 2016; Grunert, 2016; Hodgkins et al., 2011; Kleef & Dagevos, 2011). This was in-part due to the wide range of labels available across the EU, and the slow pace at which legislation could regulate their use. The focus on comprehension made sense at the time because the race was on to show which labels consumers understood more easily. However, the UK has now decided upon a label format (the GDA-TL label) and so there is a need to assess its effectiveness, rather than continuously compare it to alternatives. Hamlin (2015) summarises this point, explaining that the majority of existing research has been 'developmental' in nature, in comparing various forms of labels. Yet the continuation of developmental research is

futile. The industry has moved into a 'deployment' stage and thus more deployment research is needed – as in assessing the effectiveness of the deployed label format (Hamlin, 2015). The UK is in the midst of deploying a unified GDA-TL system, making the evaluation of this specific system pertinent.

Experimental economists and cognitive scientists now generally agree that traffic light labels are "easier and faster to evaluate and manipulate than GDA" labels (Muller & Prevost, 2015, p.26). Yet comprehension does not necessitate use. Grunert (2016) summarises that after a decade of research it is well established that comprehension of FoP labels is not the issue, consumers do understand the majority of label types and can use them to select healthier products but are not motivated to do so. A gap exists in terms of understanding what drives some consumers to use labels and others to ignore them (Cowburn and Stockley, 2005). In a recent global update, the European Food Information Council identified four key areas in need of further research, one being "How can consumers best be helped to make good use of nutrition labels?" (EUFIC, 2015, p. 9). In order to uncover how consumers could be motivated to use nutrition labels, we must first appreciate how they perceive and make sense of these labels.

3.3.4 Attitudes Towards FoP Labels

The Food Standard Agency conducts annual assessments of UK consumers' attitudes towards food and cooking using a representative sample. Within these reports consumers are also questioned about their perceptions of food labels. The latest report indicates that the majority of UK consumers' find food labels important and over half claimed to 'always' or 'usually' check them (Food Standards Agency, 2008). However, these reports are conducted via a computer-assisted personal interviewing (CAPI) questionnaire, leaving very little room for consumers to explain or develop their answers. For example,

statements used include "it is *difficult to know if a product is healthy from the labelling*" (p. 12), to which 45% of consumer agreed, or "*convenience food is not that bad for you*" to which 25% of consumer agreed. These results provide an overview of attitudes but are unable to demonstrate *why* consumers find labelling difficult to understand, or in what sort of ways the information is used.

Grunert, Wills, & Fernández-Celemín (2010) assessed use and understanding of nutrition information on food labels using observations in three major UK retailers, in-store interviews (n=2019) and take-home questionnaires (n=291). Although this study did not focus on attitudes per se, it does suggest a favourable attitude exists given the high levels of awareness and number of consumers' searching for FoP information. However, the open-ended questions were only directed towards consumers who *had* used the labels, questioning for example what information had been searched for. This limits the scope in terms of our understanding of non-users. Importantly the results indicated that contrary to commonly held assumptions, understanding did not translate into use. While over 70% of consumers correctly inferred the information on the labels, fewer than 30% were using them. This along with other studies (Ducrot et al., 2016; Grunert, 2016; Hodgkins et al., 2011; Kleef & Dagevos, 2011) highlights the need to establish what perceptions of FoP labels consist of and why engagement with labels appears so limited.

The Food Standard Agency (2005) have also conducted focus groups, questioning consumers' attitudes towards food purchasing, food labelling, and beliefs around what being healthy consists of. Yet, besides being dated, the primary objective of this research was to make recommendations on which label design is best for the UK Government to endorse. This resulted in a focus on comparing label formats. There is now a need to understand today's consumers' attitudes towards the chosen GDA-TL label.

Previous research regarding the UK's FoP label often indirectly askes consumers to compare GDA-TL labels with other forms (Food Standards Agency, 2005; Hughes et al., 2008; Leek et al., 2015; Maubach & Hoek, 2010). This may have led to an inflated perceived likability of GDA-TL labels. Consumers may have very different opinions when the labels are considered in isolation. Moreover, it has been shown that label preference is not indicative of label use or comprehension (Kelly et al., 2009; Malam et al., 2009). If retailers are to adhere to the Government's call for a unified GDA-TL label format, then consumers will not need to make comparisons between different label formats in real life shopping environments, therefore more studies concentrating on one label type are required.

Malam, Clegg, Kirwan, & McGinigal's (2009) expansive and robust study assessed attitudes of FoP labels which were on the market at that time, shown in Figure 8. This extract highlights the difference between label formats that were previously available. In depth interviews, accompanied shops, bag audits and surveys were used to assess a range of aspects of FoP labels. The main conclusions drawn were that consumers found the variety of label formats on the market confusing, but overall preferred the use of labels which contained TL colours, text and GDA information all combined.

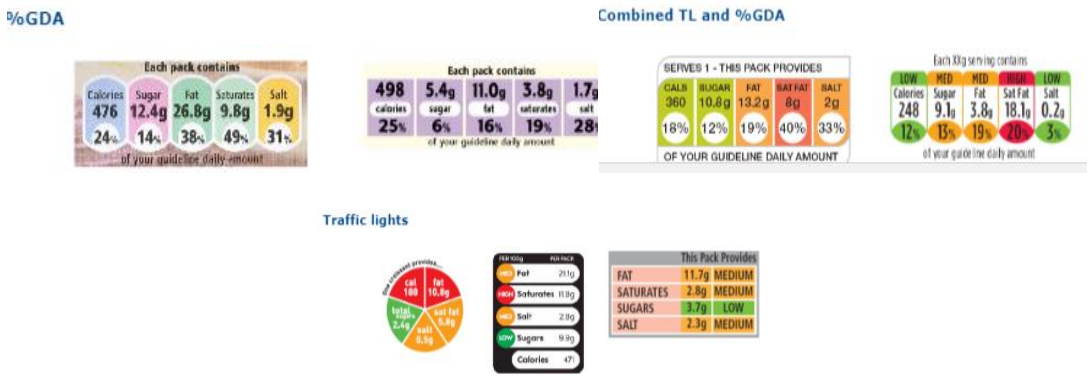


Figure 8. Malam (2009) FoP Formats

Confusion was caused by variances in portion representation or by the image style (if presented as a pie chart or bar chart) or when trying to use a label which had mixed signals –for example high fat but low salt. This provides an insight into how consumers feel towards a number of FoP labels. However, the primary focus of this research was to assess the impact of multiple label formats on the market. Since it was conducted, the UK has attempted to consolidate its label format, therefore research is required to assess if this has been successful in easing the confusion issues.

Realising that consumer confusion regularly appears in studies of consumers' perceptions of FoP labels, Leek, Szmigin, & Baker (2015) set out to unpack what causes the confusion. In one of the few studies which employ the UK's GDA-TL label specifically, semi-structured interviews and 'think aloud' tasks were used to assess how well consumers' could select the healthiest product from a pair of products using FoP labels. Each product carried one of the four FoP labels currently used by UK retailers, as depicted in Figure 9. This study incorporated a quantitative element in assessing how well consumers could correctly select the healthiest product between pairs, as well as qualitative thinking-aloud accounts of consumers' experiences.

Figure 9. Leek, Szmigin, & Baker (2015) FoP Formats

Although the study aimed to assess consumer confusion of FoP labels, it then confined the scope of confusion into the realms of product comparison. Confusion may be caused by a number of elements within a shopping context. Which makes semi-structured, in-

depth interviews necessary for these issues to arise. Nonetheless, this approach did identify some broad themes of confusion – caused by information overload, ambiguity or technical inability to compute the information.

Nuanced interactions of FoP label use were also noted, for example, several participants believed that the percentage sign on the GDA label indicates the percentage of nutrient in that product, despite the fact that the labels explicitly state 'percentage of your guideline daily amount'. Many believed that 'total fat' incorporated saturated fats, despite the two nutrients having a separate section on the label. More research is required to build up a picture of the subjective beliefs that consumers hold when interacting with FoP labels, rather than focusing only on objective facts alone (Draper et al., 2011). Unfortunately very little information about the participants from Leek, Szmigin, & Baker's (2015) was provided, only that the mean age was 31.

Some of the Food Standard Agency's (2005) earlier qualitative research across the UK flagged up consumers generally felt confused by the use of GDA, in terms of what GDA stood for and what is meant by a guideline. Consumers expressed their inability to imagine what 100g of a given product would look like or to determine if a given amount of fat in a product was 'a lot', 'some' or 'not much. Other issues UK consumers have faced when using FoP labels include difficulties in combining portion size information with the information displayed on the FoP label (Wahlich, Gardner, & McGowan, 2012). Wahlich, Gardner, & McGowan (2012) interviewed only highly educated females, and still confusion existed. The paper states that the participants were shown three examples of FoP labels used across UK supermarkets "a pie-chart, a traffic light label, and a front-of-pack guideline daily amount" (p. 205). Yet it is unclear if the TL label was a simple TL label, as depicted under Malam (2009), or if the TL labels included GDA data. Thus, further investigations using a wider spectrum of participants, as well as a focus on the UK's GDA-TL label is warranted.

When perceptions of FoP labels are explored, there tends to be a reliance on Likert scales (Food Standards Agency, 2008; Raspberry et al., 2007; Savoie et al., 2013; Stok et al., 2012). In a large scale online, French study (n=38,763) perceptions of various FoP labels were assessed, as depicted in Figure 10. Consumers were asked to rate their accordance with statements assessing attitude ('*This label influences my judgement*'), liking ('*I would use this label to make purchases*'), attractiveness ('*This label gives me the right level of information'*), cognition ('*This label allows for rapid interpretation*') and nutrition knowledge ('*I don't know anything about nutritional knowledge*') (Méjean et al., 2013). One of the key findings was that label preference was shown to follow a SES gradient, with more simple and symbolic labels being preferred by those of lower SES, a finding which is supported elsewhere (Malam et al., 2009). However, by using Likert scales the reasons behind such preferences can only be assumed.

Figure 10. Mejean, et al., (2013) FoP Formats

Emrich et al. (2014) also employed Likert scales to assess perceptions of four types of FoP labels as illustrated in Figure 11. Likeability, helpfulness, understanding, credibility and influence on purchase intention were assessed using simplistic questions in a similar style to Mejean et al. (2013). In this study the TL label performed well for likeability, aiding consumers' judgement of products healthiness and making comparisons between products. However, consumers in this study were better educated than the national average. In addition, the UK's GDA-TL label was not used. Few studies refer the UK's GDA-TL label specifically, which makes generalising the results problematic.

Figure 11. Emrich et al. (2014) FoP Formats

Numerous issues arise when Likert scales are employed, most notable that the perceptions of consumers are presupposed from the outset. For example, Kim & Kim (2009) assessed perceptions of FoP labels, yet restricted their questioning to aspects such as necessity of labelling (as in did consumers' believe it was necessary) and necessity of colour coding on labels. It is unclear how these questions were decided upon. And, when answering such questions, consumers' attitudes are made one-dimensional – on a scaling system, when in fact attitudes are multi-dimensional and influenced by a number of factors. Moreover, Likert scales also typically fail to explore why consumers don't use FoP labels, and instead focus on those that do (Savoie et al., 2013).

One study which has used consumer-generated knowledge in a bottom up fashion asked consumers to sort a variety of labels in whichever way they chose (Hodgkins et al., 2011). A consumer derived typology of FoP labels was created, it demonstrated that the most common way of sorting FoP labels was by how direct they are in terms of the information provided. This study is useful in demonstrating what attributes of a label are important to consumers. Primarily, simplicity was of most importance, but again the focus was on discerning the 'best' label type, rather than assessing how consumers engage with the particular FoP label that the UK Government has decided upon (Hamlin, 2015).

Trust in label information will result in favorable attitudes towards label use will. Consumers have been shown to be suspicious of who sets the bar – where the colour of a nutrient changes from 'red' to 'amber' or 'green' (Malam, 2009). Beliefs that the manufacturers set the standards, as opposed to Government bodies, may reduce the likelihood of consumers using labels. Yet a comprehensive picture regarding consumers' trust in FoP labels is lacking. In a systematic review of trust in nutrition labelling, Tonkin, et al. (2016) concluded that the majority of studies examine food labels in isolation, out of context and at a distance from the social norms typically found to influence food choices. This makes our understanding of trust in labels unreliable. Moreover, many papers focussed on categorising those who trust labels and those who do not, without fully exploring the causes for this distrust.

Attitudes towards a behaviour are shaped by social pressures to perform, or not to perform, that behaviour. Fishbein & Ajzen (1975) refers to these as subjective norms, which are normative beliefs around how someone believes their peers, family or other in-group members would behave, and the desire to comply to this behaviour. Subjective norms have been shown to have an influence upon diet and food related decisions (Bevelander et al., 2012). Therefore it is likely they would shape attitudes towards food label use too, however this is another area of research which is lacking (Grunert, 2016; Grunert et al., 2011). Kim et al. (2013) and Vijaykumar et al. (2013) demonstrated that subjective norms are significant predictors of food label use, and that the formation of attitudes towards nutrition label use is largely influenced by reference groups including family friends and the media. However, neither of these studies were conducted within the UK, and in both, the subjective norms were pre-supposed in a quantitative questionnaire style. For example, participants were asked to rate their accordance with statements such as "*My family members think I should read nutritional labelling at a*

restaurant before placing my order." (Kim, p. 207). The reasons for the existence of this influence is not explored and would be assessed better through qualitative methods.

3.3.5 Perceptions of Colour in FoP Labels

Consumers display a clear attitudinal preference in terms of likability towards the use of traffic light (TL) colours in labels as opposed to uncoloured or monochrome labels (Food Standards Agency, 2005; Gorton, 2007; Grunert & Wills, 2007). Studies have shown that labels with TL colours generally enable consumers to identify healthier products more accurately than GDA labels without colour (Borgmeier & Westenhoefer, 2009; Kleef et al., 2008; Maubach & Hoek, 2010; Vasiljevic et al., 2015). These findings are now supported by a number of systematic reviews (Campos et al., 2011; Cecchini & Warin, 2016; Hersey et al., 2013). However, reports that TL labels are preferred over GDA labels do not provide any in depth analysis of how TL labels are actually perceived. Consumers may select TL labels in an instance of comparing labels, but when faced with TL labels alone, decide not to use any of the information provided.

Psychological studies illustrate that colours carry meaning (Fetterman et al., 2011), yet few studies have drilled down to understand the meaning that the colour in FoP labels carries for consumers. Critics of the use of TL colours in labels, especially those from the food industry argue that the colour red could be interpreted as 'not allowed' rather than an indication to 'limit intake' (Burrows, 2016). For this reason, several Members of European Parliament are questioning if the UK's GDA-TL label infringes upon freedom of trade legislation (ibid, 2016).

UK consumers have been shown to misinterpret the meaning of the colour red on TL labels. Perceiving red to mean '*I should try not to eat this product*' more often than the

correct meaning '*It is fine to have this product occasionally as a treat*' (Grunert, Wills, et al., 2010). It is important to understand these perceptions because if red signifies a 'do not eat' message, consumers could be missing out on key nutrients required for a balanced diet, such as olive oil which often carries an all-red TL label. Alternatively, a 'do not eat' message may result in consumers feeling guilty and consequently avoiding using TL labels altogether. Research has shown that a feel of guilt dissuades label use (Wahlich et al., 2012). Qualitative studies would help to draw out what consumers believe the colours indicate.

Savoie et al. (2013) demonstrated that consumers prefer the use of TL colours as opposed to other label formats, and the presence of TL colours did result in a lower intention to buy snacks generally. However, there were some unusual findings – the TL label increased intention to buy some unhealthy snacks, and decreased intention to buy some healthy snacks. In this instance TL labels were having a completely unintended impact on consumer behaviour. It appears that the effect of the TL label is not yet well understood. In a choice experiment, 250 students were asked to rate their intention to purchase cereal products which displayed either a GDA or a TL label of varying sizes (Hamlin et al., 2014). Surprisingly, the variable which had the strongest significant effect on intention to buy was not the nutrient quality conveyed by the label, nor the label size, but instead the mere presence of *any* label. This result might explain why the TL increased intention to buy unhealthy snacks in Savoie et al's. (2013) experiment. It might also explain why perceptions of FoP labels typically appear positive, yet their actual influence on consumption habits appear insignificant (Hieke & Wilczynski, 2012).

Perceived healthiness of a product and intention to buy have been found to increase by the mere presence of either a TL or a Smart Choice (green tick) label, as depicted in figure 12 (Andrews et al., 2011). This is worrying since research has shown that products which display a FoP label are not necessarily healthier than those which do not (Emrich et al.,

2015). The authors took this as support for the use of FoP labels since consumers appear to be willing to use them. However, it is dangerous to promote the use of TL labels simply on the basis that consumers will use them, because they may have some unintended consequences. Cooke and Papadaki (2014) found that use of nutrition labels negatively predicted dietary quality, when controlled for nutrition knowledge and attitudes towards health. Therefore, label use does not necessarily equate to a healthier diet and in this instance, was actually linked to a poor quality of diet than non-label users.

Figure 12. Andrews, Burton, & Kees (2011) Traffic Light Label and Smart Choice Tick Label

Labels with a high number of green nutrients have been shown to have a 'halo effect', which increases consumers' positive perceptions of a products' healthiness and can lead to over consumption (Crockett et al., 2014). Similarly, TL labels alone have been shown to have a 'halo effect' in increasing consumers positive perceptions of a product (Drescher et al., 2014; Hamlin et al., 2014). Even in cases where the colour of the nutritional information is misleading, consumers still prefer the use of TL labels over uncoloured labels (Nyilasy et al., 2016). Evidently more research is needed to build a clearer picture of the ways in which consumers use TL labels.

Schuldt (2013) asked consumers to rate the perceived healthiness of a chocolate bar carrying either a green or red TL label, as depicted in figure 13. Results revealed that consumers perceive the chocolate bar with a green nutrient label as healthier than the exact same bar with a red coloured nutrient label, even if the nutrient quantity was

identical. The effect was particularly strong on health-conscious consumers. The authors warn of green labels carrying a health halo and resulting in over consumption of products with green labels. However, it could be argued that the results are encouraging since colours appears to have a strong subconscious influence on consumers' judgements and therefore could be effective in discouraging the consumption of unhealthy products.

Figure 13. Schuldt (2013) Coloured FoP Logos

Using a representative UK sample, Vasiljevic et al. (2015) assessed perceptions and selection of snacks using TL labels with emoticons of smiling or frowning faces. Subjects saw either a chocolate bar or a cereal bar, alongside a TL label with a smile or a frown as depicted in figure 14. Emoticons had an effect on consumers' perceived taste and healthiness of a snack, but contrary to Schuldt's (2013) findings, colour did not influence perceptions. It may be that injunctive norms (norms that signal approval or disproval) such as these emoticons, override any influence of colour. Further research on the influence of colour in FoP labels is required (Vasiljevic et al., 2015)

Figure 14. Vasiljevic et al. (2015) Emoticon FoP Labels

Several studies have reported that consumers appear to transfer their perceptions about TL colours onto other pastel coloured labels, such as the one depicted in Figure 15

(Draper et al., 2011; Leek et al., 2015; Malam et al., 2009). For example, Malam et al. (2009) found that consumers assume that the pale green colour used in Figure 15 depicts a low level of fat, when in fact the colours are nutrient-specific rather than level-of-nutrient specific. In these pastel labels, the nutrient 'fat' will always appear green, and 'sugar' always red, and so on. Rather than an outright ban, retailers have only been asked to avoid using this colouring scheme (The Scottish Government, 2013b), meaning Tesco, who currently control almost 30% of the UK's grocery market (Kantar, 2016) are free to continue displaying it. However, the UK Government strongly advocate for the use of the TL-GDA label.

Figure 15. Tesco's Pastel coloured GDA Label Format

In assessing how UK consumers make sense of TL labels, one online study asked participants to make a series of choices between two labels (Scarborough, Matthews, et al., 2015). As outlined in figure 16, questions were asked about labels which were stripped of all packaging and context. The main findings were that avoiding reds appeared to be of more importance to consumers than selecting greens. These results support earlier findings that consumers use FoP labels with the aim of avoiding adverse nutrients in food products (Drichoutis et al., 2008). They are also supported by Hieke & Wilczynski, (2012) who found German University students to be more concerned with a change from amber to red, than from green to amber.

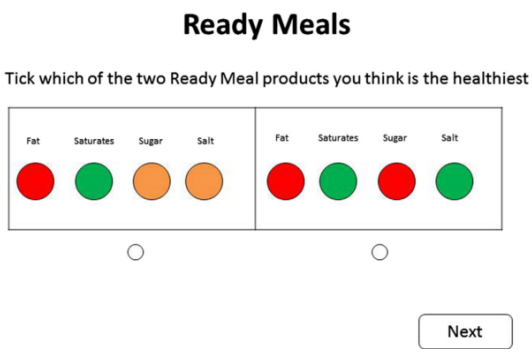


Figure 16. Scarborough et al. (2015) Online TLL Format

If avoiding reds is important, it may be that consumers who view TL labels as warning signs respond more strongly to their presence. The Health Belief Model proposes that behaviour is determined by various beliefs about threats to an individual's well-being (Rosenstock et al., 1988). This model was specifically designed to understand why some people take action against a threat and others do not, and so it is well suited to understanding responses to FoP labels. Research is needed to address if some groups of consumers potentially view red TL labels as symbolic of a threat. If this is the case, TL labels may have a 'boomerang' effect whereby for example, young rebellious consumers are drawn to the red label (Kleef & Dagevos, 2011). Alternatively, if understood as a threat some groups may feel pressured by social norms to act in accordance with their social groups. To adhere to certain behaviours, which may involve consuming a higher volume of red-labelled products (Vasiljevic et al., 2015).

In one study the use of colour reduced perceived healthiness, regardless of which nutrients were coloured red or green (Nyilasy, Lei, Nagpal, & Tan, 2016). Meaning, even if sugar and fat were labelled as green, this product was perceived to be less healthy than those products with colourless labels. These findings contradict those of an earlier study which found that the use of TL labels increases perceived healthiness (Andrews et al., 2011). Although Nyilasy et al. (2016) did not use the UK's GDA-TL label, the results suggest that TL labels may have some unintended consequences, and hence it is important to

assess how consumers perceive the labels rather than focus on comprehension alone. This study used online volunteers suggesting a high level of nutritional interest, which makes the results even more puzzling. Yet it does demonstrate that even health conscious consumers are susceptible to misjudgements using TL labels.

Using focus groups, Talati et al. (2016) found that TL labels are often preferred since consumers can make decisions about a product at a glance. However, few participants discuss how they would actually make sense of a label if it displayed mix of red and greens, rather than majority one colour. In addition, nutrients appeared to have different weights for different consumers. For example a single red in sugar levels might not dissuade a consumer from buying a product, but would put others off. Emrich et al. (2015) showed that consumers tend to generalise, for example if a product is low in sugar consumers may assume it is healthy. It is these sorts of inferences that consumers make when using colours on TL labels which need to be addressed.

Grunert (2016) talks of the understudied influence that colour may have on consumers subconscious processing. There is a dearth of information about how consumers make sense of the colours within the GDA-TL label. Likewise, Scarborough et al. (2015) claims "it remains unclear exactly how shoppers use the information presented in traffic light labels to make decisions about the healthiness of foods" (p. 2). The colours in TL labels may elicit immediate emotional responses which could be drawn out using a think aloud technique. Although this thesis will consider conscious rather than subconscious processing, it will allow participants to expand on their perceptions and opinions around the meaning of colours within labels.

3.3.6 Role of Socioeconomic Status

Of all the determinants of using FoP labels, the role that socioeconomic status (SES) plays and what causes differences to occur remains particularly unclear (Scarborough, et al., 2015). Utilizing FoP labels requires grammatical and numerical skills, as well as an inherent motivation to do so. Therefore, it is likely that FoP labels will elicit varying responses from people of different social backgrounds. Research indicates that use of nutrition labels is linked to SES, with those of higher SES attending to labels more often (Campos et al., 2011; Cowburn & Stockley, 2005) and comprehending the labels more accurately (Sinclair et al., 2013). On the contrary, there is some evidence that FoP labels are actually having a paradoxical effect, with consumers of a higher SES over-consuming when confronted with 'healthy' labels (Crockett et al., 2014). However, it is difficult to compare results broadly due to differences in definitions and data collection methods. Where some studies refer to SES generally, others will use specific measures such as education or income.

It could be assumed that a lower levels of label use is indicative of lower SES groups placing less value on FoP labels. However, despite lower levels of understanding and use, low SES groups were shown to value FoP labels more strongly than people of high SES in a large scale European study (N=7550) using phone interviews (Gregori et al., 2015). Subjects were asked about their opinions on nutritional information in a variety of formats and about their health behaviours. The perceived value of FoP labels was assessed using a willingness-to-pay (WTP) technique. However, asking low SES groups who are typically on low incomes about their WTP is a sensitive issue. Low SES groups may have provided socially desirable answers thus explaining the alleged 'high value' given to FoP labels. The paper concludes that educational material is required to motivate low SES groups to use FoP more accurately. However, large scale diet-targeted education interventions often have little impact on consumption habits (Rodolfo, 2000).

Interventions may be better fashioned by understanding the specific perceptions and attitudes of different population segments.

Different label formats will appeal to different groups of shoppers (Berning et al,. 2010), but traffic light labels appear to enhance usability across the board, most likely because it reduces the cognitive processing required (Hodgkins et al., 2011). However, research is needed to draw out in what ways different consumer groups use the traffic light label (Lachat & Tseng, 2013). One attempt to draw this out by Balcombe, Fraser, & Falco, (2010) used a WTP design to compared how UK consumers respond to a shopping basket with varying prices and TL labels. Consumers displayed a very strong desire to reduce the quantity of red TL labels in their shopping basket, even at a higher cost. However, a lower SES resulted in a lower WTP. Since economical value was the only factor measured, one might assume that lower SES groups are simply more price sensitive. However, this is only an assumption. Lower SES may have alternative reasons for a reduced need to avoid reds. These insights must be drawn from in depth qualitative research.

Several authors point to the issue of lower SES groups having lower numeracy skills and the use of figures in food labels (Gorton, 2007; Hess et al., 2011; Rothman et al., 2006). Percentage signs have been found to be off putting for low income consumers (Pettigrew & Pescud, 2013), therefore the percentages and figures in the UK's GDA-TL might be off putting to some lower SES groups. Simpler forms of FoP labels have been shown to be preferred by lower SES consumers (Cowburn & Stockley, 2005; Hawkes, 2004; Jones & Richardson, 2007; Kleef et al., 2008; Mejean et al., 2013). And simple TL labels have been shown to outperformed both GDA labels and GDA-TL labels in aiding consumers' ability to select the healthiest product (Borgmeier & Westenhoefer, 2009; Van Epps et al., 2016). However the FSA recommends using a combined label format to cater to the

widest group of consumers needs (Hawley et al., 2013). What is not clear is if this decision could be indirectly benefiting only a minority of higher SES groups.

Some studies have found little differences between perceptions of varying SES groups. A randomised controlled study using French subjects (N=11,981) compared the impact of four FoP label styles on the quality of shopping baskets in an online virtual supermarket, Figure 17 (Ducrot et al., 2016). Although the UK's hybrid TL-GDA label was not specifically tested, the 5-colour nutrient label performed strongest suggesting that use of colour on FoP labels is important for consumer comprehension. Regardless of label type, the effect on low income families was small. However, the authors state that generally similar results were found across SES and conclude that FoP are therefore a useful tool for guiding consumers to healthier choices. An explanation for the lack of SES variance may be that nutrition was made salient to subjects. The cohort comprised of subjects from a previous study entitled "Nutri-Net study", moreover a preliminary questionnaire asked subjects' about their nutrition knowledge. Thus, participants may have made a conscious effort to select the healthiest weekly shop possible.

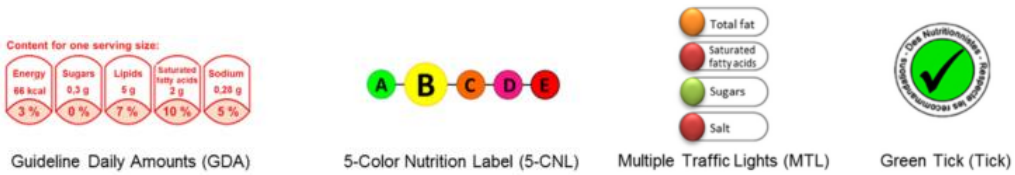


Figure 17. Extract from (Ducrot et al., 2016)

Another study which found no differences between SES groups assessed which nutrients consumers were concerned with. Hoefkens et al. (2011) examined perceived value of nutrients across five EU countries (Belgium, France, Italy, Norway, Poland and Spain) and found that regardless of SES, subjects place more importance on qualifying nutrients (fibre, vitamins, minerals) than disqualifying nutrients (salt, fat, sugar). These results

suggest a limited difference in consumers' perceptions of the nutrients on FoP labels. However, the results could be due to the fact that Likert scales were used to assess perceptions. Subjects were asked to rate their accordance with sentences such as '*It is important that I eat high levels of nutrients*' or '*It is important that I eat low levels of fat'*. In addition, the use of such descriptor words (high/low) may have primed subjects' responses. Combined with the fact that a lower level of disqualifying nutrients is necessary for a healthy diet, and thus these nutrients drew less perceived value from both groups of consumers. These limitations highlight why there is a need to allow consumers to elaborate on their answers.

There is some evidence that nutrition label use is also predicted by income (Campos et al., 2011; Drichoutis et al., 2005; Grunert & Wills, 2007). By adopting the UK's National Statistics Socio-economic Classification (NS-SEC), which ranks social grade by employment from 'Routine' through to 'Managerial or Professional', Grunert et al. (2010) assessed nutrition label use across six EU countries. Consumers in the UK had the highest probability of using labels, and this measure of social grade significantly correlated to nutrition label use in the UK. Low income has been shown to be associated with lower levels of nutrition knowledge (Pérez-Escamilla & Haldeman, 2002) which appears to be a key determinant of nutrition label use (Drichoutis et al., 2005; Miller & Cassady, 2015).

Education also evidently plays a role in label use, with the most recent systematic reviews revealing that greater education levels tend to result in higher levels of self-reported nutrition labels use (Campos et al., 2011; Hieke & Taylor, 2012). Hieke and Taylor (2012) explain that in cases where education levels are high, yet label use is low, this can generally be explained by consumers knowing "by heart" (p. 144) what constitutes healthy food. However, the vast majority of studies referenced within these reviews are conducted in the US, and the measure of 'education' varied. Sinclair et al. (2013) grouped

Canadian participants by education ranging from ‘no formal education’ through to ‘professional education’ and were able to show that nutrition label comprehension mirrors the gradient of education level. These results are in line with a UK study Grunert et al. (2010) which found that the higher the social grade the more likely consumers are to have an interest in healthy eating, which in turn predicts label use. It is somewhat unsurprising that socioeconomic difference appear since almost half of the UK population struggle with percentages (Brian, 2012). Anxiety associated with performing maths is so commonplace that a UK Mathematics Anxiety Scale has been developed (Hunt et al., 2015). It is acknowledged that literacy and numeracy skills will have a role in label use (Rothman et al., 2006) however, it is hoped that the introduction of traffic light labels will alleviate the need for such computations. In depth interviews and think aloud techniques would allow for consumers’ attitudes towards, and perceptions of the combined GDA and TL colouring information to be assessed.

3.3.7 Insight from Observational Studies

Despite supermarkets evidently having such a large influence upon the impact that FoPs can have, few studies were conducted in context. “The major criticism of previous studies on nutrition labels is that most of them are based on consumers’ self-report of usage and or elicitation of consumers’ preferences using hypothetical scenarios” (Onozaka, Melbye, & Hansen, 2014, p. 141). Almost all of what is known about how consumers engage with food labels has been derived from in-lab experiments (Grunert & Wills, 2007). Even with regards to FoP labels specifically, which is a relatively new body of work within nutrition, Dean, et al. (2015) found that again, the majority of studies do not investigate behaviour within a shopping context and of the ones that had, only one had assessed actual purchases. This is a long standing problem with nutrition label research and several calls

have been made for more nutrition label studies to be conducted in real-world contexts (Cecchini & Warin, 2016; Cowburn & Stockley, 2005; Gorton, 2007; Volkova & Ni Mhurchu, 2015; Wills et al., 2009). Therefore, part of the literature review focussed specifically upon those studies which *had* considered the environment and used observational techniques

Studies that did use an observation method repeatedly suggest that nutrition labels are rarely used by consumers, and they do not appear to factor into a consumers' decision-making process regarding food products. This is the case whether observed from afar within a shopping context (Grunert, Fernández-Celemín, et al., 2010) or when asked to think aloud (Enright et al., 2010; Higginson, Kirk, et al., 2002; Malam et al., 2009). In one study, only 25% of consumers noticed that a labelling intervention had been introduced in a supermarket they regularly shop in (Steenhuis et al., 2004). Studies reveal that in fact very little time is dedicated to information searches (Rayner et al., 2001).

Research conducted by Ipsos MORI for the FSA used observations in an attempt to decipher what information consumers' actually search for when shopping, rather than what they say they search for (Enright et al., 2010). A mix of consumers from various backgrounds, from various stages in life (pre-post having children) and from various locations across the UK were observed. To avoid priming, consumers were simply observed shopping and then follow up questions were asked. Results showed that generally there were very low levels of label use, and that price was a major influencing factor in whether labels were referred to, with those on lower incomes referring to labels least. Another major influencing factor was whether the consumers had specific dietary requirements. Reasons for not referring to labels included time pressures, habitual preferences, and an inability to understand the terminology on them.

Similarly, Malam (2009) conducted 100 accompanied shops across the UK using a think aloud technique to explore the decision-making processes used when buying food items. Again, label use was found to be low. This think aloud technique was beneficial in that reasons for not using labels could be explored in context when 'fresh' in consumers' minds. Reasons for not using labels included a lack of understanding, other factors taking precedent such as packaging or price, a feeling of being bombarded with information, or simply not believing that labels were for them.

Other studies which used an observation technique within the UK, aimed to uncover whether people looked at the label of food products before buying them, and if so, for how long (Grunert, 2010). However, this study was very much focussed on objective label use. Six items were selected for investigation including yogurt, ready meals etc., if consumers were seen to be using the labels they were then interviewed about what information had been searched for. This limits the scope of our understanding of engagement with labels, to only those who do use labels, and to a certain number of products. Rather than being product specific, a holistic approach is needed which assesses users as well as non-users in the larger context of food buying.

Calls for more observational studies within supermarkets have been made (Hieke & Harris, 2016) to yield insights on the effects of FoP labels on consumer behaviour. Lachat & Tseng (2013) points out that even within observational studies, the sample are usually obtained via either students or volunteers, who are likely to be a motivated or at least interested in health. Those from lower social groups, who are in need of the information on labels most, are rarely heard from.

3.4 **Key Findings from Literature Review:**

Lack of studies in UK

There is a surprising shortage of studies which specifically assess UK consumers' perceptions of the UK's FoP label format. This is a format which combines traffic light (TL) colour coding and guideline daily amount (GDA) information. Several studies examine the use of colour or the presence of GDA information, yet aside from a limited number (Grunert, Wills, et al., 2010; Leek et al., 2015) few specifically present consumers with the format which is currently in use across the UK. This means, it is unclear how consumers perceive the colours within FoP labels. Although TL labels may be liked by consumers, and show potential, it would be useful to develop a clearer picture of how consumers use the colours, rather than assuming that consumers will interpret what is meant by red, amber or green. In some cases, the use of TL colours appears to enhance intentions to buy, even if the purpose of the TL is to convey a warning sign (Hamlin et al., 2014).

Reliance on lab-based studies

To date, the majority of FoP label studies are conducted in lab-based settings (Becker et al., 2016; Cecchini & Warin, 2016; EUFIC, 2015; Grunert, 2016; Liu et al., 2012), where label interactions are examined in isolation and out of context. They involve participants being asked to relay various nutritional information, or being asked to select the healthiest product from a range of products (Grunert & Wills, 2007). This style of research is efficient in explaining the degree to which consumers understand various types of label formats but is not representative of how labels are interacted with in the real-world.

The issue of relying on lab experiments to understand perceptions of food labels are numerous. Firstly, psychology informs us that consumers are prone to providing socially desirable answers which are not reflective of actual behaviour (Fisher & Katz, 1993). This can be unconscious and unintended and is thus difficult to avoid. There is also a well-documented gap between what consumers claim to do, or intend to do, and how they actually behave in real-world settings (Sheeran & Webb, 2016). The intention-behaviour gap is one reason why more real-world studies are required.

Results from lab-based experiments cannot easily be extrapolated to real life scenarios. Demonstrating that consumers can use certain types of labels, in certain types of ways, does not mean that they will actually do this in real life. As Dean et al. (2015) underscore "just because consumers armed with some basic nutritional information can differentiate between alternative foods under experimental conditions, does not necessarily mean that they can do the same in the real-world" (p.121). Thus, there is a need to understand perceptions within the real world.

The need for studies in context

Prior literature predominantly explored *intended* behaviour rather than actual behaviour. Hieke and Taylor's (2012) critical review of nutrition labelling literature concluded that more observations are required, as well as in-depth interviews to potentially uncover how consumers actually use FoP labels, their attentiveness towards labels and their perceptions of the information provided. By examining the labels in context, it becomes apparent that what is actually being questioned, is consumers' attitudes towards being healthy. Being healthy is a social construct and thus is different for everyone. Reasons for not using labels could be due to a lower interest in being healthy, lower nutrition knowledge or other factors which require exploring (Grunert et al., 2010).

Out of context studies exacerbate priming effects. Studies tend to presented consumers with stimuli and then force them to undertake some form of information processing task (Trijp, 2009). Whereas in the real-world, natural exposure to food labels may result in very little processing. There is a need to look at consumers in context to see how real life shapes their behaviour. Pettigrew and Pescud (2013) point out that both quantitative and qualitative studies tend to make nutrition labels salient in their investigations – thereby possibly over emphasising the role that nutrition labels play in food choices. If consumers are asked about their shopping experiences whilst being questioned about food labels, their answers are likely to be quite different, had food labels not been mentioned.

Reliance on objective comprehension

A majority of studies rely on quantitative methodology and examine consumer comprehension. Previous research often relies on data from population-based surveys adopting a positivist epistemology (Drichoutis et al., 2008; Grunert, Wills, et al., 2010; Satia et al., 2005; Wahlich et al., 2012). This approach is useful in, for example, demonstrating determinants of label use (Campos et al., 2011) or relationships between users and outcomes (Miller et al., 2015). However, these studies do not allow consumers to express their unique and varied attitudes and beliefs regarding FoP labels. They do not account for broader issues such as social norms or perceived control. Nor do they yield a holistic picture in understanding why and how some consumers use labels, and others ignore them. All too often the consumer's perspective is missing from existing studies regarding FoP labels (Ducrot et al., 2016; Grunert, 2016; Hodgkins et al., 2011; Kleef & Dagevos, 2011).

Of the few that did assess perceptions in a qualitative fashion, gaps in knowledge remain. For example, perceptions were examined either by comparing alternative FoP label

formats (Leek et al., 2015), or in relation to very specific information such as preferences of how the data is presented on labels (Kleef et al., 2008). Other studies are dated and do not reflect today's perceptions of the current FoP label format (Food Standards Agency, 2005; Malam et al., 2009).

The need to examine subjective perceptions

There is a lack of data on how consumers perceive labels, their subjective understandings and general attitudes towards labels (Emrich et al., 2014). Especially the perceptions of UK consumers, using the unique UK FoP label format. Quantitative methodologies dominate the literature, and Likert scales are often employed which pre-determine what consumers' attitudes and beliefs will consist of. This is a restrictive design that drastically limits what is possible for consumers to express. Even studies that specifically look at subjective perceptions rather than objective understanding, tend to rely on traditional methods such as focus groups and questionnaires which by their very design assess what consumers intend to do, rather than what they actually do (Enright et al., 2010). Observational studies overcome this to some extent and are useful in examining how labels are used in real-world contexts.

Perceptions are important to examine since consumers to not simply take the information from labelling and act upon it, instead they actively construct and reinterpret the labels, in subjective ways so as to make sense of them. This appreciation for the context and subjectivity is lacking from cause and effect models of labelling (Eden, 2011).

Women and FoP labels

As a result of the lack of qualitative approaches our understandings of how consumers perceive FoP labels is derived from large scale sample sets. We have the overview but not the depth. To enhance our understanding of perceptions of FoP labels, specific groups of consumes should be examined in segments, since they will each have unique requirements. Women, particularly those who are white, well educated, parents and aged between 30-40 tend to use FoP labels most frequently (Campos et al., 2011; Grunert & Wills, 2007; Hieke & Taylor, 2012; Mozaffarian et al., 2012). Yet the majority of studies group women into users and non-users and provide little in the way of drawing out reasons for these differences. Generally, women appear to understand labels, in so far as they can use them to choose the healthiest options from a selection (Campos et al., 2011), yet high level of label-comprehension occurs alongside low levels of use (Cowburn & Stockley, 2005; Grunert, Wills, et al., 2010) and more research is required to address why this is the case. This thesis attempts to draw out these differences and in doing so analyse nudging as a social marketing technique.

Thesis aim: The purpose of this thesis is to an analyse 'nudging' as a social marketing technique, using Front of Pack (FoP) nutrition labels as an example of a nudge, by investigating the perceptions of Scottish female consumers aged between 30-40 years old, in terms of how they regard, understand and interpret food labels in a real-world context.

4 Chapter 4: Methodological Approach

4.1 Introduction

This chapter presents the rationale for the methodological approach adopted. More specifically, reasons for adopting a qualitative strategy are outlined including justifications for the ontological and epistemological positions. A detailed account of how the fieldwork was conducted is then provided, including justifications for the research methods, participant sample, data collection and data analysis. Finally, an explanation as to how the quality of the data is upheld in terms of credibility, transferability, dependability and confirmability is provided. This final section also includes the researcher's reflection upon how the study was conducted and ends with a summary of any ethical concerns identified within the study design.

4.2 Research Paradigm

4.2.1 Ontology

A research paradigm is defined by epistemological, ontological and methodological assumptions (Guba & Lincoln, 1994). Ontology refers to the nature of reality and the way in which it is conceived. There are two broad ontological positions – objectivism and constructionism (Bryman & Bell, 2015). Objectivism asserts that reality is independent of human beliefs and that its existence does not rely upon humans understanding it. Whereas constructionism proposes that reality is a creation of the mind and exits only through socially constructed meanings (Bryman & Bell, 2015). Therefore, the divide between objectivism and constructionism essentially concerns whether social phenomena

have a reality independent of humans. Objectivism has been the dominant position adopted for scientific enquiry, where a singular reality is believed to be attainable.

The ontological assumptions of a constructionist approach lend themselves to the current research because under this approach, reality is believed to be multiple and relative (Hudson & Ozanne, 1988). Constructionists seek to understand the world in which people live, thus there is value placed in conducting research in or about the real world (Creswell, 1998). Contructioists believe that meaning and truths can vary between and within people depending on context and therefore they seek nuanced views rather than a narrow set of categories (Creswell, 1998). The aim of this thesis is to understand the multiple realities that individuals experience when considering health, engaging with food labels and navigating the supermarket. Perceptions of food labels are inextricably linked to perceptions of health, which is a social construct. How people interpret health and act accordingly is influenced by their personal, social and cultural experiences (Bisogni et al., 2012). Constructionists advocate that rather than being independent of humans, social phenomenon is continually constructed and reconstructed by humans. This allows for the exploration of what processes are being enacted to construct reality.

A constructionist approach has been applied in exploring how people interpret healthy eating (Bisogni et al., 2012) and so it would seem fitting to extend this to our understanding of interpretations of food labels. "According to social constructionism the human experience, including perceptions, is not a fixed and predetermined aspect of the person, but is mediated linguistically, culturally and historically" (O'Reilly & Kiymba, 2015, p. 17). This study focuses on how consumers socially construct their perceptions of food labels and factors that influence these.

4.2.2 Epistemology

Epistemology is concerned with the study of knowledge and defining what is acceptable knowledge (Hudson & Ozanne, 1988). Within epistemology there are two broad schools of thought – positivism and interpretivism (O'Reilly & Kiymba, 2015). Positivists advocate that knowledge is arrived at by the gathering of facts that can be tested in an objective manner, free from subjectivity. Whereas interpretivists believe that knowledge is arrived at, and created by, social structures, such as shared meanings and language. Interpretivists reject the notion that knowledge can be gained in a subject free manner, and instead stress that findings are always mere interpretations of the researcher. Depending on what knowledge is believed to be, will impact upon how the social world is studied. Thus, the divide between positivism and interpretivism concerns whether the natural world and the social world should be studied in the same way (Bryman & Bell, 2015). Where positivists would suggest exploring both in exactly the same fashion, interpretivists argue that human beings fundamentally differ from the natural world, because in contrast to atoms, electrons or molecules, the social world has meaning for humans being and this changes how they behave within it.

The epistemological assumptions of an interpretivist position lend themselves to the current research because, as opposed to explaining behaviour, they are orientated towards understanding the meaning behind behaviour (Carter & Little, 2007). Rather than searching for cause and effect, this study will recognise the value of individual perceptions, meanings and interpretations. This thesis focuses on the meaning that nutrition labels have to consumers with an aim of understanding their perceptions. Engaging with nutrition labels, and food choices are subjective and culturally bound (Wright et al., 2001). Therefore, acknowledging the social context is crucial, and in line with an interpretivist stance. Rather than attempting to make generalisations this thesis

seeks to discover the idiosyncratic ways in which food labels are thought of and perceived. Therefore, an interpretive position will be adopted. This philosophical position embodies the belief that knowledge is incomplete and imperfect as opposed to absolute and singular (Maxwell, 2012), thus unique and varying accounts of subjective reality will be accepted as knowledge.

4.2.3 Critical Theory

Critical theory is another philosophical world view comprising of its own ontological and epistemological assumptions. Since this thesis adopts a critical lens over the use of nudging, one might wonder why the research was not grounded in a critical theory paradigm. The reasons for this decision are as follows.

Critical theory is a basis for social enquiry, with the primary purpose being to expose and rectify injustices within society. Early theorists of the Frankfurt School where critical theory was developed (Horkheimer, 1937), espoused that our social reality and therefore our struggles, are in fact socially created through our submissiveness to ideological structures (Tadajewski & Brownlie, 2008). Their purpose then, was to unpack the relationships between social structures and expose how these formed and perpetuated certain ideologies. The aim of critical theory is "to liberate human beings from the circumstances that enslave them" (Horkheimer, 1982, p. 244), by challenging taken-for-granted views and exposing the ideological functions that these create.

Thus, critical theory assumes that a group of people need to be emancipated. This was not assumed in the current research. It was not assumed that nudges, or indeed FoP labels, are causing social injustices. Rather what is questioned was how these perform in society and how they are perceived by consumers. Critical theory is not practiced simply to

generate knowledge for knowledge sake, it is used to reveal the existence of social structures which constrain us (Guba & Lincoln, 1994).

Where qualitative research might question '*what do consumer's perceptions of FoP labels consist of',* a critical theory perspective would ask '*what social constraints or ideologies have caused these perceptions to form*'. In examining ideologies and social contains, critical theory typically adopts a historical perspective (Guba & Lincoln, 1994). It attempts to examine social structures within society and explain them on account of their historical formations. This was not a focus of the current research. This thesis does not aim to account for consumer's perceptions of FoP labels or how FoP labels operate in terms of their historical position within society.

Therefore, critical theory was rejected and instead a constructionist, interpretivist approach was adopted were selected. This paradigm will frame the entire study, from what methods are selected, to how the data is interpreted. Under such a paradigm, human interpretations are at the centre of the knowledge created. Understandings can emerge from reflections on experiences, rather than simply experiences alone. This perspective allows for the 'how' and 'why' questions to be answered in research, which is exactly what academics have called for in the field of FoP label research (Grunert, et al., 2010; Hieke & Harris, 2016). Knowledge is thought of as subjective and socially constructed (O'Reilly & Kiymba, 2015). Consequently, research is conducted in a flexible manner, where new knowledge gained can guide the direction of the study. It was crucial to select research methods which adhered to these principles in order to allow the participants to guide the discussion about their subjective experiences. The selected research methods will be discussed below.

4.3 Research Methods

4.3.1 Research Design

The purpose of this research was to examine perceptions of FoP food labels for a group of Scottish female consumers. Although this pursuit may appear rather basic or straightforward, it is recognised as a building block of qualitative research. Kelly (2009) provides an overview, Figure 18, of the various forms of qualitative research and their associated analytical approaches. This thesis is recognised as generic research, with the primary aim of identifying dominant themes. In the case of this thesis, dominant themes amongst perceptions of FoP labels.

TABLE 1 *Possible data analysis strategies for studying asthma management*

	Research questions	Data	Analytic approach
Generic qualitative research	How do patients describe asthma management?	Interviews	Identify content based on readings of a number of data transcripts Develop a coding frame Code transcripts Identify key themes
Grounded theory	How do patients with asthma view the relationship between lay and professional understandings of asthma?	Observation and interviews	Identify research questions Conceptual ordering Theory development
Discourse analysis—macro	What are the discourses that underpin and constitute current approaches to asthma management in primary care policy and guidelines?	Asthma policy and guidelines used in primary care	Identify research questions Description and interpretation of discourses in the data
Discourse analysis—micro	How do patients and doctors communicate about asthma management?	Primary care consultations	Description and interpretation of the sequential nature of talk between doctors and patients Identify research questions

Figure 18. Kelly (2009) Types of Qualitative Research

4.3.2 Ethnography

This research is interested in how a nudge is used in society, specifically that of FoP labels. Thus, subjective interpretations are of interest. Qualitative research attempts to understand the social world by understanding how people interpret it. It seeks to

"understand how people perceive, feel and experience the social world and aims to achieve an in-depth understanding of individuals' behaviour" (O'Reilly & Kiymba, 2015, p. 11). Under an interpretivist approach to understanding social reality, emphasis is placed on the lived experience of human beings, and therefore a qualitative research strategy is in fitting with the goals of this research. Since the 1970s qualitative research methods have proved invaluable in assessing the success of health promotion programmes (Steckler, 1989). Therefore, qualitative methods will be applied to assess the performance of FoP labels, in terms of how they are perceived by consumers.

There are four key traditions of qualitative research –naturalism, ethnomethodology, emotionalism, and postmodernism (Bryman & Bell, 2015). The key difference between these divisions concerns 'what and how' things are studied (Gubrium & Holstein, 1997). Where naturalism aims to show how things appear in the real world, simply put "as they are" (Bryman & Bell, 2015, p. 403), ethnomethodology incorporates talk and interactions and thus is more appropriate for this thesis where interpretations are important. Emotionalism argues that emotions form the basis for understanding meaning and thus directs more attention to this facet. Lastly, postmodernism posits that the researcher's own notes and observations are yet another representation of the truth, and these too require decoding and interpreting (Gubrium & Holstein, 1997).

From these four strands of qualitative research, ethnomethodology is the most in fitting with the aims of the thesis. Ethnomethodology attempts to explore how the social order is created through language and interactions within a naturalistic context. Since the primary purpose of this research is to explore consumers' perceptions of food labels within a natural, real-world context ethnomethodology is selected, more specifically, an ethnographic method. Under this method "the researcher abandons the idea of absolute objectivity or scientific neutrality and attempts to merge him/herself into the culture being studied" (Ellen, 1984, p. 77). Thus, the researcher aims to immerse herself in the culture

of the participants, constructing reality with and through the subject's normal flow of events. In doing so, the context in which the behaviour sits is not only valued but also used to map out meaning (Bryman & Bell, 2015).

4.3.3 Observations

Within the ethnography paradigm, three research methods were selected in order to address theresearch objectives – observations, think aloud techniques and interviews. The literature review revealed the need for more studies to explore engagement with FoP labels in a real-world context (Hieke & Harris, 2016). Therefore observations were selected as a research method so as to allow the research to be conducted in context. Observations can be employed in both quantitative and qualitative research. When used in the former, the observation tends to be highly structured and typically involves a precise measurment of some sort. In contrast observations within qualitative research are far more unstructured. Predetermined categories are avoided, and instead actions are noted as they unfold. This open-ended style allows for concepts to emegrge from the data at a later stage (Punch, 2005).

In line with the aims of the research, observations enabled behaviour to be understood in a holistic sense. The research set out with the aim of establishing how consumers perceive FoP labels in real-world contexts. In terms of how involved the researcher becomes whilst observing, we followed Gans (1968) 'middle ground' approach which allows for *some* interaction with the participant in the form of questions while their behaviour is being observed.

Observations can be conducted overtly or covertly (Bryman & Bell, 2015). Covert observations have some advantages – namely that consumers are less likely to change

their behaviour due to the precence of a researcher. However, overt observations were chosen for two main reasons. Firstly, as a priciple of ethical integrity it was believed that consumers' should be given the opportunity to provide informed consent to be observed whilst shopping. Secondly, overt observations allowed for note taking to be carried out, which has been shown to be difficult to do under a covert strategy. Fieldnotes were taken during each observation. Lofland & Lofland (1995) suggest jotting notes of phrases or quotes during observations which can be developed later, as opposed to mental notes which may be forgotten, or complete fieldnotes which may be out-with time constraints. The specifics of what was observed are discussed in section 4.4 *Data Collection.*

By using observations, we attend to the cultural context of behaviour, looking beyond simply what is occurring, to what meanings these occurrences have. When analysing observations "it is not only the behaviour, or the situation itself which is of interest, but the meaning of that behaviour as seen by the people we are studying" (Punch, 2005, p. 182). To capture these, some of the context-specific elements of the observation were then further questioned during the interview process. For example, if a field note remarked 'slow decision making between two brands of pasta sauce' then this could be discussed further during the interview process.

Validity is garnered from observations because of the fact that the practice of observing provides the researcher with an intuitive understanding of the culture in which the behaviour has taken place (Bernard, 2013). This means that not only has the behaviour been observed but the meaning of that behaviour, and so the claims being made about the cultural impacts upon the behaviour can be made with some confidence.

4.3.4 Think Aloud

Think aloud techniques have been shown to be relatively unobtrusive to a consumer's natural thought process, allowing for a deep understanding of the behaviour being observed (Lofland & Lofland, 1995). Therefore, they were used to support the fieldnotes taken during the observations. Whilst shopping, consumers were asked to 'think aloud' where key decisions were being made, as has been done in previous research (Leek et al., 2015; Malam et al., 2009). In deciding if the comments consumers made whilst shopping were relevant, anything pertaining to food labelling, choosing between products, aspects of the shop that influenced their judgement, shop preferences or personal health were recorded via fieldnotes. Very personal issues for example, what was for dinner the previous night or general food preferences were not recorded.

One of the benefits in using observation and 'think aloud' methods was that it allowed for spontaneous consumer inferences to be analysed. As Van Kleef & Dagevos (2011) point out, food labelling research needs to uncover "what are the spontaneous consumer inferences that may impact perceptions" (p. 17). This was the sort of data this research method is able to expose.

As a research method, think aloud techniues have been used elsewhere to assess FoP label use (Enright et al., 2010; Higginson, Rayner, et al., 2002; Leek et al., 2015; Malam et al., 2009; Pollard et al., 2002). However, where this research differs from others is in how the technique was applied. Consumers were not primed as to what was of note during the the think aloud sections whilst shopping. This allowed for their more natural and broader perceptions to come to the fore. Think aloud techniques were used again duing the interviews – when asking consumer's to 'make sense' of FoP labels upon packets. This is discussed further in section *4.4 Data Collection.*

4.3.5 Interviews

To supplement the observations semi-structured interviews were conducted. Under this research method, the researcher has a general guide as to what questions should be asked and what topics covered but is permitted freedom to ask differently to each participant and change the course of the discussion depending on the answers provided by the participants. This method appeared to fit with the goal of uncovering consumers' perceptions and helped in not being restrictive in terms of pre-determining what these perceptions are. As the literature highlighted – it remains unclear how consumers perceive and make sense of FoP labels and thus the goal was to let these aspects arise naturally from the dialogue, a method also employed by Coveney (2005) to examine trust in food labels.

Since this study was exploratory in nature, it was decided that having a strict and structured interview format would not be in fitting. The interview questions, outlined in Section 4.4.4 *Conducting Interviews*, and provided in the appendix, were derived from research gaps in the literature. Essentially, these questions consisted of asking women about their perceptions of their own health, of their diet, of the shopping environment, of their use of food labels, how they feel when engaging with food labels, and their perceptions of nudges more broadly. Since the term 'nudge' is less well known by the layman, the term was not explicitly stated during the interviews (Junghans et al., 2015).

Interviews have been shown to be well suited in gaining a holistic picture of human behaviour (Berry, 1999). Open-ended questions were formulated to probe interviewees about their consumption choices, health, food purchasing, perceptions of nutrition labels and attitudes towards FoP labels in terms of a nudge. The goal was to identify how consumers perceive FoP labels in real-world contexts, and to demonstrate if this example nudge operates effectively in order to draw insight for social marketers.

In examining consumers' subjective experiences and views on FoP labels, we also examine their lay knowledge in regard to food labelling. Lay knowledge refers to the way in which people interpret their own experiences, what inferences they make and how meaning is assigned to their health (Williams, 2013). It does not originate from theory or research but instead arises as a result of local discourse, age, or gender (McTavish, 2015). Popay et al. (1998) and Coveney (2005) emphasise the need to explore lay knowledge as a facet of health. Analysing lay knowledge has revealed disparities in how people of different social classes discuss food choices and health with their children (Coveney, 2005). Existing nutrition literature lacks a consideration for the role of lay knowledge in how FoP labels are perceived and use. Therefore, this study will take note of any beliefs which appear to be stratified by social group, or any inferences that consumers make when using labels which appear commonplace.

Within food label literature, interviews have been shown to gain a more in-depth understanding of consumers' attitudes and practices, than is revealed when using experimental designs (Rimpeekool et al., 2015). Thus, a combination of observations, think aloud sessions and in-depth interviews will together seek rich and novel insight around perceptions of FoP label use.

4.3.6 Limitations of Selected Research Methods

The limitations of the methodological approach adopted for this thesis centre around the broader framework of operating within a qualitative paradigm. The main limitation of qualitative work is that the findings are not generally generalisable. Since smaller samples are often used, and statistically significant relationships are not sought, the findings cannot be extended to the wider population. In defence of the qualitative paradigm, the

purpose is not to create generalisations but instead to provide detailed descriptions which are often lacking from studies operating within a positivist paradigm (Kelly, 2009). Rich insight of a smaller sample is sought rather than statistically significant relationships. The benefit in seeking these outcomes over the latter is that they can help to explain behaviour without the need to infer from data sets.

Some argue that rather than endlessly comparing positivist and interpretivist paradigms, a new set of benchmark criteria is required on which to base the validity of qualitative research. Guba & Lincoln (1989) propose judging the value of qualitative research on aspects of credibility, transferability, dependability and confirmability, these will be discussed further in section 4.6 *Data Quality*.

Some scholars argue that qualitative work is not replicable because of the central role that the researcher plays in interpreting the data and the participants' meaning more broadly. However, in the current study, under an interpretivist ethnographic approach, the researcher's role in constructing and interpreting the knowledge is recognised. Knowledge is generated in a context dependent, idiographic manner (Maxwell, 2012). The interviewee's experiences will be the focus of the research and meaning will be derived by analysing the language used by participants (Bryman and Bell, 2015).

However, interviews are criticised for being subjective. Not only does the researcher design and oversee the interview process, but they are then responsible for interpreting the results. Interviews can be seen as inherently subjective in enabling the researcher to select the best fitting material. However, in defence of interviews, the same could be said about quantitative research methods. Although less blatant, within quantitative research there is a need to design and interpret the results too. O'Reilly & Kiymba (2015) point out that at least with quantitative work there is typically the weight of statistics to back up claims made, whereas with qualitative work, claims are made based on a much-limited

volume of data, which can lead to "overgeneralisations and inappropriate use of theory terminology" (p. 83). Again, the purpose of intent should be clearly outlined from the early stages of a research project in order to overcome some of these issues.

Selecting observations as a research method also carries some concern. Again central to the arguments against using observations as a research method is that it relies heavily upon the researcher's subjective interpretation of what is occurring (Seale, 1999). To overcome this issue, this thesis employed not simply observations, but think aloud techniques as well as semi structured interviews. This allowed for the data to be triangulated (Bryman & Bell, 2015). Moreover, as has been outlined, qualitative work embraces the subjectivity of the researcher and their interpretations, particularly within a constructionist paradigm. Another concern with this research method is that the presence of the researcher may influence or impact upon the behaviour in question. To overcome this issue, the participants were not aware of the purpose of the observation and thus could not adjust their behaviour accordingly. The decision to proceed with this research design is discussed further under section 4.6.5 *Ethics.*

Lastly, 'think aloud' techniques have also been criticised for being influenced by the presence of the researcher. The participant only says aloud the socially desirable aspects of their thinking. However, a review of studies using this technique concluded that if the right parameters are put in place, "think-aloud research methods have a sound theoretical basis and provide a valid source of data about participant thinking" (Charters, 2003, p. 68). Parameters include for example, ensuring the same think aloud instructions were given to each participant and refraining from passing judgement or comment until the task was completed (as was done in this study). Think aloud techniques have been shown to be relatively unobtrusive to consumers natural thought process, allowing for a deep understanding of the behaviour being observed (Lofland & Lofland, 1995). Limitations

of the thesis as a whole will be discussed following the data collection, in section 6.4 *Limitations of Thesis*.

4.4 Data Collection

4.4.1 Identifying the Sample

A total of 26 Scottish women, aged between 30-40 years old were recruited to take part in the study from community groups across Edinburgh. As is typically the case with qualitative research (Bryman & Bell, 2015), a smaller number of participants allows for a more in-depth analysis of their unique experiences as opposed to using large data sets. The aim is not to make generalisations, but to garner insight into specific research questions. The aim of this research was not to make claims about how the general public perceive FoP labels, but instead to garner in-depth insight into how some Scottish women perceive them and how they operate as a nudge in this case.

There are a number of reasons why women were selected specifically. Firstly, the prolonged exclusion of a women's perspective in understanding health issues resulted in a doctrine that proposes that health initiatives will impact men and women equally (Roosmalen & Loppie, 1999). They don't. Research suggests that women not only react differently to health messages (Keller and Lehmann, 2008; MHF, 2009) and process information differently from men (Darley & Smith, 1995), but that they also generally view their health differently (Roosmalen and Loppie, 1999). Therefore, women's health issues should be tackled at least in part, through the viewpoint of women themselves. Thus, to understand how FoP labels are perceived, there is a need to examine women's perceptions specifically.

Women in the UK remain the predominant grocery shoppers and are responsible for the majority of food preparations and cooking at home (Food Standards Agency, 2017), yet women in Scotland consume one of the worst diets across Europe (Bawden, 2017). Moreover, studies have shown that use of FoP labels is relatively low across all groups, yet women aged between 30-40 have been shown to use FoP labels more than any other subsect of the population (Grunert, Wills, et al., 2010; Hoefkens et al., 2011; Stran & Knol, 2013). Therefore, it was reasoned that this group would be best able to provide insight into perceptions of labels for both users and non-users. This group are most likely to be exposed to FoPs and therefore believed to hold an array of beliefs and attitudes towards them which need uncovering. Moreover, it moves away from the overreliance on students as a sample population (Lachat & Tseng, 2013; Miller & Cassady, 2012)

A purposive sampling technique was adopted, specifically aiming to recruit Scottish women, aged between 30-40, of varying social backgrounds, who were willing to be observed whilst shopping. Others have purposely sought out specific social groups for the purpose of seeking diversity between responses (Eden, 2011). With this technique the researcher does not aim to produce a representative sample by selecting participants at random (Bryman & Bell, 2015). Instead, a non-probability sample is purposively selected, and participants are questioned specifically so as to address the research questions. In this research, one of the key drivers in terms of selecting participants was that the research would take place in a real-world context, i.e. during an everyday shopping experience where consumers would be naturally exposed to FoP labels.

The research was conducted in Scotland for a number of reasons. Scotland has higher levels of obesity than in England, Wales or Northern Ireland (Baker, 2015), and in Scotland, women are more likely to be overweight than men (Simpson et al., 2018; The Scottish Government, 2017). Scottish adults are significantly less likely to refer to nutrition labels than adults elsewhere in the UK (Food Standard Agency, 2008). The

consequences of Scotland's poor diet are manifested in the nation's high risk of heart disease (Thistlethwaite, 2015) and low life expectancy (Hamilton, 1996; Department of Health, 2013). The need for country-specific FoP label studies has been identified because of the variance in attitudes that exists (Emrich et al., 2014). In addition, in contrast to studies which employ national data sets, a regional specific sample such as this one, can better exemplify actual perceptions and helps to discern incongruences found in large data sets (Govindasamy & Italia, 1999). Thus, the purpose was to examine perceptions of those in Edinburgh specifically.

Although drawing from a feminist perspective in the regard of looking at women specifically, this thesis does not adopt a feminism methodology. Under a feminist perspective women and gender should be the focus of the analysis (Cook & Fonow, 1986), this is not the case with the current research. Instead, the focus is centred more at a practical level of how FoP labels are perceived in terms of how they are subjectively made sense of, as well as and how they operate as a nudge within society. Although gender plays a role in this analysis, it is no the core focus. Moreover, feminist research tends to be conducted for the purpose of social change (Bryman & Bell, 2015). This thesis did not set out with a social injustice that required rectifying. Although some women may struggle to interpret FoP labels in the UK, this thesis does not suggest that this is a result of oppression or that this condition could not extend to men.

Some values of a feminist perspective are shared by this thesis though. Both seek to provide women with a voice in a generally patriarchal society. And both take issue with the reliance upon quantitative methodologies to understand the social world, which essentially strips phenomena of its context and thereby diminishes the role of key constructs in human experiences, and in the experiences of women. Yet for the purpose of framing this research, it should be classed as research that attends to women, rather than a feminist piece of research (Cook & Fonow, 1986).

4.4.2 Gathering Participants

A pilot study was first conducted on two women who were recruited via a convenience sampling technique (Bryman & Bell, 2015). This phase ensured that the observations were manageable and that the questions in the interview section would generate rich responses. However, each of these women were from high social groups, and this study aimed to hear from women from a variety of socio-economic backgrounds. Previous literature had indicated that socio-economic status plays a role in how FoP labels are perceived, therefore there was a need to ensure participants from a spread of social backgrounds were recruited. To do this, community groups located in a range of social-grade areas were approached. The social grade of the area in which the community groups were located, was identified using the 2011 Census data published by National Records of Scotland (General Register Office for Scotland, 2001) as outlined below in Figure 19.

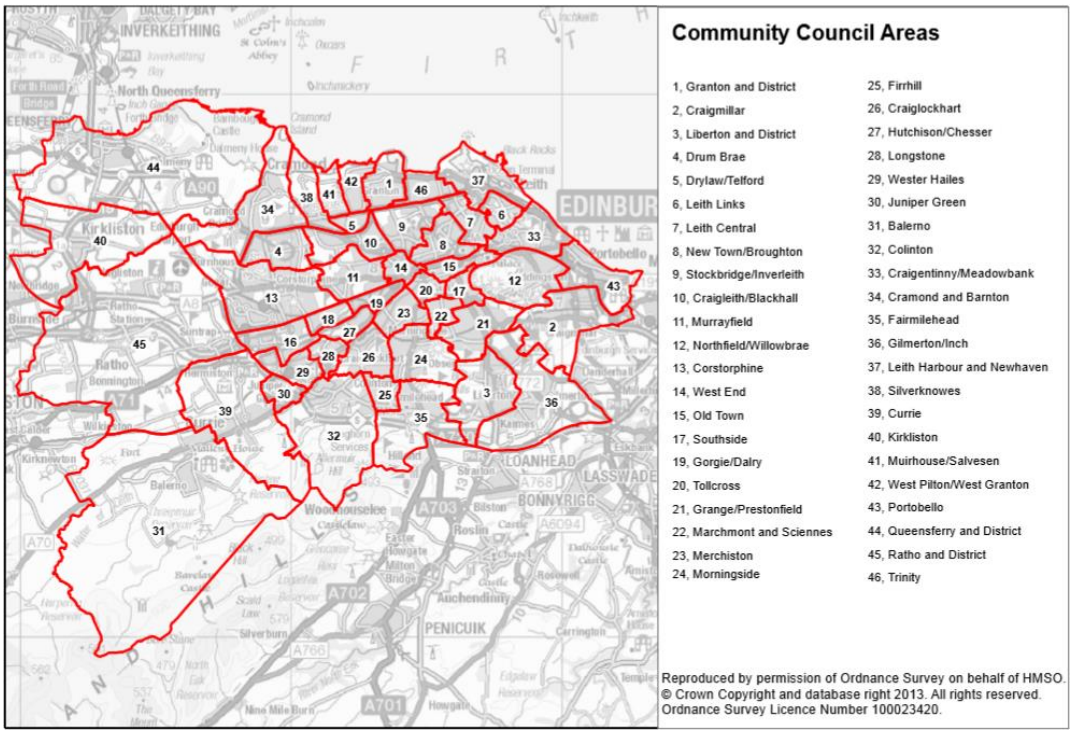


Figure 19. Edinburgh Community Council Areas (General Register Office for Scotland, 2001)

The researcher typically joined the community group through their public social media webpage, then posted an advert looking for volunteers. To avoid attracting nutrition-conscious consumers specifically, and to avoid priming consumers about the purpose of the research, the advert simply stated that volunteers for a shopping experiment were required. The ethics of this decision are discussed in section 4.6.5 *Ethics*. A copy of the advert can be found in the appendix. Volunteers were told that the research would involve a shopping trip being observed and a discussion afterwards. A date and time to meet was typically arranged within the community group's webpage. Before meeting the participants, they were screened to ensure that they were female, aged between 30-40, UK residents, (or had been living within the UK for a minimum of 10 years), and tended to shop in one of the UK's main supermarket chains.

Since the social grade of the community group only gave a rough indication of the participant's own social grade, a second measure was used. A social grade classification

based on occupation was developed by the UK's National Readership Survey (2018). As depicted below in Figure 20, this assigns employment status with a social grade. Previous research has used this exact measure of identifying social groups (Junghans et al., 2015) or something similar (Grunert, Fernández-Celemín, et al., 2010).

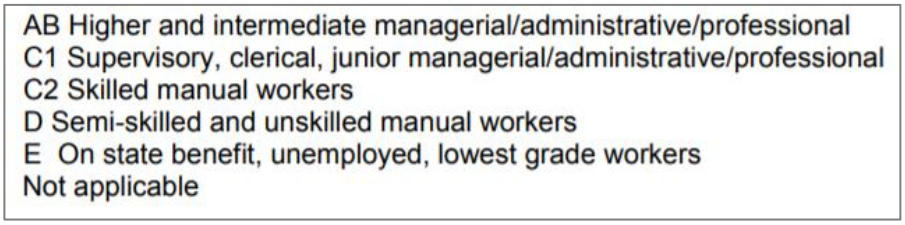


Figure 20. Social grade assigned to employment status (NRS, 2018)

This ranking was then used to analyse similarities and differences between perceptions of FoP labels across different social groups, the results of which are discussed in section 5.4 *SES differences in perceptions.* In this study there was 1 participant from social group A, 7 from B, 8 from C, 6 from D and 4 from E.

4.4.3 Conducting Observations

Observations were conducted in several major UK supermarkets including Tesco, Asda, Aldi, Waitrose, Sainsbury's, Lidl and Morrison's. All of which have adopted the UK's GDA-TL FoP style label. Participants were met just outside the entrance to the supermarket and instructed to conduct a shop as normal. They were asked to 'think aloud' where key decisions were being made, as has been done in previous research (Leek et al., 2015; Malam et al., 2009). Participants were not informed about what the researcher was interested in, nor what the note-taking regarded. This was done in the same fashion as Malam (2009) as to avoid priming effects. The duration of the observation depended on

how many items the participant purchased, but on average lasted approximately 35 minutes.

Rather than trying to note everything that occurred during the observations and think aloud sessions, there were specific aspects of the shopping experience which the researcher aimed note, as listed below. Field notes were used to note key pieces of information during the observations and think aloud session. Seale (1999) points out the importance of recording field notes with as little 'meaning' interpreted as possible. Therefore, care was taken to ensure the fieldnotes simply consisted of descriptions of events and meaning was not inferred until a later stage of analysis. To aid the researcher in answering the research questions, the fieldnotes concerned:

- What products were selected by consumers and if FoP labels were visible
- If consumers referred to FoP labels and for how long / on what products / in what circumstances
- What sorts of information did consumers pay attention to or what stimulus affected their shopping
- Delays in decision making and possible causes for these delays
- The promotional materials within the shop/ visual displays/ atmosphere
- The way in which the consumer shopped (face paced and rushed/slow and methodical) and factors that appeared to influence this
- Any other factor which appeared to influence use of FoP labels

The factors listed above had been identified as gaps in the literature in terms of what role the environment plays in shaping perceptions of FoP labels. The selection of observations as a research method had two key purposes – to observe interactions with food labels in a real-world context, but also to enable an honest dialogue in the subsequent interviews.

The issue of providing socially desirable answers within nutrition label studies has been noted (Fisher & Katz, 1993; Higginson, Kirk, et al., 2002; Malam et al., 2009), therefore the idea was to first observe, then conduct interviews immediately after, in the hope of avoiding or at least minimising socially desirable answers.

Consumers are unlikely to claim to be prolific food label users if this wasn't the behaviour observed. A similar technique was used by Enright, Good, & Williams (2010) in a study of UK shoppers. Enright et al., (2010) highlights that reserving the questioning until after the shop also has the added benefit of enabling consumers to shop as normal. Questioning consumers after the shop rather than before or during reduces the likelihood of consumers' altering their behaviour due to the presence of a research.

4.4.4 Conducting Interviews

Immediately following the observations, semi-structured interviews were conducted typically on sight – in the supermarket café or at one nearby. Semi-structured interviews allow for the variance in individual experience in relation to health to emerge, whilst also allowing for consistent themes to be addressed (Bryman & Bell, 2015). The themes addressed in the interviews were drawn from the gaps in the literature. The interview questions, available in the appendix, involved perceptions of FoP labels, perceptions of the shopping environment, perceptions of health, and perceptions of FoP labels as a means to improving dietary choices. The duration of the interviews averaged 40 minutes and were recorded using a Dictaphone.

Some questions involved providing consumers with prompts so as to facilitate discussions. At times consumers were asked to 'think aloud' how they made sense of the FoP label information upon items which had been taken from their shopping baskets. To

ensure some consistency, other prompts included pizza boxes or peanut butter. Previous research had indicated that FoP labels are most frequently used on fast food products such as these to make comparisons (Campos et al., 2011; Cowburn & Stockley, 2005; Draper et al., 2011; Grunert, Fernández-Celemín, et al., 2010; Malam et al., 2009). Although the end goal was to apply these findings to the context of nudging and social marketing, it was decided not to explicitly question consumers about these concepts since they are typically unfamiliar terms to the everyday consumer.

Initially, the first few interviews began with questions regarding consumers' perceptions and awareness of the UK's GDA-TL labelling scheme, however it quickly became apparent that women were not familiar with the concept or name 'traffic light scheme'. To avoid any future prompting, the initial structure of interviews was changed slightly so as to refrain from mentioning 'traffic lights' per say. In addition, questions regarding general health, diet and shopping were asked first so as to assess if nutrition labels arose naturally in conversations.

Although semi-structed interviews were employed, and so the content of each interview varied slightly, the researcher ensured that roughly the same questions were administered so as to enable comparisons of answers. One benefit of conducting the interviews immediately after the observations was that it enabled the researcher to formulate questions in a manner that felt appropriate for each participant. Bernard (2013) points out that the same interview question may have varying meanings to different consumers, and thus care must be taken to formulate it in such a way so as to make clear to each participant what is being asked. Semi structured interviews meant that questions could be legitimately be continuous varied to unpack perceptions of FoP labels (Bryman & Bell, 2015).

An issue which arises when using a self-reporting technique within nutrition label studies is that consumers tend to inflate their answers in terms of how long they spend looking at labels (Higginson, Kirk, et al., 2002; Higginson, Rayner, et al., 2002; Malam et al., 2009). Although the current research will not entirely overcome the issue of over-reporting, it involved asking consumers about label use directly after they have been observed, which is likely to generate a more honest answer. Research has shown that that the longer the researcher spends with participants the more trust is built which in turn reduces the likelihood of socially desirable answers (Bernard, 2013).

Data collection was terminated when no new information was being obtained through the observation and interview process, this is known as data saturation (Fusch & Ness, 2015). This occurred after the 26th observation and interview, and the researcher felt there was a wealth of data to begin analysing and drawing out themes. How the data was analysed will be discussed in the following section.

4.5 Data Analysis

In conjunction with a software package, QSR NVivo, thematic analysis was used to store, manage and analyse all three data sets. Thematic analysis involves identifying key themes within datasets (Thomas, 2006). Each interview was first transcribed verbatim and the corresponding observations and think aloud field notes were then added to that file. Once all the raw data had been typed, the first step was to code the data. This involved deconstructing the data into smaller chunks, typically sentences or paragraphs, and assigning a code to each – for example ‘mistrust’. Once all the data had been coded the researcher was then able to group the codes under thematic headings. A single code could

be assigned to multiple themes. Lastly, recurring themes and the relationship between these themes were unearthed.

When searching for themes, the research objectives were frequently referred to so as to focus on the most relevant information. The themes identified form the findings of this thesis and were hence used to structure the findings chapter. Since the goal was to allow for subjective, consumer-generated perceptions of FoP labels to emerge from the themes, there was a need to avoid the use of pre-determined asumptions of what these perceptions *should* consist of and instead allow for knowledge to arise from the data. This type of information can be gleaned using an inductive approach. As is typical in qualitative research (Bryman & Bell, 2015), an inductive approach is not informed by a prior theoretical framework and instead thematic patterns are allowed to emerge from the data.

Due to the focus on subjective experiences, grounded theory was considered because of its focus on the participant's perspective and ability to generate explanations of social processes. With grounded theory, data from the results are used to generate new theory. Its use has proved insightful in generating spontaneous answers regarding consumers' use of FoP labels (Pettigrew & Pescud, 2013). However, it was rejected for this thesis because it is typically used in circumstances where the process under question is unknown, or there is a lack of data about a certain issue. This thesis does incorporate what is already known about consumers' perceptions of FoP labels but adds to this by conducting the research in context so as to enhance our understanding of the phenomena.

An inductive technique was therefore adopted to analyse the data since it fit well with the research objectives (Thomas, 2006). Under this approach, reasoning is bottom up, meaning that it moves from specific observations to broader generalisations (O'Reilly & Kiymba, 2015). The primary purpose of an inductive approach is to "allow findings to

emerge from the frequent, dominant, or significant themes inherent in raw data, without the restraints imposed by structured methodologies" (Thomas, 2006, p. 238).

However, although the aim was to avoid using a structured theory as to what consumers' perceptions of FoP labels should consist of, some argue that data, be it qualitative or quantitative "is always constructed through pre-existing values and theories" (Seale, 1999, p. 25). Thus, it is improper to describe this study as not reliant on pre-existing theories of perceptions, but rather it borrows from these without assessing their validity directly. Indeed, both the data collection and the analysis of the findings are informed by what was established in the literature review. It was recognised within the literature review, that psychological models of behaviour – the Health Belief Model (Rosenstock et al., 1988), Self-Efficacy Theory (Bandura, 1977), the Theory of Planned Behaviour (Fishbein, and Ajzen, 1975), and the Stages of Change Model (Prochaska and DiClemente, 1983) – for example have helped to shape our understanding of engagement with FoP labels.

Yet in avoiding a structured methodology for this research, where for example, a hypothesis is tested, this research instead aims to contribute in an exploratory fashion. "In qualitative research, theory is supposed to be an outcome of an investigation rather than something that precedes it" (Bryman & Bell, 2015, p. 404). This was the underlying principle which drove this research. The analysis avoided the use of a single, rigid theory and instead aimed to identify key themes pertaining to the research question in a generic qualitative research fashion (Kelly, 2009).

4.6 Data Quality

4.6.1 Quality in Qualitative Data

Data quality typically refers to the conduct and reporting of research, yet there is no consensus in terms of what this means for *qualitative* research (O'Reilly & Kiymba, 2015). Under quantitative research, data quality involves internal validity, external validity, reliability and objectivity. Each of these concepts have concrete meanings and are sought by manipulating the design of the research. For example, objectivity is aimed for by distancing the researcher from the research topic. However, under qualitative research, the goal is to understand the participant's view of the social world and therefore in direct contrast to qualitative work, there is a need to get close to the participant. This means objectivity is an inextricable part of the process of data analysis. In contrast to quantitative research, a qualitative approach views human influence as part of, rather than distinct from, perceptions of reality (Hudson & Ozanne, 1988). This is particularly true of studies as this one conducted under a social constructionist paradigm which views knowledge as a continually constructed and reconstructed by humans, including that of the interpretations of the researcher.

4.6.2 Is Theory Generation Necessary?

One issue which arises with qualitative research is the question of whether theory generation is necessary. As in, is there a need to create a theory from the qualitative findings in order to achieve a high level of data quality? Strauss (1987) offers one systematic method for interpreting qualitative data which includes a detailed explanation

of how theory may be derived from qualitative analysis. However, Denzin (1988) argues that the empirical world cannot be studied objectively using quantitative methods. He argues that in endlessly trying to adapt qualitative research to fit the scientific positivist paradigm, which puts emphasis on theory generation, data is often contorted, and everyday experiences can be missed.

In today's postmodern world self-identity is multiple and experiences are fragmented which makes it difficult to specify what methodological rules will result in high quality research. Denzin (1988) argues that forcing qualitative findings into a theory format does not necessarily produce high quality research, instead findings should, and can be produced simply for the sake of producing findings. Rather than being a piece of descriptive research, which tends to rely on large data sets and probability sampling (Bryman & Bell, 2015), this research is exploratory which often does not necessitate the production of a theory or framework (Stevens et al., 2006). Similarly, qualitative work is about studying a specific group or a phenomenon within a group within a specific context. This means generalizability is not a typical or required output of qualitative findings (Seale, 1999).

Guba & Lincoln (1989) offer an alternative criterion for judging the quality of qualitative research. Generally, they posit that where quantitative results may strive for validity and reliability, qualitative research would strive for authenticity. This proposal has been shown to be useful in qualifying research under an interpretivist perspective (Seale, 1999) and therefore will be adopted. Guba and Lincoln (1989) propose that the four central concepts of data quality within quantitative research – internal validity, external validity, reliability and objectivity – be transferred under the qualitative realm into credibility, transferability, dependability and confirmability respectively.

4.6.3 Credibility, Transferability, Dependability and Confirmability

Credibility involves the degree to which the findings are true (Guba & Lincoln, 1994). To establish credibility the results from the analysis were presented back to the participants in order to ensure that they were in agreement with what was being claimed. This is also known as member checking (O'Reilly and Kiymba, 2015). The consistency of findings was checked using a variety of methods – observations and interviews, and in this sense the data was triangulated, which enhances its credibility. Triangulation of data refers to the verifying of the same data output from two different research methods. The credibility of this thesis was further strengthened by the fact that the ontological, epistemological and methodological assumptions were congruent (O'Reilly and Kiymba, 2015).

Transferability involves how well the results could be applied in other contexts (Guba & Lincoln, 1994). To attain transferability in qualitative research, Guba & Lincoln (1989) suggest developing rich descriptions of phenomena. This means describing the phenomena in extensive detail in order to be able to evaluate if the conclusions drawn are applicable to other settings. As evidenced by the literature review around nutrition label use and the practice of nudging, a rich understanding of the phenomena was first created before the research commenced. The goal is to develop a rich description of how Scottish women perceive FoP labels and draw conclusions in terms of what this means for social marketers adopting a nudge technique.

Dependability refers to the degree to which the findings are consistent and could be replicated (Guba and Lincoln, 1989). To strive for dependability, the design of the research and the findings were audited by an academic outside the research process who is based in another department. This academic vetted and agreed with the themes that had

been drawn out. However, under an interpretive paradigm, truths and realities are subjective and multiple. This meant that the outsiders' perspective on the findings may well differ from the researchers.

Lastly, conformability refers to the degree to which the findings are unbiased (Guba & Lincoln, 1994). The initial research problem should dictate which methodology and methods are selected for enquiry, rather than the researchers own preferences. However, in doing so biases are already formed by the researcher in determining which is best suited. Moreover, although the *participants* typically generate the knowledge within qualitative studies, these will be coloured by the researcher's epistemological assumptions regarding what information becomes knowledge, how these aspects are accepted as truths, and how the research is disseminated (O'Reilly and Kiymba, 2015). In striving for conformability, steps have been taken to foster a reflexive research process throughout, from the design stage to the implementation and analysis, as will be discussed in the following section.

4.6.4 Reflexivity

The reflexive process involves the researcher laying bare their own perspectives in an explicit way, so as to enable the reader to make a judgement about how much these perspectives may have shaped the research (Seale, 1999). As a white, middle-class, female researcher of a similar age to the participants (30 years old), it is recognised that my presence may have influenced the participants' behaviour and answers. To reduce this, I refrained from expressing my personal opinion regarding food labelling and health campaigns. In addition, I was keen to develop a friend-like rapport with each participant so as to make them feel at ease and speak candidly. I did not provide a detailed explanation

of what the research was focusing on until we had spoken for some time, in order to determine if food labels emerged naturally in conversation. Regardless, my presence may have caused participants to provide health-conscious responses.

My biography will also influence the way in which the research is analysed and the themes that are drawn from the data. In an attempt to reduce this bias, the codes for themes were crafted as a result of concepts appearing multiple times – rather than relying on my opinion of what should justify a code. In addition, the transcripts and observation data were analysed blind, distinct from the participants' name and details. This was done to minimise the influence that arises having met and interacted with the participant previously. Lastly, in a bid to provide a true representation of the participants' responses, I not only used verbatim transcriptions, but I transcribed each interview by saying the conversation aloud whilst typing. This provided a strong sense of the participants' perceptions. Despite efforts to maximise data quality, the research will inevitably be coloured by my theoretical position, preconceptions and biography. In undertaking this rigours research approach, my appreciation for qualitative methodology has strengthened greatly. I have witnessed the true value in applying this methodology in term so garnering unexpected results and rich insights.

4.6.5 Ethics

Four key tenants of an ethically sound piece of research are avoiding harm to participants, avoiding invasion of privacy of participants, avoiding deception and ensuring informed consent is obtained (Bryman & Bell, 2015). At first, the participants in this study were not fully informed that the purpose of the observations and interviews were to uncover perceptions of FoP labels, specifically. This was done for two reasons – to avoid

reactivity, or socially desirable answers, and to ensure a range of participants partook in the research rather than those who are health conscious only. Bryman & Bell (2015) highlight that in these conditions, covert operations "may avoid certain problems" (p. 134). Adding that in these conditions, informed consent should be obtained on a post-hoc basis (as was done in this research). Other nutrition label studies have employed a similar technique of informing the consumer about the true purpose of the research after the event (Grunert, Fernández-Celemín, et al., 2010; Malam et al., 2009).

Prior to the research commencing, participants were asked to sign a consent form, which outlined, among other issues, that their anonymity would be upheld, and that they are able to withdraw from the research at any point. The consent form was then checked again at the end of the interview stage. A copy of the participant consent form can be found in the appendix. Lastly, the research design, data collection and data analysis procedures followed Edinburgh Napier's 'Code of Practice on Research Integrity'. The associated Research Integrity application was approved by the Faculty Research Integrity Committee on 14th May 2016.

5 Chapter 5: Findings & Discussion

The following chapter contributed to a conference paper: -

Soraghan, C. (2018) "Applying a social marketing perspective to perceptions of food labels" Presented at the World Social Marketing Conference, Antwerp, Brussels

5.1 Introduction

This chapter presents the findings of the study and attempts to answer the overarching aim of analysing nudging as a social marketing technique, using Front of Pack (FoP) nutrition labels as an example of a nudge. The perceptions of Scottish female consumers aged between 30-40 years old were assessed in terms of how they regard, understand and interpret food labels in a real-world context.

The results are structured according to the themes which emerged from the analysis of the observations and interview answers provided by participants. When analysing the findings, the data could be grouped into the following broad categories: The supermarket environment, Perceptions of FoPs generally, Perceptions of FoPs as influenced by SES, Perceptions of FoPs as influenced by gender, and Nudge as a social marketing technique.

A decision was made to combine the findings and discussion so as to ease the flow of reading and avoid repetition. Thus, within this section the results are critically assessed in relation to previous work outlined in the literature review. The findings are also positioned within a broader framework of theory which informed the research design. The social constructionist approach adopted enabled the researcher to integrate their own interpretations of the results into the analysis. Finally, areas in need of further research are alluded to within this section.

5.2 The Supermarket Environment

Several themes emerged from the results in relation to the impact that the environment plays on perceptions of FoP labels. Having conducted the research within a real-world context whilst using inobtrusive observations, it is apparent that the supermarket environment itself plays a critical role upon perceptions of FoP labels. The predominant source of data used for the following section was the observation field notes, however, interview extracts will be interwoven to supplement this theme (Berg, 2004). Using participant observations the researcher was better able to gain insight about the social reality of the person in question and the social causes of behaviour (Bryman & Bell, 2015).

5.2.1 'Out to Get Me'

Every participant, regardless of which supermarket the observation was conducted in, selected a wide number of items which displayed the GDA-TL FoP food label. This is encouraging as it demonstrates how widespread and consistent the UK's label format has become over recent years. However, during the observations, not one of the twenty-six participants appeared to use or refer to FoP labels or any form of nutritional labelling. Similarly, none of the participants commented upon FoP labels during the 'thinking aloud' section of the shop. This finding was consistent across varying social groups, regardless if shoppers were slow and methodical type-shoppers, or fast-paced, rushed shoppers. Participants in this study did not appear to spend any duration of time checking

for any nutritional information. The following sections offer some explanation as to why this was the case, focusing first upon the shopping environment.

The participant's own explanations as to why FoP labels were not referred to are elaborated within section 5.3 *Perceptions of FoPs Generally*. First, a summary of how women reacted to the shopping environment is presented, and the influence this had over label use. Whilst shopping several women referred to the fact that they aimed to spend as little time as possible in the supermarket. On occasion, comments were made as soon as they had entered the supermarket suggesting an element of mistrust or the supermarkets being 'out to get them'. It was remarked within the observation notes that these women appeared to be in a rush and shopped in a serious manner, or in a matter-of-fact methodical way. The extracts below provide some clarity as to why this was observed.

> ***Amanda (Social grade D)*** *"I just know that the longer I stay in here the more crap I'll come out with. You've gotta be quick to avoid all of it"*
>
> ***Sammy (Social grade E)*** *"It's just you're surrounded by people who are walking really slowly and don't know what they're doing and just getting in my way. And so, I tend to be quite busy and rushed... and all the faff of things trying to make you go "oh look at that thing I didn't want to buy..." I just get what I need to get and get out."*
>
> ***Alissa (Social grade: C)*** *"It's so bright and colourful and there's so much of everything [Laughs] I know most people like choice but… I know the less time I spend here the less I'll buy!"*
>
> ***Max (Social grade B)*** *"You know it would be so nice if all that didn't exist. Like if you could go to the supermarket and that stuff wouldn't be there. It's actually like 80% of the food in the supermarket is junk. That's maybe why I was so quick."*
>
> ***Kirsty (Social grade C)*** *"I really genuinely hate shopping so I have a list and try to go in and out very quickly. I don't like hanging about…*

cause I don't have time to think about anything else, all I'm thinking is: I need food, I'm hungry!"

Lindsay (Social grade B) *"Well it makes you buy stuff you later regret, well maybe not immediately but the next day you're thinking why did I eat that!?"*

Listed above are some of the varying reasons as to why women shopped in this manner. The vast majority of the participants referred to at some point, the struggle to avoid buying junk food in the supermarket, or the challenge involved in overcoming the temptation to make purchases that they would later regret. These struggles were associated with the supermarket environment and time spent there, thus decisions were made hastily. The impact of harbouring these sorts of attitudes towards the supermarket environment are important. Namely, entering the supermarket with a feeling of contempt or mistrust, reduces the likelihood of slowing down to check the packaging information. The mere sight of promotions on confectionary foods resulted in some women speeding up in their shopping so as not to be lured in. In addition, the mistrust of the supermarket environment appears to spill over into mistrust of its offerings and packaging. Mistrust will be explored further in section 5.3.8 *Trust in Labels.*

Previous research has shown that if consumers feel under time pressure in a supermarket they are less likely to use nutritional information and instead will rely on habitual purchases (Koenigstorfer & Groeppel-Klein, 2010). The observations suggest that the supermarket could be a *cause* for women to feel under time pressure. Habitual decisions were evident from the manner in which some women shopped – placing items into baskets whilst barely glancing at them. This was also evident by the way in which the supermarket was navigated almost by rote, so as to complete the shop in the fastest time possible. It is already established that that time restrains play a key role in FoP label use, however, the

findings of these observations suggest that the supermarket itself may induce these time pressures.

Examining FoP labels in real-world conditions highlights the importance of the environment in which they are situated and expected to operate within. The observations brought to bear the abundance of competing forces which battle for attention, each trying to entice the shopper to consume. As can be seen from the quotes above, the sheer volume of unhealthy products can be overwhelming. The array of junk food is often seen as purposely designed to cause distraction. These forces work against the FoP label, and this is before considering the consumers' own personal resources (motivation, time, knowledge). Previous research has found that nutrient-poor products or unhealthy products in supermarkets often display a promotional bias in comparison to more healthier foods – making them appear cheaper (Dobson & Gerstner, 2010). This study suggests that the chaotic supermarket environment appears to stifle the opportunity for consumers to think through a product's health value, especially at a nutrient-by-nutrient level.

5.2.2 A Leisurely Time

In contrast, some women appeared to thoroughly enjoy the shopping environment and treated it as a day out or as a relaxing time to themselves. Although in the minority, the quotes below highlight that these women found the shopping environment relaxing. This group of women did not feel pressured into making purchases. They were not speedy so as to avoid distractions, and instead appreciated the supermarket environment and its offerings.

Kayleigh (Social grade C) *"I never rush my shopping; I never get stressed about it… If I know I need to do a shop, I'll have nothing else planned that day so that I can enjoy it. Because I only work Thursdays, Fridays and Saturdays as well. I take my nana out for her shop too. She can't walk that fast. So, we go for a walk have a look around the shops, that's just what we do".*

Martha (Social grade E) *"Even if I'm doing a small shop I'd spend a lot of time in there or if I'm going to the shops without having had dinner, I'd still stop and maybe check online for some dinner ideas. I like to wander the shop and think about what I need to buy... so it always takes me time."*

Helen (Social grade B) *"This is my day off! This is a joy of a day! So, because today even though you're with me I'm thinking I have two hours to myself - and might as well enjoy it! I'm relaxed I'm not getting too stressed and that's generally how I feel when I shop."*

Yet despite the far slower approach to shopping and food selection, still, food labels did not appear to influence the consumers in any way. The observation notes included no glances or comments made towards food labelling, and no references to food labelling was made by these women during the think aloud section of shopping. Therefore, although time pressure evidently plays a role in food label use, it alone cannot account for the low level of label engagement.

All shoppers, including those that enjoyed or disliked the supermarket environment, experienced some delays over certain issues. Most frequently, delays were caused by consumers checking sell by dates so as to avoid waste and make their spending stretch. Other delays were the result of consumers conducting price comparisons, or quantity comparisons, checking for dietary-specific foods such as vegetarian or gluten free items, or searching for country of origin so as to avoid pesticides.

This demonstrates that consumers are willing to spend the necessary time to obtain certain information that they feel is relevant to them, and that FoP labels appear less relevant or necessary. Prior research tends to overlook this step of 'relevance'. Awareness and relevance should not be conflated. Consumers may be aware of labels but not find them relevant. For example, Grunert et al.'s (2010) conceptual framework of decision making in relation to food labelling (Figure 1) does not include 'relevance' as an aspect of perceptions of food labels. Moreover, prior research tends to make the labels overtly relevant to consumers – by making them salient and immediately presenting them to consumers for inspection (Pettigrew & Pescud, 2013).

It should be emphasised, that the researcher is not claiming that the participants were not exposed to FoP labels. Naturally, exposure can occur consciously or subconsciously. However, of note was how participants perceived FoP labels in a natural setting. In the interviews following the observations, participants were asked if they had noticed any products which contained FoP labelling and if they had used them. This format of questioning the participants immediately after the observation strengthened the validity and credibility of the consumers response – since the behaviour in question had occurred so recently (Enright et al., 2010). The findings of the observations are supported by the responses given in interviews, with participants expressing an extremely low level of interest in FoP labels. These findings support recent studies that found that when label use is assessed in real world contexts, their impact is insignificant (Hamlin, 2015; Vasiljevic et al., 2015).

5.2.3 Role of Context

By considering the context in which consumers are exposed to FoP labels, both practical and methodological contributions have been made. On a practical level, these findings shed some light on the role that the supermarket environment plays in perceptions of FoP labels. Namely that a barrage of unhealthy products and promotions can leave some consumers wanting to spend as little time in supermarkets as possible. The finding that under natural conditions FoP label use is relatively low is supported by others (Enright et al., 2010; Grunert, Fernández-Celemín, et al., 2010; Higginson, Kirk, et al., 2002; Malam et al., 2009; Steenhuis et al., 2004). What makes this study unique is that the qualitative style in which it was conducted means that we are able to offer some explanations as to *why* engagement with labels in real-world contexts are so low. Additionally, this study was uniquely conducted using UK consumers being exposed to the UK's FoP label design. The consumers were provided the opportunity to explain their behaviour in an open-ended fashion, unlike previous studies.

These findings also contribute methodologically through the use of observations and 'think aloud' techniques in a natural setting to assess perceptions of FoP labels. These techniques are surprisingly lacking in nutrition label research (Crockett et al., 2018; Dean et al., 2015; Grunert & Wills, 2007; Onozaka et al., 2014; Volkova & Ni Mhurchu, 2015; Wills et al., 2009) which means that the supermarket environment and its influence is often overlooked. There is however, a radical difference between inspecting FoP labels under an experimental design and exposure to them in a real-world context. Crucially, under experimental design, consumers are typically prompted to engage with FoP labels, whereas in real-world conditions, natural exposure appears extremely limited. This study suggests one reason for this may the design of the supermarket itself. In one study Steenhuis et al. (2004) found that consumers had not noticed the introduction of a FoP labelling scheme into their regular supermarkets, and postulated that the distracting supermarket environment may be to blame. This study provides support for this notion.

The field notes regarding the supermarket environment remarked on the abundance of promotions on junk food, end aisles with special offers typically on unhealthy foods, and impulse purchases throughout the store. The consumer's responses to the environment support the idea that these are distracting and cause consumers to actively avoid time spent in supermarkets.

By using observations in a real-world context, it was revealed just how little time is spent choosing or inspecting food products. The majority of participants in this study relied on habitual processes to make decisions. This was evident from the speed at which items were placed in baskets, or by passing-comments made during the 'think aloud' section with '*I always buy this one*' sentiment. On the rare occasion when a new product was selected (n=3) nutrition labels did not feature into the decision-making process. In fact, they were not mentioned at all. Scarborough et al. (2015) points out that when heuristics are used in a food shopping environment, health conscious consumers tend to rely on broad brush truths such as 'nuts are a healthier snack than chocolate'. Thus, the practicality of breaking down and interpreting nutrition labels does not fit into this broad method of guiding behaviour. When participants in this study were asked to describe their decisions when choosing products, or asked about their shopping experience as a whole, only one mentioned nutrition labels unprompted. Instead, what was commonly cited was taste, price, meal planning, providing for the family and food waste.

Lab experiments have indicated that health claims such as 'low fat' should have a strong potential to increase healthier food selections, however in real-world studies the same claims have been found to be generally ignored by consumers (Grunert, 2016). Thus, the same could be happening for FoP labels – in labs they appear worthwhile, however in real-world conditions, their impact is negligible. This appears to be the case since the latest systematic review deemed the impact that FoP labels have on real-world consumption as insignificant (Vasiljevic et al., 2015). The findings from this study

suggest that results from lab-based studies should be received with caution and reinforces the need for more analysis to be conducted in context.

When it comes to food selection, a practice so ingrained in social and cultural influences, the context should not be perceived as an assortment of confounding variables that need to be controlled for, but rather the context itself should form part of the investigation (Marriott, 1994). The results from this study reveal that the conditions of the supermarket are not conducive to consumers allocating adequate amounts of time and resources into deciphering the UK's information-heavy GDA-TL label. Unlike lab conditions, in real-world conditions consumers do not have a heightened attention towards labelling and a prolonged period to unpack them. The results add to the limited yet growing pool of research which focuses on actual behaviour rather than self-reported behaviour regarding FoP labels.

There are obvious gains to be had by using laboratory conditions to assess FoP labels, however, these should be supplemented with real-world observations. It should be assessed how the findings of experiments actually transfer into every day practices, which is what this study aimed to do. FoP labels require consumers to consider the long-term goals of being healthy when humans are hard-wired to seek out short term rewards (McClure, 2004). Thus, it takes concerted effort to avoid consuming products high in fats, sugars, saturates and salts especially in a supermarket environment which encourages these short-term rewards.

The number of studies examining FoP label use in real-world conditions is extremely low (Crockett et al., 2018; Dean et al., 2015; Grunert & Wills, 2007; Onozaka et al., 2014; Volkova & Ni Mhurchu, 2015; Wills et al., 2009), yet fewer still explore how the British format (GDA-TL) is perceived, and even fewer examine perceptions of British women. This is important because as has been shown here, Scottish women are not dedicating

time to nutrition labels and this is in part influenced through social and cultural aspects of shopping. For example, in this study, the participant's shopping baskets alone highlights how consumption follows a social gradient. Although this was only a subtle difference, more affluent consumers purchased more fruit and vegetables and less processed foods than those of lower social groups. There are specific differences in how women of varying social groups interact with FoP labels, and this will be discussed in section 5.4 *Socioeconomic Differences*. Therefore, is it important to look at the context and the culture which shapes behaviour.

The main contribution of this section has been to explore what role the supermarket environment plays on perceptions of FoP labels. This is a new contribution to knowledge since, as far as the author is aware, it has not been discussed in previous research and observed in a real-world setting. Instead, the focus tends to fall onto consumer characteristics (nutrition knowledge, health conscious etc) or label format (guideline daily amount, traffic light etc). The following section examines exactly how FoP labels are perceived by the consumer, from the consumer's perspective.

5.3 Perceptions of FoP Labels Generally

The following themes emerged from the data in relation to how FoP labels are perceived by Scottish female consumers: - salient information, awareness, for someone else, rarely useful, impractical, irrelevant, confusion, trust and colours. These will each be discussed in the following section with the aim of building up a picture of perceptions of FoP labels. Within this thesis perceptions are defined as the way in "which something is regarded, understood, or interpreted" (Brooks, 2008, p. 273). Typically, the interviews occurred in the supermarket's coffee shop or in a coffee shop nearby. The semi structured interviews

began with a general discussion about the shopping trip that had just been observed, during this section only one participant mentioned nutrition labels unprompted when describing their shopping experiences, suggesting that they do not feature highly in the minds of consumers.

5.3.1 Salient Information

Using FoP labels to make comparisons between products has been shown to be the most common way of using labels in previous studies (Campos et al., 2011; Cowburn & Stockley, 2005; Draper et al., 2011; Grunert, Fernández-Celemín, et al., 2010; Malam et al., 2009). Therefore, to facilitate discussions, participants were asked to compare two similar pizza products displaying FoP labels and 'think aloud' as to how they might choose between them. Of interest was the participant's subjective understanding, attitudes and general comfort in discussing FoP labels.

When provided the opportunity to discuss FoP labels in this open-ended style, interesting differences emerged from the consumers answers. Many participants mentioned price, branding, taste and personal preferences prior to any nutrition label information, however since labelling is of interest for this research, only this section of the interview will be focused on. There were generally four ways in which participants responded to this task: nutrient-specific (immediately referred to specific nutrients), colour-aware (referred to the colours of the labels and tried to explain the meaning of these), comprehensive (provided a well-balanced summary of the label's information) or avoidant (avoided answering and tried to change the topic).

There were clear contrasts between what label information was salient to different women. Only one participant appeared able to relay a comprehensive summary of the

label's information. This participant spoke effortlessly and compared the labels in a straight-forward manner.

> ***Roisin (Social grade B)*** *"Well the first thing I notice is that they both have 2 reds, a green and an amber. So, the first thing that jumps out at me is the colour. Then I would look at the numbers but I think it is a very visual initial thing. I would then look and see that the ones without olive oil are slightly less fat and less calories. But then not enough to change the colour coding system. So, they do have the same colour coding for the same nutrients. If I was in a rush, I'd probably pick the one that had slightly less of each even though it's only a small bit less. But it would be a consideration that this one had more olive oil so what I'd do then I'd probably have a look at the information on the back and see – because olive oil on its own is not that bad for you. So, I'd want to check the other ingredients so see the difference."*

The participant above conveyed a sense of comfort and confidence in discussing her interpretations of the label. Roisin explains that the colours are first noticed, how these translate to the level of nutrients which are of importance to her (fat and calories), how these might be used within shops and how this might impact upon behaviour. However, she was the only participant who spoke in this manner. On the other end of the spectrum, some women responded in an avoidance manner. They were clearly uncomfortable and made justifications for not being able to relay any of the label's information before attempting to do so. There were long pauses between answers, attempts to change the subject and a constant checking that their responses were adequate:

> ***Reina (Social grade E)*** *"Oh man you're really going to test me now, I have no idea!"*

Kayleigh (Social grade C) *"But I wouldn't use that it would be whatever is cheaper and how long it would last - as in could I put it in the freezer."*

June (Social grade D) *"I would probably be more like looking at the price or if it was deep pan or thin and those sorts of things would be more important than this stuff... Oh dear that shows how terribly uninformed we are!"*

Susanne (Social grade C) *"But if we did want something quick and we wanted to throw in the oven I would think - ok this is fast, and I'd go for taste. Go for what you fancy, if you fancy the chicken one - get that, and if you fancy the other one - get that. Choosing between these two, I would choose the chicken because I prefer chicken I would not use the traffic lights."*

Liz (Social grade B) *"Oh Jesus no! If I wanted a pizza and a packet of crisps I'd be the first to go get them. I'd never deprive myself."*

Helen (Social grade B) *"Oh man I'm a dreadful shopper I would just go for the nice colourful one!"*

Kirsty (Social grade C) *"I just don't look at labels, I must admit. I know its pretty bad."*

Nikita (Social grade C) *"Oh I really wasn't prepared for this. I don't know, I've never actually done this before'*

These participants were evidently uncomfortable in discussing their interpretations of FoP labels. With some encouragement these participants began to explain how they would make sense of the information. However, it was generally described in a very simplistic format such as stating, 'saturates is 19%', making no relation between this and their diet, or how the information would impact upon their behaviour. This led to a sense of shame and embarrassment when consumers thought their ability to use the labels would be questioned.

The bulk of participants fell somewhere in the middle of these two architypes and could be classed as either nutrient specific or colour aware. For some, the colours were described first and foremost. These participants tended to be aware of the numerical data but did not make use of it when attempting to choose between two products using the labels. Having questioned why the numerical data was avoided or not mentioned, the causes were mainly due to consumers not understanding the terminology, and thus the colour was used to make sense of the label. How the colours were interpreted is discussed further in section 5.3.9 *Colours*.

Interestingly however, those participants that responded in a nutrient-specific manner, as per quotes below, often had to be prompted to use the colour. The colour of the labels appeared to make so little impact upon their analysis that they did not mention the colours initially in any way.

> ***Max (Social grade B)*** *"Ok if they were the exact same price... well I tend to think things with more fat are better... I don't know why. This one has more salt and fat but they have roughly the same amount of sugar. I mean I'd probably go with the Deluxe one cause they're giving me more fat there. I'd probably think it was good fat. Is this fat separate from saturates? Yes, it is, so I'd be happy with that."*
>
> ***June (Social grade D)*** *"I'm looking at the fat content so the chicken one is only 12 and the meat feast is 17, the saturates are 4.2 in the chicken compared to 6.4 in the meat feast, sugar is 10 but the sugar is less in the mat feast strangely, and the salt is 1.9 in the chicken and 2.0 on the feast… so probably on balance the chicken would be the winner!*
>
> ***Anna (Social grade E)*** *"Right if I was asked to use these to make a choice I'd say the meat feast has 5g of sugar and this one has 10g so this is better, but would anyone actually do that?"*
>
> ***Helen (Social grade B)*** *"In order to work out how much is actually in the product I would need to work out how much is there and how*

much is that so 15 grams, and how much I would use per serving. Which is why I don't use them!

Researcher *"And do the colours mean anything to you?*

Helen *"Ah now! red is the bad stuff. Green means it's ok?"*

For these participants the colour was less salient information and the numerical data was discussed first. Evident from the quotes above, the consumers who perceived the labels in this way did not feel they had a confident grasp of the information – they made comments as to their guesswork and seemed to reel of numerical data without putting it into context. One explanation for some consumers not using the colours and instead focusing on the numerical detail could be that they feel threatened by the numerical data. Often comments were made before attempting to engage with the labels about how consumers felt unable to make sense of the information. Thus, the numerical data could be preventing some consumers using the labels altogether, even the more accessible colour coded information.

The implications of this finding are important. It suggests that the addition of the GDA numerical information upon FoP labels could, for some consumers, be having a detrimental effect. This issue, and the perceptions of colour generally will be explored further in following section 5.3.9 *Colours*.

Typically, when discussing the salience of information on FoP labels, scholars discuss what nutrient is of particular importance to consumers. For example, Grunert & Wills (2007) found UK consumers to be most interested in fats and calories. However, contradicting this Balcombe et al. (2010) found UK consumers to be more interested in salt and saturated fats. What this study suggests is that there is also a need to critique what parts of labels as a whole are more salient to consumers. This is best established by

allowing them to speak freely about their interpretations of labels, rather than asking them directly to select between nutrients.

The purpose of the section has been to show that salience of information on FoPs varies between women. Numerous studies have examined what parts of FoP labels are salient to consumers, either by looking at nutrients specifically (Balcombe et al., 2010; Grunert, Wills, et al., 2010; Hodgkins et al., 2011; Rayner et al., 2001), or by comparing if colours are more salient than numerical data (Bialkova et al., 2013; Gracia & de-Magistris, 2016; Grunert, 2016; Siegrist et al., 2015). Yet this study is unique in that it looked at the UK's GDA-TL hybrid label in isolation. And reveals that the salience of the numerical data could be overriding the more accessible colour information. It suggests that the information-heavy design of the GDA- TL label is cognitively demanding for consumers to navigate.

When developing the initial FoP label format, the Food Standards Agency (2005) commissioned a largescale (n=2,700) piece of research which concluded that consumers are 30% faster at interpreting traffic light labels alone, than compared to GDA labels. It also found that consumers from lower socioeconomic groups were better able to interpret traffic light labels than compared to GDA labels. Similarly, a recent study comparing traffic light labels to GDA labels demonstrated that when under time constraints and when aiming to be health conscious, consumers performed better using traffic light labels alone (Crosetto et al., 2016). This study supports the notion that the information from the GDA section could in fact hinder consumers use of FoP labels, particularly in the UK where the traffic light and GDA label has been combined.

This section goes some way in answering calls (Eden, 2011; Grunert, 2016) to begin unpacking how consumers make sense of FoP information generally; what parts are

immediately of interest and which parts are less so. It helps to build a picture of how the UK's FoP label is perceived and what parts appear to be more useful than others.

5.3.2 Aware but Uninterested

Generally, awareness of the existence of FoP labels was high and consumers were appreciative of the information being there. All but one participant recognised the GDA-TL label and had a general idea of its purpose. Eighteen of the 26 participants initially described the labels in positive terms such as useful or worthwhile. This echoes the sentiment of the Food Standard Agency's earlier research on UK consumers attitudes towards FoP labels (Food Standards Agency, 2008, 2010). However, when consumers were permitted to expand on their answers, as was the case with this study, and having been observed, their response changed slightly. In line with what had been observed, the most common response was one of being aware of their existence but choosing not to use them or having very little interest in them, as the quotes below outline.

> ***Max (Social grade B)*** *"I do recognise them so it's funny that I don't use them. That should be an easier way to find information but I don't, for some reason I'd always go to the other information, I don't know why."*
>
> ***Joy (Social grade D)*** *"No… cause I don't need to know how many grams of salt is in a bag of salted peanuts I just know there's loads!"*
>
> ***Claire B (Social grade C)*** *"I have seen them before yeh but I've never used them myself"*
>
> ***Erin (Social grade C)*** *"I never pay attention to it. I don't even know what it is now that I'm looking more carefully… I recognise a few things now I'm reading it but no, I never ever took it. I never use it."*

June (Social grade D) *"I have seen them before but I don't pay a huge amount of attention to them."*

Claire M. (Social grade B) *"Yes I know what they are but I don't use them..."*
Interviewer *"Why's that?"*

Claire M. (Social grade B) *"Because if I'm going to buy a cheese roll I'm going to buy a cheese roll.. do you know.. like!?"*

Leanne (Social grade D) *"To be honest I've never really noticed them, well I probably knew they were there but nah I don't pay any attention to them"*

Liz (Social grade B) *"Ah right no, I don't, but I know about them. Are they the traffic light system?"*
Interviewer*: Yes, do you know if any of the products you bought today had these?"*
Liz (Social grade B) *"No cause I wasn't looking."*
Interviewer*: "Do you ever use them?"*
Liz (Social grade B) *"No, very rarely."*

Kayleigh (Social grade C) *"I recognise it and I know what it is but I don't pay any attention to it".*

Danielle (Social grade D) *"I know that it's there but the only time I might use it is when I buy like a triangle sandwich"*

Helen (Social grade B) *"No I never bother it's too much hassle"*

Reina (Social grade E) *"I've never really noticed them actually."*

Susanne (Social grade C) *"I just buy what I like. I don't really pay awful lot of attention to the traffic light scheme at all."*

Alicia (Social grade: D) *"I don't read them... I just buy what I like"*

The quotes above illustrate that the majority of consumers in this study were aware of the existence of FoP labels but hadn't paid much attention to them. Although brief, the author thought it important to include these quotes since they demonstrate such a consistent theme and highlight the blasé attitude that the consumers held towards the existence of Fop labels. Typically, the lack of attention directed towards them was a result of time constraints in supermarkets, feeling the information on the label was irrelevant to them, or being unsure what the information was trying to convey. These reasons are explored further in the section 5.3.5 *Impractical/ Resentment.*

For some years now, UK consumers have demonstrated a high level of awareness of FoP labels (Campos et al., 2011; Grunert, 2016; Malam et al., 2009). Yet results from this study underline that awareness does not translate into use. Awareness is the first step in many models of consumer decision-making (P. Kotler, 1972), yet the consumers then must have to perceive the information as relevant or practical in order to make use of it. In some respects, these labels are clearly attractive enough to be noticed, but not practical enough to be used. This study contributes by using a constructionist approach, focussing on the consumer's perspective and allowing them to describe FoP labels in whatever way was relevant to them. This is not typically done in nutrition label research, and instead perceptions are presupposed from the onset.

Awareness and perceptions of FoP labels may occur at an unconscious level. Even those few participants who claimed never to have noticed the FoP traffic light label before, may have been influenced by them at an unconscious level. However, the scope of this study is confined to exploring what conscious and cognisant behaviour occurs when consumers are presented with FoP labels. This will be influenced by both top-down (the consumer's attitude, time available etc), and bottom-up factors (the type and format of the label) and it is these areas which are of interest (Kleef & Dagevos, 2015). The findings of this study emphasise that awareness does not indicate use and again speaks to the need to explore

relevance in food label research. Consumers did not appear to find the information on the labels relevant for them and the reasons for this can only be explored through qualitative analysis, as will be done in the subsequent sections.

5.3.3 For Someone Else

In terms of general liking of FoP labels, responses were mixed and varied. Almost two thirds of participants claimed to like the information presented in the FoP label, believing it was important information that should be available to the public. Comments were made that if the information was not present, it would be strange and that any information which helps to act as guide for a healthy diet is a positive thing.

Naturally, positive attitudes were stronger amongst those that claimed to make use of labels. Yet despite the positive sentiment towards the existence of labels, the majority of women in this study purported not to use them personally. Several reasons for this emerged. One reoccurring response was the perception that these labels were viewed as useful, but for someone else. This was an unexpected result and was provided by women of varying body mass indexes and varying social backgrounds.

> ***Liz (Social grade B)*** *"I don't personally use them because I know about healthy eating but for people that aren't aware for healthy eating and are being taught to use the traffic light system its actually very confusing and it's not very clear to know. Like if I was an elderly who was on certain medication and I had to pay attention I might use them then.*
>
> ***Erin (Social grade C)*** *"Yeah I don't really appreciate it it's a bit confusing, however it might be useful for someone who's taking care*

of their diet. I think I do take care of my diet already, so I don't pay attention to these that much.

Amanda (Social grade D) *"Yeh I mean, if I went to the doctor and they told me your blood sugar levels are high or you need to reduce your salt or whatever, or if you're borderline type 2 diabetes. I would then start looking at the sugar content and say there was 2 packs of cookies – I would look for the lower one. But I don't want to live like that! Because... food tastes good! But yeh if I had to for medical reasons then yeh I would.*

June (Social grade D) *"To be honest I don't think much about them. I suppose we are quite lucky because for dietary reasons - like I have friends on specific diets…like medical reasons why they may have to be very particular about, you know, has it got so much of this or how much sugar or how much salt and blah blah blah. I suppose it's relatively reassuring because it's giving them that information."*

Kayleigh (Social grade C) *"I think they're useful if somebody is kind of not aware of how to balance food. I'm quite conscious of what I eat. A lot of it I try and make cause that's better than just buying in packets all the time but I mean if she has a pot noodle she has a pot noodle it's not the end of the world.*

Claire M. (Social grade B) *"I don't think it's helpful for my generation but maybe younger people… Yeah maybe… like especially for breastfeeding women. Like there are things, you should eat and try to get a balanced diet when breastfeeding so the baby gets this that and the other..."*

Kirsty (Social grade C) *"Oh I like labels. I think for people that are actually trying to proactively watch what they're eating and say if the salt content was high and people had high blood pressure and they need to check that or whatever. I think it's good."*

Alicia (Social grade: D) *"I think if there is something specific we were trying to change, or yeah because if the doctor told me to take*

care of my diet seriously I might – but at the moment I don't feel like… there's no need."

It should be clarified that these women had not been asked '*who* do you believe the labels are for', instead they had simply been asked if they found the information on the labels useful, and a surprisingly high number of women reported that they perceived them as useful '*for someone else*'. This represents a contribution to knowledge since to the author's knowledge, no other studies have reported this finding. It may help to explain previous findings generally report positive attitudes towards labels alongside low actual use within supermarkets (Liu et al., 2015; Seward et al., 2016). The use of exploratory qualitative interviews which seeks out this exact type of nuanced response has proved useful here. The findings highlight that a clear distinction exists between attitudes towards the labels generally, and attitudes towards labels for personal use. Moreover, it ties back to section 5.2.3 *Role of Context*, which discussed the need for the 'relevance' of these labels to be investigated in future research.

This notion of the labels being for someone else, does not appear in previous studies of UK consumers' attitudes towards food labelling (Food Standards Agency, 2008, 2010; Malam et al., 2009). One explanation for this may be, that having just been observed in a shopping environment, consumers in this study were more likely to be honest or remember why labels are avoided – as opposed to when being questioned in an online survey. Other reasons as to why this may not have appeared previously, is due to the limited method in which perceptions were explored. For example, asking participants to rate their accordance with pre-determined statements such as "*This FoP label provides me with the information I need'*, '*This FoP label gives too much information'* etc (Méjean et al., 2013), and thereby limiting participants' ability to express their true views.

Although several believed that back-of-pack information was more trustworthy (discussed in section 5.3.8 *Trust in Labels*), participants liked the fact that the information was colourful and designed to be used in an at-a-glance fashion. This is supported by previous research which has shown that when using eye-tracking equipment, the colours on FoP labels do speed up the time required to process the information (Siegrist et al., 2015). Perhaps consumers positive attitudes towards labels stems from the fact that they can understand how the labels *should be* used, but importantly, this does not mean that they will be. Experiments which use eye tracking devices and ask consumers to make comparisons between products are not representative of real life experiences when consumers had not been instructed to be healthy.

It is clear from the quotes above that women perceive the UK's FoP traffic light label as inherently designed for medical use or for those on a specific diet, they do not perceive them as practical and for everyday use. They are consistently found to be 'for someone else'. However, according to the UK Government, FoP labels are designed to aid all consumers make healthier choices (The Scottish Government, 2013b) since even small tweaks to diet can lead to substantial health benefits (Kahan & Manson, 2017). Therefore, it could be considered an immense waste of effort if this issue is not rectified and consumers are not made aware that FoP labels are for all and should be used regularly.

5.3.4 Rarely Used

During the shopping trip accompanied by the researcher FoP labels did not appear to be used, however a few women did claim to use them on other occasions during the interviews. Of these few women, use of labels was irregular and infrequent. There were however, consistent reasons provided for using labels – most notably when buying a

product for the first time, or when comparing two similar products. FoP labels were most often referred to when buying confectionary or ready meals and least likely to be used them when buying fruit, vegetables or meat. This is consistent with previous studies (Graham & Jeffery, 2011; Grunert, Fernández-Celemín, et al., 2010; Grunert & Wills, 2007).

> ***Sammy (Social grade E)*** *"I'd pay attention to them if I was buying something different but if I was buying the regular stuff and I know what I'm going to buy then I wouldn't really use them."*
>
> ***Lorna (Social grade A)*** *"Well if I was buying something for the first time I probably would check them. Because a lot of what I was buying just now I had bought previously – I kind of aware of what's in it and what is not in it. But if I was buying something for the first time I probably would pay more attention to that label.*
>
> ***Roisin (Social grade B)*** *"I think they're quite useful. I didn't really use them today but if I was buying something new I'd be more likely to use them I think. I think I tend to use them more when it's not like stock or staple stuff, like cooking things, but I would use them more if it was a snack or an oatcake or something sweet or something like that. I would tend to look at the calories or sugar content probably."*
>
> ***Fiona (Social grade B)*** *"Because it's right there -the facts are laid out on the table. And when you start paying attention to it it's quite scary actually what things have in them - and yeh so how hidden stuff. But like look at that look how much fat is in that? [points to cereal] But yeah, it's useful definitely useful. I guess because you're faced with facts. So, you can't, and that's a good thing, so you can't go on pretending that you know 'this is kind of good for me' I mean things that you thought, I can't think of an example right now but, things that used to think we're good for you and it's like actually - like bread maybe"*

This minority of participants, who were all from higher social groups, valued FoP labels when buying something for the first time. Typically, consumers would compare, for

example, the fat level or the calorie count between two products and select the lower one when trying to be healthy. In these instances, the nutrient which was of importance to them was selected and the other nutrients ignored. The fact that instances when labels were referred to, involved only 4 women, all of which were from higher social groups, suggests that label use is exceedingly limited, and this must be influenced by social status.

One reason why the labels were predominantly only used for first time purchases was that many consumers believed that they had an innate knowledge of what is in the products they consume and thus checking of nutrients was unnecessary. This perception of instinctive or intuitive knowledge as to what the products contained was again only found in women of higher social groups. Yet there is some evidence that FoP labels are actually having a paradoxical effect on higher SES groups, who over-consume when confronted with 'healthy' labels (Crockett et al., 2014). From the quotes above it appears that simply having purchased something previously, makes consumers feel as though they ae aware of that products' nutrient count. This may be an area for future research to consider. What role does familiarity of product play in perceptions of health? Are FoPs seen as less relevant when the consumer is familiar with the branding of the product? The findings of this study suggest that the relevance of FoP labels is dependent upon the familiarity of the product, and this may be true regardless if the nutritional content of the product is known.

5.3.5 Impractical / Resentment

There were however, several who showed an immediate disliking of FoP labels. The following responses were taken from the consumers' initial immediate reactions to FoP labels. Following the shop, an item displaying a FoP label was selected from the

participant's basket, and the participant was asked to describe their immediate reactions to them. This extremely open fashioned method of interviewing allowed for a wide range of opinions to be heard, in contrast to previous studies which tend to focus on a specific aspect of label use. Commonly the disliking was due to the information being too complex or too detailed to make sense of, which irritated consumers (this is discussed further in section 5.3.7 *Confusion*). As can be seen from the quotes below, the information upon FoP labels often appeared to consumers as abstract and therefore irrelevant.

> ***Susanne (Social grade C)*** *"I'm trying to articulate why I don't... I just don't find the information... I find it deflating, I don't find it particularly helpful…7 grams of what? Of one 30g serving - I can't quantify that, I can't imagine what that looks like. And it's not important to me... it's not relevant because I don't know what to do with it."*
>
> ***Liz (Social grade B)*** *"It's hard to calculate it. It's hard to –If you're not aware of healthy eating in the first place and then you're trying to calculate the percentage of different things and the size of a pizza…you'd just to go and buy a pizza! You'd probably be like, I can't be bothered, and just pick whatever is easiest and cheapest."*
>
> ***Researcher*** *"How would you describe your immediate response to these?"*
> ***Max (Social grade B)*** *"Probably irritated... I just like, there is too much information. If I go to the back I know I'm going to get the facts. I suppose I just assume that everything on the front of packaging is designed to entice me."*
>
> ***June (Social grade D)*** *"It's a bit abstract but I guess as I said I don't think we would be – we don't watch how much sugar or how much of this and that and the other, unless we had to."*

For extracts above indicate that some women immediately disliked the labels due to the level of information provided. The large quantity of information left women feeling like

it was either too cumbersome to calculate, or not relevant to them. Although this sentiment has previously been noted elsewhere in nutrition label literature (Cruz-Góngora et al., 2017; Draper et al., 2011; Leek et al., 2015), this study uniquely explores some of the reasons as to why consumers felt the information was too cumbersome or impractical in section 5.3.7 *Confusion*. One of the very few studies which allowed consumers to discuss FoP labels in an open style, asked them to categorise their preferred qualities of a variety of label formats. Results indicated that consumers most valued the 'directness' of label format, as in labels that were least ambiguous (Hodgkins et al., 2011). This study adds to these findings by suggesting that UK consumers still do not regard the GD-TL label as direct and straightforward.

Another explanation for the disliking found here which is not reported elsewhere is the fact that previous FoP label studies tended to ask consumers to compare the UK's GDA-TL label format with other forms (Food Standards Agency, 2005; Hughes et al., 2008; Leek et al., 2015; Maubach & Hoek, 2010). This study suggests, that this may have led to an inflated perceived likability of GDA-TL labels. As can be seen here, when examined in isolation rather than in a comparison design, consumers do raise concerns with the GDA-TL format.

Other participants described an immediate resistance to being 'told how to behave' and felt irritated by the labels' message, as illustrated below. These women were resistant against yet another form of behaviour monitoring on the part of the Government. This initial negative perception at the presence of labels will undoubtedly influence how, and if, labels are engaged with.

> ***Helen (Social grade B)*** *"I do get irritated… by you know, there's this much sugar in this and there's this much sugar in that, and I think yeah so what? It irritates me because there's a lot of hype over it. A lot of hype. I think the premise behind it is good but it's like we are*

not incapable of understanding - like saying did you know your drink has this much sugar in it? I'm like yeah, I did know I'm an adult and I'm drinking it consciously! I think it obviously has a bearing because it's still in use… but it's like the calories - everything has calories so it's just about weighing up. Cucumbers have calories but if I eat a whole one I'm going to be more-full than if I eat something with sugar in it."

Alicia (Social grade: D) *"It makes me slightly cross that they're trying to warn me that this is a dangerous fatty food when this is peanuts and peanuts are not dangerous!"*

Joy (Social grade D) *"Haha they're telling me how to be like in a nanny state! Well I don't trust the government and I don't trust the supermarkets so I'm just as likely not to trust the middleman. I think they subsidize big businesses. They're all in cahoots with each other, the whole system... I'm guessing it's because somebody somewhere is trying to trick you"*

The quotes above represent some objections consumers feel towards FoP labels. Surprisingly, some participants found the presence of this seemingly helpful information to be irritable because of what it stood for. They are angered by the consistent message that diets are the individual's responsibility and dislike being advised how to behave. This finding provides support for previous work which found that some consumers hold a distaste for being advised on how to behave or what to eat, which results in them ignoring labelling and instead judging a product based on appearances rather than labelling (Enright et al., 2010).

One explanation for this response type could be linked to who the consumer believes to be responsible for the information. Health messages from the Government are often perceived to be "preachy, boring and too much like hard work" (Robertson, 2008, p. 7). As far as the author is aware, this is the first study to question where consumers believe

the information on FoP labels originates (discussed more in section 5.3.8 *Trust*) and consider how these perceptions influences label engagement. When discussing the practicality of these labels several participants responded in an almost defensive manner '*If I want to buy it I will!*' suggesting that the labels are interpreted as a command which can be ignored. If the FoP labels are perceived as yet another Government initiative, it could be off-putting from the start. Although this group of participants were in the minority, this does present a new finding and possible area to explore in future research.

5.3.6 Irrelevant

Aside from 'for someone else' (section 5.3.3) other prominent reasons for ignoring the FoP labels were that price or taste preferences overrode the consumer's desires to be healthy. Unsurprisingly, price sensitivity was more of a concern for those from lower social groups, this will be discussed in section *5.4 Perceptions as influenced by Socioeconomic Status*. The branding of products and habitual purchases were also provided as explanations as to why labels were disregarded. Many women found the labels impractical to use or were simply unsure how to make sense of them and for this reason paid very little attention to them. Participants were asked here '*Why do you feel you don't make use of them?'*

> ***Helen (Social grade B)*** *"because I'm a mum who is just so focused on what needs to be done every 10 minutes. I just think I do not have time".*
>
> ***Claire B (Social grade C)*** *"Because if I'm going to buy cheese I'm going to buy cheese... do you know... like I don't think, they could stop me. Tonight, we're having jacket potatoes tomorrow night we're having garlicy sausages, Wednesday night my hubby is out so we'll have soup leftovers, so... and I know what we're having for the rest of*

the week as well and... so yeah if they happen to have one more gram of fat so be it! I like the taste of it!"

Liz (Social grade B) *"It's hard to calculate it. It's hard to – If you're not aware of healthy eating in the first place and then you're trying to calculate the percentage of different things and the size of the pizza, just to go and buy a pizza!? You'd probably be like, I can't be bothered, and just pick whatever is easiest and cheapest."*

Alissa (Social grade: C) *"I just don't see how you would use that every time you went shopping, it would take you bloody ages."*

Susanne (Social grade C) *"I just buy what I like. I don't really pay an awful lot of attention to the traffic light scheme at all. Because if I want to doughnut I will eat a doughnut!"*

As can be seen from the quotes above, some women viewed the labels as irrelevant. Labels were found to be impractical due to the time and effort required to understand their meaning. This appeared to be exacerbated by the fact that labels broke down the products contents into four nutrients which, to the consumers, seemed excessive. Consumers have been shown to struggle to make sense of labels which include several nutrients (Black & Rayner, 1992), which is what the UK have opted for.

The quotes above also illustrate that participants felt that with all the pressures of being a mother and a wife and providing for the family, the likelihood of a label impacting upon their dietary decisions is negligible. Confusion as to what was meant by the labels was a significant issue which will be discussed in the following section. Others believed the information conveyed through the label was too detailed and they felt unable to make sense of it. The overarching reason for non-use here is that consumers did not feel that the presence of a FoP label would alter their behaviour.

Much previous research is dedicated to examining which label format performs best for consumer comprehension. For example, exploring which label design will allow consumers to be able to identify which products have higher levels of nutrients, and which products are less healthy. Yet what this research suggests is that, even if participants are able to do that, that level of detail into a products nutrient level, is impractical for the average consumer doing the average weekly shop. The implications of these findings are that future research should move away from demonstrating consumers' capabilities within labs, because in the real world contexts there are numerous confounding variables that aren't being accounted for.

5.3.7 Confusion

Every participant described some level of confusion when dealing with FoP labels. Confusion occurred due to a multitude of reasons which will be discussed below. The participants were asked to make sense of the labels in whatever way they saw fit. Of interest was how they went about this process and how the labels were subjectively perceived. This section addresses recent calls for research to explore why consumers lack motivation to use FoP labels (EUFIC, 2017). It also addresses confusion in a novel way compared to prior research, as will be discussed at the end of this section.

5.3.7.1 Percentage of What?

To make use of the percentages stated on FoP labels, consumers are required to visualise the amounts listed as a percentage of their daily intake. For example, if a product stated 12% fat, the consumer would have to put this into context of what other fats they had consumed that day. This also typically involves performing a calculation on the serving

size against how much was consumed. As can be seen from the quotes below, consumers were unsure that this calculation was required, more importantly, they were unsure what the percentage sign was even referring to. The mere presence of a percentage sign was confusing to many consumers.

> ***Max (Social grade B)*** *"How do I know if they're per cake, or per 100g? They might use a different measure or amount per product. So, I still might end up confused I don't know why it's so confusing there's colours and they're in blocks but, it should be easy… I don't like lists and tables, and percentages and numbers just gets confusing… you can see how they try to simplify it but emm... is it the same on all packs?"*
>
> ***Martha (Social grade E)*** *"So basically 30 grams of peanuts will contain 31 percent fat which is obvious because they're really fatty, they are good for you though it's a kind of good fat, they have very little salt and sugar is so it's good, 1%. Saturates 1.8% I'm assuming that's not too bad…*
> ***Researcher*** *"Do you know what the percentage is of?*
> ***Martha (Social grade E)*** *"Percentage of… that would be good to know! God knows actually, God knows, probably some other weird stuff. No, I'm not sure."*
>
> ***Sammy (Social grade E)*** *"Well it sort-of shows you quite clearly but it's not entirely clear to me what the percentages mean. Like is that % of your daily allowance? Or is that a % of what's in the tub? That part isn't clear to me. But from looking at it, it's a product you shouldn't have all the time anyway cause it's got the yellow label for sugar."*
> ***Researcher*** *"OK so the colours help you in that sense?"*
> ***Sammy*** *"Yes but the percentages no – just realised I've no idea what they mean! [laughs] I can see at a glance red-yellow-green, you know… how much has it got of each, and that will help me make a quick decision rather than having to get like a qualification in*

nutrition and trying to figure out maths and whatever. That's just too much!"

Fiona (Social grade B) *"So what's that 1% of? Your daily recommended intake? What is the percentage again? Five times the number… that doesn't add up, I've forgotten the percentages. It can't be 1% of your... Hmm what is it? To be fair I've never really sat and thought in the percentages."*
Researcher *"So is it the colours that you use?"*
Fiona (Social grade B) *"Yes, the colours definitely. Like I say I don't pay a huge amount of attention to the to the amounts… the whole calculations in grams - it's not my forte…I hadn't actually looked at the actual numbers which seem slightly confusing"*

As can be seen above, when asked to make sense of the labels, consumers began to reel off the numerical data without attempting to put this into context or explain what these figures actually suggest. When asked outright what the percentages refer to, many were unsure. The last quote by Fiona was particularly revealing because she was one of the few who had discussed how favourable she is of these labels and had claimed to use them regularly. Yet evidently found them challenging to discuss. If consumers are unaware what the percentage is referring to, it could result in misinterpretations and unintended consequences. More likely however, is that the perceived confusion would result in avoidance behaviour. If even the experienced consumer who claims to use these labels cannot decode the informational content, then who are they for? This study, unlike others, has provided consumers the opportunity to explain their confusion with regards to the label content.

5.3.7.2 Terminology Issues

One surprising issue which arose due to the terminology used on FoP labels, was participants perceiving the *reference intake* (RI) to refer to a target which should be achieved, rather than a maximum value which should be avoided. As in, consumers perceived that if a pizza contained 20% fat of your reference intake, you would have 80% of fat left to consume that day. Or if one pizza contained 20% fat, this was read as a suggestion to consume another 4 pizzas that day. This led to yet more confusion because consumers felt this was an unlikely scenario. This is fundamentally entirely the opposite message from what the reference intake had intended to convey. Reference intakes are supposed to indicate the *maximum* level of nutrient to consume per day.

> ***Claire M (Social grade B)*** *"So that's 5g of sugar on my toast, let alone the sugar that's in the bread plus the fat that's in the butter, plus the butter on the bread cause I do that to [laughs], but then it's still telling me I've got another 20 times that that I'm allowed to eat per day. Is that what its telling me?*
>
> ***Researcher*** *"So are these figures something you could use to make a decision?"*
> ***Erin (Social grade C)*** *"I don't feel like I would know how…these percentages at the end… well not that it's confusing but it's difficult to keep up. For example, this is 1% of my daily intake, so I can have 100 portions of that? Like that thing, would I go to the supermarket and put together products to make 100%? No, I wouldn't do that. The percentage might be helpful for others but for me it's more like a puzzle than helpful."*
>
> ***Researcher*** *"Do you know what your daily intake actually means?"*
> ***Claire B (Social grade C)*** *"Oh well it's a government guideline basically saying you should be eating 30 grams of fat per day or something... and... I don't even know if that's what it is -is that what it is?*
>
> ***Helen (Social grade B)*** *"Oh yeah and when are you going to work that out? Like oh man I have 99% of peanuts left to eat..."*

Researcher *"What do you think that 20% is referring to?*
Leanne (Social grade D) *"Are they saying that's 20% of your daily calorie intake?*
Researcher *"Do you find that information helpful?"*
Leanne (Social grade D) *"No, I'm never going to be like ok now onto my 80% for the rest of the day!"*

Researcher *"You mentioned daily allowance – what do you mean by that?*
Liz (Social grade B) *"Your daily calorie intake. So, 2000 or a woman and 2500 if you're a man."* →*confused RI with calorie daily allowance*

Perceiving the labels in this way is particularly dangerous since it would suggest consuming 100% of each nutrient per day, as in a much higher value than is actually recommended. This appears to be an unintended consequence inherent in the current design of UK FoP labels. Some scholars did argued against the use of reference intake as a guide – because they do not distinguish between recommended maximum and minimum amounts (Lobstein et al., 2007), and this study provides concrete support for this concern. The Government guidelines explicitly state that FoP labels should not mislead consumers in anyway (The Scottish Government, 2013b), yet if the percentages are read as targets or goals, then this is precisely what is happening.

The last two participants in the quotes above have confused reference intake with calorie intake. Each nutrient has a daily recommended intake, for example 25g of sugar per day. However, the participant here believed that reference intake referred to calorie intake which is 2,000 for women and 2,500 for men. Conflating reference intake with calorie intake only serves to demonstrate the extent to which consumers are misreading the information presented. Although the focus of this study was not to be concerned with objective understandings, it becomes clear from these quotes that misunderstandings led

to subjective confusion around food labels. Typically, it is not as though consumers believe they are able to use the labels and then make errors, but instead from the initial engagement with labels they feel unable to compute. The quotes above demonstrate that the consumers are well aware of their limited knowledge in deciphering these labels, and this feeling of uncertainty leads to avoidance.

Despite the fact that each FoP label explicitly states what the percentage is referring to – '*percentage of your reference intake*', misinterpretations were commonplace. 'Reference intake' refers to the maximum amount of nutrients that should be consumed per day. Yet despite this, the wording still leads to consumer confusion. The use of this unfamiliar terminology meant that some consumers avoided engaging in discussion about its meaning altogether. As can be seen in the quotes below, not knowing what reference intake meant was off-putting.

> ***Researcher*** *"Ok so you're unsure what the figures refer to but does this sentence here make it clear at all? [points to 'percentage of your reference intake' on packet]"*
> ***Leanne (Social grade D)*** *"Not really. I don't know what they mean by that to be honest"*
> ***Researcher*** *"what do you think it might be?"*
> ***Leanne*** *"Like the percentage in the pack? I don't know."*
>
> ***Max (Social grade B)*** *"Intake is familiar but not reference intake. Reference has hundreds of meanings..."*
>
> ***Dani (Social grade D)*** *"I have no idea what reference intake means*
> ***Researcher*** *"Can you guess?"*
> ***Dani (Social grade D)*** *"Something scientific?"*
> ***Researcher*** *"Yes [Laughs] they have recently changed 'guideline daily amount' -which you mentioned earlier- to reference intake"*
> ***Dani (Social grade D)*** *"I guess something to do with – if I didn't find any other information on the recommended daily allowance on the label – then I guess, and I had to read the print on the side which I*

normally don't do, then I might come to conclusion that that's what they mean… but it's not obvious that it's that at a glance."

Erin (Social grade C) *"So this is the sugar and it contains 6% of your daily sugar. But is that sugar you should… or is that the average that people do intake?"*

Researcher *"What about these figures here do you know what they're trying to tell you?*
Helen (Social grade B) *"nope!"*

In the cases above, consumers simply did not know what *reference intake* meant. This results in all the other figures and percentages on the labels having no concrete meanings, since they are dependent upon the reference intake. And thus, consumers felt that their interpretations were guesswork. Benelam (2013) predicted that the change from GDA to reference intake (RI) would cause yet more consumer confusion because of the widespread presence of FoP labels already in place, and this study goes some way to support that. The term GDA was changed to RI since GDA's differ between men and women yet there is only one stable RI's. Buckton, Lean, and Combet (2015) showed that complicated terminology in health campaigns leads to misunderstandings by Scottish adults, and this was particularly significant for those of lower social groups. This study highlights the need for the general public to be consulted on which terminology should be used, especially in public health campaigns.

Finally, the terminology used to describe the units of measure also caused confusion. For example, the fact that each label contains grams, kcal, kJ, energy displayed in two formats, reference intakes and per 100g, meant that consumers were unable to visualise what exactly was being referred to or have a general sense of the overall information. The quantities were abstract and difficult to process, as highlighted below: -

Sammy (Social grade E) *"I don't think that – I mean, those tell you what you're getting per portion, per oatcake or per 100grams of*

whatever… The only thing that might be useful is when it's for something that is less obvious so if you look at a pack of biscuits and it says fat per biscuit you know exactly what you're getting per biscuit, but when it says per 100g – visually figuring out what 100g is quite difficult. I mean I have no idea what 15g looks like! Not a clue!

Kirsty (Social grade C) *"I don't even know what a tablespoon is in grams! I just assume 15g is a couple of table spoons?"*

Anna (Social grade E) *"OK* so here sugar is *very high, its 9.1g, but I don't know what that is but it's probably quite high"*
Researcher*: "What do you mean by you don't know what it is?"*
Anna *"Like I don't know what 9.1grams is. I don't know how much that would be. I don't ever cook things like that"*

Joy (Social grade D) *"Orange is not really healthy but I think green is. Green is going to be healthy because it's got the least sugar so, or fat, but I don't even know what the other thing is [referring to energy]."*

Kirsty (Social grade C) *"But whether people actually use them… well it says here percentages/grams whatever. Like it usually says it out of 100g but it says here out of 15g so all of the sizes are different, so I think that could be confusing for people."*

As the quotes above indicate, the quantities used on FoP labels were clearly confusing to the consumers. Yet is it the EU which permits multiple ways to display nutrients – per 100 g or per 100 ml and, if desired, per portion, where the portion must be clearly stated on the pack (European Union, 2011). Several participants made suggestions as to how to better convey the FoP labels information – for example by displaying sugar quantity as sugar cubes. Ultimately, consumers were expressing the fact that as it stands, the information displayed on FoP labels is arbitrary and impractical.

In reference to the last quote above, Joy is assuming that green signifies low sugar or fat. However, the green could be used to refer to saturates or salt. Joy mentions that she is unsure what the 'other thing' is. What she is referring to is energy. Energy in FoP labels is always displayed with a white background unlike the other nutrients which are colour coded. This was picked up by other participants as being confusing which is discussed in section 5.3.9 *Perceptions of Colours*. One study conducted in Australia, found that when asked about energy specifically, consumers, particularly those of lower SES were unsure of its meaning and this led them to select energy dense foods (Watson et al., 2013). As far as the author is aware, no research has yet to explore consumers' perceptions of energy in terms of it appearing white on FoP labels, and how this is interpreted by consumers. Thereby making it an ideal area for future research to explore. What are the implications of displaying energy count as 'white' alongside a multitude of other nutrients being colour coded. It is likely that there will be a subgroup of consumers who use 'energy' count to make judgments about products, as has been found within this study. Therefore, research is required to assess how these consumers are impacted by the colours used on FoP labels.

Lastly, several consumers suggested that if the information was presented in one format, or in a more visual format using an icon, for example sugar cubes, then the information would be far more digestible, as per below.

> ***Lindsay (Social grade B)*** *"So something like – if it's a non-standard measure, like if you're saying 15g of peanut butter is this... if it is a teaspoon – have a picture! Show us if it's like a flat teaspoon or heaped teaspoon. They're two very different types. Something very visual."*
>
> ***Martha (Social grade E)*** *"Well you scan the label of the product and it shows you how much sugar is in it in little sugar cubes. So, I think that would be better information than what you see here because you see how many cubes and you think oh my god do I really eat so many? Whereas here you just see the number and think less than 1% why*

not? It needs to be shown better visually so people know or even bigger so it's like 'have a look at me'. Look at what you eat! On some products it says that girls should have 2000 calories and guys should have 2500, maybe they should say something like you need this amount of salt daily and look how much is in this. To put it into context.

Max (Social grade B) *"I think that's missing is a tiny little legend of just showing a traffic light. [Laughs]. Just a tiny traffic light! And something in the corner that says your recommended daily intake.*

Claire B (Social grade C) *"Look I don't know if I'll ever use them but they could have something like –rather than saying here is 15 – they could say 1 teaspoon or one tablespoon, things that everyone knows. And say 1 teaspoon provides you with, -and this would probably reduce the amount of sugar you're eating-, provides you with 20% of your daily sugar intake or whatever it is.*

These quotes help to paint a picture of consumers perceptions of FoP labels as confused and misguided. They suggest that the numerical data should be put into context for example by stating how much of each nutrient is recommended per day, despite the labels already attempting to convey this information. Other suggestions are for a key to be used to clarify the meaning of the red, amber and green colours. These sorts of insights should be used to form policy. Consumers are the intended users of FoP labels and their interpretations should be given stronger weight. It is evident from the lack of qualitative research within the field of nutrition labelling that this is not the case.

5.3.7.3 Numerical Overload

The sheer volume of numerical data stated on a FoP label was often overwhelming and off-putting for consumers. When asked 'what does the label tell you about the pizza?' it

is evident from the quotes below that the vast amount of numerical information resulted in a computational overload. The following outlines a typical encounter with a FoP label from the participant's perspective.

> ***Liz (Social grade B)*** *"Are they saying that 100g of that pizza contains 209kj so that means that pizza contains over 600 calories?... Well that's even more confusing. Because then its saying typical energy value per 100g is 209? So, then that's 375. So, and 209 times by 3 which would make say 650? – but then they're now saying up here [Points to another part of the FoP label] that its 392… Boy this is hard work just to buy a pizza!"*
>
> ***Leanne (Social grade D)*** *"OK so if I was to look at that I'd say fat is 17%, saturates is 21%, sugar is 11 and salt is 32 and it says its half a pizza here – as if you're going to just leave half! Right but yeh that's... I don't know why that would be important to anyone"*
>
> ***Researcher*** *"Can you try to summarise, overall what this is telling you in terms of the sugar level in this product?*
> ***Claire M. (Social grade B)*** *"It's telling me that it's a medium amount, like well not like medium but like, well like yeh a medium allowance of sugar in one portion, not in the whole jar obviously, I assume – yeh one serving... So, it's telling me 'me oh my god you're going to die of heart disease because you've got so much fat and quite a lot of sugar' but it's not going to kill you… But hang on, this is 1%, 100g of sugar!? But if that's saying 1% of sugar is your daily intake –it's saying 100% of your daily intake is 100 grams of sugar –that sounds like a lot! So basically, it's telling me this is 1% of your daily intake is 1.1g which is 1% so we can say 100g of sugar per day is your daily allowance and that's healthy for you?... Well it seems like a lot! So 340g in the thing, so there's like a 15-gram portion, so about 24 portions you talking about? … Well it means nothing really. Looking at that label then, it means nothing if that's what I'm meant to do."*

These extracts provide a unique insight into how consumers at least try to 'make sense' of FoP labels. The standard FoP label contains 12 distinct numbers, each nutrient in grams, and as a reference intake, as well as the calorie count again either in grams or as a percentage. In addition, the serving size it presented typically as either half the pack, per slice etc. Trying to navigate this wealth of numerical data was challenging for every consumer interviewed. Erroneous calculations were frequent and the general perceptions of having engaged with labels in this manner was a feeling that it wasn't worth the hassle. Claire's quote demonstrates that when describing the colour, she was comfortable, but when prompted to engage with the numerical content, this changed to confusion and irritation. Although the colours can provide an at-a-glance measure, if the numerical data is unusable it begs the question why is it there? Could it be doing more harm than good? In 2005, Cowburn & Stockley identified to 19 studies which highlight the problems consumers face when converting nutirional information. This study supports these findings. In addition, it demonstrates that despite all of the research dedicated to deciphering which labels performs best, and a unified label format eventually being enforced across the UK, consumers are still perplexed by their meaning.

Confusion was also caused when expectations were not met. For example, on some products 10g of sugar would be coded amber and on others this would be coded as red. The reason for this difference is that it depends on the quantity of sugar that that particular label is referring to, this may be per serving or per 100g for instance. When comparing two products, this change in reference point was often overlooked or caused confusion, as can be seen below.

> ***Martha (Social grade E)*** *"The first thing I'm looking at is what is red. Here it's salt and fat so I would choose this one because that has 14% of fat and it's red - yeah that's not good. And this one has only 17%. But then you wonder why is this one red and that one not red even though that one has a lower percentage?*

Researcher *"Why do you think that might be?*
Martha (Social grade E) *"Well that's what I'm wondering because they are the same amount - 400g, and that one has less calories. This is strange I would never have thought a takeaway Alfredo would have less than this one made in Italy."*

Max (Social grade B) *"It states this is Amber but it's only 1% so how does that work? Well 1.1 gram and well… I can't do any maths right now... I wouldn't trust this product anyway."*

Liz (Social grade B) *"This is terrible. It's just full of salt. Full of salt. That should not be a yellow no way – that should be a flashing red!*

Naturally, consumers do not need to understand the process behind the FoP label colouring system, and what causes some to be red and other amber. The goal is simply to act as an at-a-glance additional piece of information when choosing foods. However, if consumers perceive 10% of fats to be associated with the colour red in some circumstances and amber in others, it can lead them to believe the system is flawed or contains errors, as stated in the quote above. This notion also reduces trust in labels. In some instances, only two colours were used on FoP labels rather than three, this again confused consumers as to why that would be the case. This is explored further in section 5.3.9 *Colour*.

A feeling of confusion towards FoP labels has been long noted within the literature (Food Standards Agency, 2005; Leek et al., 2015). However, contributions have been made here in the form of providing insight and clarity as to *why* consumers feel so confused. In addition, this study allowed consumers to express how they felt around the confusion, rather than simply stating it exists, this study explored what impact that has for consumers. Some reasons include misinterpreting or not knowing what certain terminology means, conflating certain nutritional terms, and feeling overwhelmed with the volume of data. Much research reports positive opinions towards FoP labels, however

these tend to be derived from studies which question consumers in surveys or in lab conditions about the preferred label from a selection of labels. When looking in isolation, and importantly in context, it becomes apparent that confusion remains rampant.

Leek, Szmigin, & Baker (2015) offer one of the few studies which specifically attempted to understand UK consumers confusion around FoP labels, yet again, their research methodology involved label comparisons. Confusion is discussed in terms of consumers making mistakes when interpreting labels, for example by miscalculating which label represents the healthiest product. This section makes practical contributions by focussing instead on subjective perceptions of confusion in relation to food labels. It has been shown here that the consumer's own belief in their ability to decipher the labels also impacts their motivation to use or engage with them.

5.3.8 Trust

One issue which arose spontaneously following observations, which is often omitted from lab-based experiments, was consumers' mistrust in labels. Since this issue was raised by many of the initial participants, a question regarding trust specifically, was added to the original set of interview questions. Semi-structured interviews enables this style of adjustments to questions to be made during the data collection process (Bryman & Bell, 2015).

A lack of trust was high amongst participants and resulted in the labels being ignored. Some participants believed that the information on the front of pack was not as trustworthy as that on the back of pack. Thus, would only rely on back of pack (BoP) information to guide their choices. When probed as to why this was the case, the responses generally involved the fact that BoP information was more comprehensive and allowed

for a more thorough investigation of the product's contents, although it was also said that this information was rarely used either. However, some women viewed the use of colour in the FoP information as a distraction that was attempting to sell the product. This echoes the findings of previous research (Malam et al., 2009). Interestingly, they viewed them along the same lines as health claims, as though a selling feature of the product.

> ***Max (Social grade B)*** *"No I don't actually [use labels] that's quite funny. I'd probably go to the back to the nutritional information that's where I'd would go probably. Although I do recognise them so it's funny that I don't use them. That should be an easier way easier information to use but I don't, for some reason I always go to the other information, I don't know why.*
> ***Researcher*** *"Why do you think that might be?*
> ***Max (Social grade B)*** *"Maybe I don't trust things on the front, that say little things on the front because then… I don't know… but I think I have a kind of natural distrust or anything colourful on the front of packets. So, as I say I tend not to look at them, also I think it looks like they could pick out a bit of information and... they do that all the time. They say this is really low fat, but don't tell you it's high in sugar.*
>
> ***Leanne (Social grade D)*** *"I just ignore all that, you can't trust any of it - like low fat or whatever, you don't know where its came from.*
> ***Researcher*** *"Do you mean like you actually don't believe the information here? [Points to FoP label]"*
> ***Leanne (Social grade D)*** *"Well I would say that's the same, like one says it in writing 'low fat' and one says it in numbers, but either way I don't believe any of it! You can't these days"*
>
> ***Kirsty (Social grade C)*** *"I would only look at the back if I wanted to know what was in it – like palm oil or whatever [laughs] but yeh I would look for the ingredients rather than what's on the front."*
>
> ***Joy (Social grade D)*** *"Well I don't trust the government and I don't trust the supermarkets so I'm just as likely not to trust the middleman.*

I think they subsidize big businesses. They're all in cahoots with each other, the whole system... I'm guessing it's because somebody somewhere is trying to trick you"

Susanne (Social grade C) *"No I don't trust them… I don't particularly, I don't feel those labels are relevant to me because I have more information than that. I enjoy food and I enjoy cooking. Gosh I don't know… I didn't expect to feel so cross about this! Actually, this happened recently: my Father-in-Law was quite unwell so I popped into the shops and bought him two or three meals that his wife could quickly heat up because she wasn't eating because she was looking after him. He was struggling to keep weight on because he was quite physically unwell but, in the end, it didn't really matter - we just bought her a few that looked tasty. But anyway, thing is, I wouldn't have used that information, I would have just checked the back to see what's in them."*

Researcher *"Why is that - do you trust the information on the back more?*

Susanne (Social grade C) *"Yes I think so. But I don't know why I know it's the same people putting the same information on the box!"*

Claire M. (Social grade B) *"Do you know what I've never actually... Let's say I want to know if there is a lot of sugar in this, or something, I would look here first [points to back] and see so sugar is like the 8th listed item... or whatever was important at that time. Like how much oats or... is this really an oat cake, I would at that. [Points to bottom of pack]"*

Helen (Social grade B) *"This has happened before I bought something that I thought was amazingly healthy, it was a cranberry topped snack type thing, I thought that would be really healthy, that would be really nice. But when you drill down into how much calories- like little discs like molten type things with a little bit of cranberry and coconut on it. I thought that looks healthy, I thought that's got to be better than chocolate. Turns out no, I would have been better with a Cadbury's mini fudge! You just can't trust any of it."*

> ***Martha (Social grade E)*** *"Of course they show you this has good fat and good sugars and good salts but when you turn it over - like I can't even read this Maltodextrin? What is that? Exactly. You see 'soya' and 'eggs', yeah ok, but then potassium - what is that? Even if it says low fat and no artificial stuff… you look at the ingredients and you just wonder what's inside."*

In analysing the quotes above, it's clear a myriad reason exists as to why trust in FoP labels is lacking. Consumers felt a deep resentment and untrustworthiness towards the food industry as a whole, and this appears to seep into the acceptability of FoP labelling. As one participant states above, the colours reminded her of something colourful trying to catch her attention and sell her more unwanted products. Other women discussed the mistrust in the food industry due to its incessant promotion of junk food. These findings are supported by previous research which found that perceptions of the food industry affect consumer preferences about food choices as a whole (Bauhardt et al., 2015).

A systematic review exploring trust in food labelling exists (Tonkin et al., 2014), however the studies reviewed cover a wide range of labelling, from genetically modified, to meat safety. Trust in the UK's FoP traffic light label specifically, appears to be an issue which is generally overlooked. One that did look at reactions to FoP labels found that almost half of participants (n=149) viewed them as "just another advertising tool to sell more products" (Singer et al., 2006, p.97). This sentiment is echoed in the quotes above.

Other reasons why consumer's trust in labels was low, was due to the idea that certain ingredients were 'hidden' within products, particularly sugar. Hidden sugars and anti-sugar sentiment were mentioned by the majority of the women in this study. Consumers felt mislead by these issues and this impacted upon their beliefs of labelling. In a similar vein to the shopping environment (section 5.2 *Supermarket Environment*) evoking feelings of mistrust, issues regarding the food industry also created these feelings. Trust in the labels was further eroded through misleading serving sizes upon packets. No

questions were directly asked about serving size. Instead this was an issue which was repeatedly and naturally raised by consumers as a point of contention.

> ***Kayleigh (Social grade C)*** *"It would be easier if it just told you it was for what's in the bag none of this adding up stuff. It's the same with crisps and things like that. Like my boss – she was constantly on diet and it had to be under this or under that, and all of them were per serving not per bag!"*
>
> ***Helen (Social grade B)*** *"They'll tell you it's in 15g and there's no way a serving is 15 grams by the time you've spread that on your bread you're up to about three of those. So, then I would have to multiply everything by what I use. So, it has to be 15 then 20 actually 22 times that.*
> ***Researcher*** *"So you'd times the quantity of fat by 22 to work out how much is in it for you?"*
> ***Helen (Social grade B)*** *"In order to work out how much is actually in the product I would work out how much is there and how much is that so 15 grams, and how much I would use per serving. Which is why I don't use them!"*
>
> ***Lorna (Social grade A)*** *"I think it's a little bit obscure or sneaky sometimes about what a portion size it. Like sometimes you get 3 oatcakes in a little packet and you'd kind of assume that a packet refers to a portion size. But actually, this might refer to a cake, so I think that can sometimes feel a bit sneaky or not be as transparent as they could be in terms of helping us understand the portion size.*
>
> ***Martha (Social grade E)*** *"You can look at a label and think all this is quite healthy it's quite small and then you think it's only half of the packet like what happened with that pizza! Maybe they should start showing the whole packed with everything. Not for 30g or 40g but the whole packet! Because don't tell me you'd have half of that… you'd have it all, it's so small!"*
>
> ***Liz (Social grade B)*** *"Well you know, you might buy this pizza because of the colour coding, even though this has less 17% fat and*

18% saturates compared to this one, but then this is a bigger pizza! That's why I was looking at the sizes first cause it always goes like half a pizza or a quarter of a pizza. You've got to look out for how much is there –is it a slice or whatever. But they're not the same size pizza so it's hard to calculate."

Impractical serving sizes resulted in consumers not trusting or using FoP labels. As is discussed in section 5.3.7 *Confusion*, the unclear numerical data in general led to avoidance behaviour. Consumers perceived this data as an information overload and if unable to understand it, consumers often made comments of not trusting it. The UK remains one of very few countries to present FoP label information with such numerical data.

Both the UK Government and EU policy explicitly state that FoP labels 'should not mislead consumers' (European Union, 2011). Yet in this study, only three of the 26 participants noticed when comparing FoP labels on two products, that the serving size was different. Participants were asked to compare two pizzas and the vast majority did not notice that one pizza's FoP label referred to half of the pizza, and the other's label referred to the entire pizza. Considering that this is the most common way in which labels are used, it is extremely worrying that consumers were so mislead. The implications of these findings are significant - confusing labelling may hinder a consumer's right to make an informed decision. Here, contributions have been made in terms of providing some insight as to the reasons why trust in labels is low. Future research could expand on this area by examining what sorts of factors influence consumer's trust in FoP labels.

5.3.9 Colours

The literature review revealed that no previous studies had directly questioned UK consumers about their interpretations of the colours on FoP labels. Consumer's interpretations can be implied however, for example by asking consumers to select the healthiest product using the colours on FoP labels. Consequently, it is often assumed that consumers can correctly interpret the meaning of the colours red, amber and green on food labels. This belief also stems from the fact that these are widely used colour coding systems – on traffic lights, on danger zones etc. However, despite the wide use of these colours in everyday life, research should consider how they are perceived in the context of food labels. A surprising high number of women in this study did not find the colours of the GDA-TL label immediately significant. When asked to interpret the label in whatever way they saw fit, several did not mention the colours unless prompted with questions such as "*Do the colours mean anything to you*?". As can be seen from the quotes below.

> ***Researcher:*** *"Do the colours help in your understanding at all?"*
> ***Erin (Social grade C)*** *"Not really I see that there are different colours - Maybe this one is higher than the others but I don't know… I don't get it at all. If I had to guess then this would be bad and quite high, it kind of alarms you to check your portions in the rest of the day? Something like that?"*
>
> ***Researcher*** *"And what about the colours? Do they mean anything to you?"*
> ***Amanda (Social grade D)*** *"Haha well red is bad and green is good right? But I never look at that and think oh this part's good and this part isn't. What good is it to know that… like what if its half red and half green, then what?"*
>
> ***Researcher*** *"It's interesting that you didn't mention the colours at all. Do these tell you anything?"*
> ***Max (Social grade B)*** *"Oh yeah, oh yeah that didn't even register –*

what the colours mean. Yeh I've been looking at these and the oat cake ones and haha no... didn't think about it. So, is green good? Well now I would assume that green is good because you said traffic lights but, in all honesty, I totally did not realise traffic lights. That is what you think when you think traffic lights but I just didn't..."

Claire M (Social grade B) *"I didn't really think about the fact that they're different colours I was looking at the numbers. It was only when I was seeing the associations a child might make that I realised what they might mean but it wasn't immediately obvious to me."*

Max's quote above, mentions that the researcher had used the term 'traffic light' which in turn primed her of the intended meaning of the colours. Luckily, Max was one of the first women interviewed and having noticed this error, the researcher refrained from mentioning the term throughout the subsequent data collection.

In previous studies, where the GDA label format was compared to those displaying colour, consumers were found to favour colour (Food Standards Agency, 2005; Gorton, 2007; Grunert & Wills, 2007). However, this comparison style of research makes the colour prominent. As can be seen from the quotes above some consumers do not initially remark on the colour at all. Each of these consumers focused their attention to deciphering the numerical content and consequently initially overlooked the colour aspect.

One reason for consumers reacting in is way may be due to a fear of doing calculus or an anxiety around numerical data which ultimately results in a panic and consumers focusing on the numerical data rather than the bigger picture (Hunt et al., 2015; Rothman et al., 2006). However, when prompted to consider the colours, the participants were able to grasp a sense of their general intention – namely that green signifies healthy and reds less healthy. This would suggest that GDA-TL labels are able to serve their designed purpose,

yet significant confusion exists as to the meaning of the colours in terms of the behavioural response they intend to elicit. This will be discussed in the next section.

5.3.9.1 Interpreting the Colour Scheme

According to The Food Standards Agency (2016) the colours within the traffic light labels have specific meaning, as per below, Figure 21. The colour red is meant to signify a high level of nutrient, amber a medium and green a low level, and each of these correspond to desired behaviours.

- Red on the front of a pack does not mean you should not or cannot eat it, but you should try to keep an eye on how often you choose these foods and how much of them you eat. A diet with fewer reds can help you achieve a healthier diet.
- Foods with amber are neither high nor low for that nutrient. Foods with ambers help you balance your diet; just try to include a few green ones too.
- Green means a food is low in that specific nutrient and you may wish to avoid overconsuming to improve your diet. The more green colours, the healthier the choice, but you don't have to eat only green colour coded foods. Including a few ambers and reds can be part of a balanced diet and will help you to get all the beneficial nutrients you need.

Figure 21. Extract of Revised front of pack nutrition labelling guidance, Food Standards Agency, 2016

The extract above clearly states that colour red does not signify *'should not eat',* and yet that is precisely what the majority of consumers percieved it to mean. The threat of danger, and being *'bad'* were reocurring themes that emerged when participants considered the meaning of the red labels, as can be seen from the quotes below. The majority of participants did have crude understandings of what the colours denoted – namely that green signifies healthy and reds less healthy. Yet when asked to expand upon this, there were marked differences in how these colours were interpreted. For example, the women below viewed the red as a helpful warning sign: -

Fiona (Social grade B) *"Well I guess it's like traffic lights isn't it so the red would mean warning. Yeah it certainly means to me that this should just be a treat and should only be an occasional you know… definitely only once a week."*

Liz (Social grade B) *"I have looked at them before, but I can't remember what for. But I know like the red has the higher content and that's where you need to stop and think, the green is ok, and the white is in between. Is that right? Well I think the red has a higher content and that would be like stop and be aware"*

Roisin (Social grade B) *"Ah well yeh, other than I think it's like a traffic light system isn't it? So like orange, red and green. Well I think that red particularly in this context is almost like a warning colour. Yeh red is like my favourite colour but I'm very aware that in this context it's a warning sign. I think green would have an association with health and being good and go. So, I think that's what they were going for, as well as being familiar from a young age, it's also got very clear connotations of like stop – bad, green good, go, and then a meh in the middle. So that's what I thought they were communicating and also the fact that green is also associated with health and positivity. I think lots of shops and branding uses that. So I think that jumps out as being oh ok that's better. But I definitely see the red as being a warning, be careful of this."*

The quotes above demonstrate how some women perceived the colours as a useful guide for behaviour. In contrast, the quotes below reveal that other women perceive the colours as a command, in an almost controlling sense: -

Joy (Social grade D) *"Well I know that fat at the end is there, and if it's red its high. If I was going looking for a ready meal, which I hardly ever do, but if I did, if it had a red, I wouldn't even touch it. If I saw lots of green and lots of orange I would think all that's really healthy I'd have that."*

Researcher *"And what about the colours?*

Kayleigh (Social grade C) *"Well the green is good. Orange is a bit bad so you kind of need to watch what you're eating for the rest of the day -things that have sugar and salts in them. Cause you don't want to be eating too much of what you're not supposed to… Orange again if you're eating something that's a bit mixed with whatever – a bit of something, is alright. Too much isn't... it's hard to [looks uncomfortable]*

Researcher *"That's alright we're just trying to understand what people think of these. What about the colour red?*

Kayleigh *"Obviously don't eat it."*

Researcher *"Has there ever influenced you do you think?"*

Kayleigh *"No."*

Researcher *"So if red means bad – does that mean or once a day, never eat it or avoid it or what do you think they're trying to tell you?"*

Max (Social grade B) *"Don't know. Just don't know. Ok well even if this was saying bad, bad, bad with red and– but I mean even the oatcakes will have a red sign but these aren't bad! So there's a difference between, I don't get it, I don't know if it's easy for people, I doubt most people even use it at all.*

Susanne (Social grade C) *"Well if I see a red I think oh what's that? And if it turns out that it's quite a lot of sugar then I think that must be tasty…And red to me probably means avoid this product… It makes me slightly cross that they're warning me that this is a dangerous fatty food when this is peanuts and peanuts are not dangerous!"*

Martha (Social grade E) *"You have like three different colours on the products – a yellow, orange and a red and you have this for each different - for sugar, fats and salts. And it depends on the colour. So if it's red there's a lot. And then I wouldn't eat it. It's red so obviously not good. Orange has… well it's one step up from the green -it has more than you really need, it has more… it has a higher percentage of sugar or fats than you need in this 30g. And green is obviously good."*

Researcher *"What about the colours do they mean anything to you?*
June (Social grade D) *"Well red is obviously danger! Avoid! Oh no 10% that's not good. And orange is kind of middle of the road, verging on dangerous so but not quite there yet. There's no green so its obviously no that good. So yeh this is an ok middle of the road type product.*

Nikita (Social grade C) *"I'm not sure actually. Oh because in this case green is the lowest? I think of green as for vegetarians and its healthy and good and red is for danger... I could be wrong. Do they give you the colour coding anywhere? No, but they do give you the nutritional content, weird."*

Claire B (Social grade C) *"If it's red don't buy it? Is that what it means?"*

The quotations highlight a contrast in perceptions of colour, which is significant. These quotes provide some insight into the inferences that are formed when consumers perceive the colours on FoP labels. To date, very little is known about what inferences people make when processing FoP label information (Grunert & Wills, 2007; Kleef & Dagevos, 2011).

In the quotes above a few women claim that a red label means they wouldn't eat it, which is unlikely to be factual since every participant purchased products containing red labels. However, these quotes serve to demonstrate how the red colouring is interpreted – as a command that they should not be eating these foods. This was not the desired intention of FoP labels and critics of the traffic light system predicted that this would happen, that the colour red would interpreted as 'avoid' rather than 'reduce' (Burrows, 2016).

The impact of this finding is noteworthy. The Health Belief Model, which was specifically designed to explain why some individuals take action in response to health campaigns and others ignore them, proposes that behaviour is shaped by beliefs about threats (Rosenstock et al., 1988). This would suggest that those viewing the red labels as

a warning sign may be more likely to take heed. Whereas those that view it as a command *to be avoided*, which is altogether impractical, consequently ignore it. Most participants in this study mistakenly perceived the red colour to signify that they should avoid that product. Grunert et al. (2010) reported similar findings – that UK consumers believed that the red coloured labels implied that the products should not be eaten. By incorrectly perceiving the red coloured labels to mean 'avoid' or 'don't eat', the impact that FoP labels can have is reduced, since it would be an unrealistic goal for consumers to avoid eating red labelled foods.

Unintended consequences can result in boomerang effects. Vasiljevic et al. (2015) describe these as "boomerang effects, whereby people who already abstain from the undesirable behaviour actually inadvertently start engaging more with the negative behaviours" (p. 57). This is explainable in terms of participants viewing the labels as instructions to avoid, rather than interpreting them as helpful warning signs, which leads to feelings of inadequacy or guilt (Budewig et al., 2004). Other boomerang effects arose with some consumers describing red labels to signify '*tasty'*. Although these comments were likely made in jest, they underline the unintended consequence of the colouring system.

Significant new contributions have been made here by demonstrating how the colours on FoP labels are misinterpreted and the possible corresponding detrimental impacts of these misinterpretations. Kleef et al. (2013) cautioned that the red colours on front of pack food labels may generate a "boomerang effect" (p. 15), particularly for younger consumers who were shown to be attracted to the warning signs on alcohol and tobacco packaging. This is the idea the colour red as a warning, actually attracts consumers who wish to counteract health advice, and this may occur subconsciously. What has been shown here is that there does appear to be evidence of some boomerang effects in that the colour red

is wrongly interpreted as 'avoid' which leads to consumers perceiving the labels as impractical.

This finding may also help to explain why in simulating shopping experiments or in computer-assisted shopping basket tasks, consumers often perform well in terms of using FoP labels to select healthier products. If the reds are being perceived as signifying 'avoid', then this could be beneficial in selecting healthier baskets in lab-based experiments. However, this perception may not transcend into actual purchasing behaviour because it is an unrealistic goal.

The boomerang effect described above is of particular concern when considering subgroups of the population who like to rebel, for instance adolescence. Studies have shown that warning signs on cigarette packets have a negligible effect on adolescent existing smokers (Moodie et al., 2015). In addition, consumers act in accordance with how they believe their peers to be behaving. As can be seen above, many consumers in this study made comments such as '*nobody uses them*' (Anna, social grade E). Therefore, if its perceived to be a social norm that these labels are not used, then this too will reduce engagement with labels. Future research should consider how FoP label use ties into social norms and the impact of social groups.

In addition to misinterpreting the behaviour that corresponds with each colour, other more nuanced perceptions of the colour scheme emerged. The quotes below demonstrate that two participants believed that the colours were nutrient-specific, for instance they perceived the nutrient 'fat' as always displayed as red, and 'salt' as green. Others were confused as to why there was not always a complete set of traffic-light colours (red, amber and green) on display. When one colour was missing, participants were unsure about the meaning of existing colours. This demonstrates a complete misunderstanding of the colour scheme as it is of no bearing whatsoever if one nutrient is red, on the colour of the

other nutrients on that labels. Only by allowing consumers to elaborate on their interpretations of the labels, do these sorts of issues arise.

Lastly, a few participants tried to explain or account for the white colour on the label where the energy/ calories are located. Interestingly, calories are always coded as white since the label is not attempting to convey if the quantity of calories is high medium or low. Yet situating the white alongside the traffic light label meant that some consumers confused it as indicating a low level of calories. Thus, a myriad of complications exists when consumers' try to make sense of the colours on these labels, as can be seen below.

> ***Danielle (Social grade D)*** *"Yes, no, it's just that having them colour coded helps you to find the right information quicker. I know to look at the top of the thing here to look at the calories – I'm not interested in the fat. If I was interested in sugar then I know to look out for the green field. And that is consistent across all of the labels."*
> ***Researcher*** *"So you think that sugar is always green and fat is always red?"*
> ***Danielle (Social grade D)*** *"Well I don't know, I've never thought about it. I know that they're always colour coded. I would hope that they're consistent otherwise they'd be pretty useless. I am a fan of colour coding so I like that as an idea and it's useful but I guess this doesn't say yellow to me – it just seems like a colour. So that's why I'm not seeing it as a traffic light. I guess if it was more like this kind of colour [Points to amber] then I might be able to tell.*
>
> ***Liz (Social grade B)*** *"I'm just a bit confused cause I thought they would be yellow and not white cause of the name traffic lights. Emm so… would yellow be too hard to see? I don't know! That's got me thinking. I'm like 'is this for people that have problems with colours or something'. This is where I'm getting confused. Well it can't be yellow because then it would blend into the traffic lights maybe so they had to use other colours? Why is it white though? I haven't got a clue."*

Erin (Social grade C) *"I've no idea by the way, the difference in how they are coloured – is that because of the different brands? These ones have coloured percentages and these ones have coloured grams? It's got quite a high score but still its yellow not orange?"*

Researcher *"I think it's meant to be the same - the yellow or the orange, its only looks different because of the packaging"*
June (Social grade D) *"Yes it's difficult to tell. Is that orange or is that red? They do look the same to me."*

Researcher *"And if red is bad does this mean never eat or avoid it… once a day.. what do you think they're trying to tell you?*
Max (Social grade B) *"Don't know. Just don't know.*

Liz (Social grade B) *"well I think the red has a higher content and that would be like stop and be aware and... I'm just a bit confused cause I thought there would be yellow and not white cause of the name traffic lights. Emm so...I have looked at them before, but I can't remember what for. But I know like the red has the higher content and that's where you need to stop and think, the green is ok, and the white is in between. Is that right?*

Martha (Social grade E) *"But then you wonder why is this one is red and that one is not red, even though that one has a lower percentage?"*
Research *"Why do you think that might be?"*
Martha (Social grade E) *"Well that's what I'm wondering because there is the same amount the same level of 400g and that one has less calories. This is strange… but yeh now I'm wondering where is the third part? Because usually there is three colours but on this one there's only two."*

The first quote is a very clear example of how consumers can on the one hand find these labels 'useful' and describe them in a positive light yet fail to grasp how to use them properly. The consumer appears confident and assured in her response, despite being

wholly incorrect. These kinds of misunderstanding may help to explain why GDA-TL labels have had limited success in real world conditions. It also highlights the danger of consumers providing socially desirable answers since the consumer begins by suggesting that she has used them in this manner before, when if she had, she would have noticed that 'fat' is not always 'red' – and so on.

The fact that some consumers incorrectly perceived each nutrient to have a corresponding colour, for example fat being 'red', may stem from the widespread use of pastel-coloured labels. These labels were used by supermarkets such as Tesco, who control almost 30% of the UK's grocery market (Kantar, 2016). Pastel-coloured labels *do* use a specific (pastel) colour for each nutrient, and prior research has shown that consumers *do* conflate how these should be read with how traffic light labels should be read (Malam et al., 2009). The findings of this study suggest that this remains the case. It underscores the need for a consistent label format to be employed across the board. Today, many large-scale food manufacturers, such as Kellogg's still refuse to adopt the UK's FoP labelling format, instead opting for a monochrome GDA system. The findings here suggest that this variance in systems being used in the market is having a detrimental effect upon consumer's interpretations of label information.

If the FoP label contained only two of the three colours found on traffic lights, i.e. red and amber, as shown in Figure 22, several consumers were confused as to where the green label *'had gone'.* Since the nutrients are not colour-specific, there will be occasions when all colours of the traffic light system are not present. Two participants suggested that the red and amber colours had been used to coincide with the product's packaging. These perceptions underscore the issues consumers have in making sense of the labels and colours. The example depicted in Figure 22, was used during the interviews to facilitate discussions. Several consumers spontaneously commented on the energy quantity which is always displayed with a white background alongside the FoP label. It was unclear to

them why the energy content did not receive a colour coding in a similar fashion to the nutrients.

Figure 22. Example of product used during interviews

These findings underline why there is a need to explore perceptions of FoP labels in a qualitative, constructionist format. On the surface it appears as though the TL scheme is understood, and the majority of consumers in this study were able to grasp that a green label indicates a healthier level of nutrient than a red label. However, when explored in-depth it becomes clear that the intentions of the TL colours are missed on some consumers. Expecting the colours to be nutrient-specific or experiencing confusion when only a few of the traffic light colours are displayed, means that the consumers have misinterpreted their purpose. This is why for example, experiments which prompt consumers to make healthy decisions with traffic light labels (Nyilasy et al., 2016) appear fruitful, yet might not translate into real world results.

5.3.9.2 Trust in Colours

There was a perception that manufacturers are able to trick or manipulate the packaging, including that of the *colour* of FoP labels, so as to make the food appear healthier than it truly was. These perceptions are not unfounded (Lobstein et al., 2007). Consumers' ill perceptions around the food industry as a whole, appeared to create distrust in the accuracy of the colours on FoP labels as well, as can be seen from the quotes below.

Liz (Social grade B) *"Well it kind of has an average amount of saturates and fat or whatever, but it's green for sugar. But I know that noodles are no way good for you and they're full of salt. And well, a lot of people are overweight because of the hidden sugars and salts so I'd put that more than a green."*
Researcher *"You'd have it more than green... haha now you're just making up your own?*
Liz (Social grade B) *"Haha yeh I'd just change it!"*

Joy (Social grade D) *"Well I just think, yeh ok they're only yellow or green cause they've not got much fat or sugar in them, but I bet it's got lots of other ingredients. E numbers and colours and all kind of stuff. I bet. Dying to look now. Yeh if there's things that you don't even know the name of - its actually quite unhealthy. Even if there is not hardly any sugar. See my gauge is if you don't actually know what it means, then it's crap"*

Erin (Social grade C) *"Even though it says no preservatives I'm quite sure there must be some in there I mean it's dried pasta. As well as some kind of dry powder chicken and powdered mushrooms too. It's got quite a high and sore, but still – it's yellow not orange."*

Max (Social grade B) *"I don't trust them. I know what's good for me. It states this is amber but it's only 1% so how does that work? Well 1.1 gram and well I can't do any maths right now...but I wouldn't trust this product."*

A lack of trust meant that on occasion, consumers would refer to the colours being unbelievable or simply incorrect. In the example above, a participant was presented with a ready meal and in response to the salt level being coded as 'green', she expressed disbelief and explained that she believes it should be changed to a 'red' code. Other consumers expressed the belief that the colours were there to tempt consumers into purchasing. In this sense, consumers don't view the FoP labels as a helpful guide, but

instead as another attention-grabbing distraction which ought to be avoided. This echoes the work of previous observational studies (Malam et al., 2009).

The Food Standards Agency warned that some consumers hold "a perception that food retailers and manufacturers would put profits ahead of consumer nutrition unless they were encouraged or regulated to do otherwise" (2010, p. 28). This study goes some way in supporting that. The results of this section make a practical contribution in the form of exploring how colours on FoP labels are perceived and how these perceptions influence behaviour. More research is needed to draw out exactly how these variances in colour perceptions translate into behaviours within supermarkets. However, this study makes an initial venture into unravelling the impact that subtle differences in perceptions and trust of colours on FoP labels can have.

5.4 Perceptions of FoP Labels as Influenced by Socio-Economic Status

Another theme to emerge from the data was that of socio-economic differences in terms of how FoP labels are perceived. The participant's socioeconomic status (SES) was derived using Scotland's 2001 Census data published by National Records of Scotland (General Register Office for Scotland, 2001). This census ascribes a social grade (ranked from A to E) based on occupation. Although slightly crude, this measure has been used elsewhere in the literature to give an indication of participant's SES (Grunert, Fernández-Celemín, et al., 2010).

These social grade rankings (A to E) did not map exactly onto differences in perceptions of labels or conceptions of health. There were consistencies and overlaps between answers from each group. Yet, some key differences between groups did emerge. Firstly, a comparison of shopping baskets reveals that those in groups D and E purchased

considerably more processed food, ready meals, and confectionary than those in higher social groups. Whereas participants in social groups A/B/C purchased more fruit and vegetables than those in lower social groups. A large amount of research has established that diet follows a social gradient (Darmon & Drewnowski, 2008; Maguire & Monsivais, 2015). And previous research (Mckinnon, 2012) has identified the key factors influencing inequalities in food purchasing to be "..taste preferences, health concerns, health beliefs, nutrition knowledge, nutrition concerns, weight concerns, nutrition label use, and several other values and beliefs unique to particular socioeconomic groups" (p. 4). Where this study contributes is in allowing consumers to comment upon their consumption choices in context using think aloud techniques. The observation methodology employed within a natural setting meant that consumers' reasons for their choices could be discussed in situ.

5.4.1 Price

Most notably and perhaps most obviously, cost as a factor for consumption choices was remarked on more commonly by those in lower social groups. Although cost was also commonly discussed by affluent consumers too. Cost remains the driving factor in the majority of consumption choices and lists were often brought so as to avoid deviating from what was necessary. Whilst 'thinking aloud' their decision-making processes within a supermarket, those in lower social groups consistently discuss price, searched for the cheapest, or largest quantity at the lowest price. For example, frozen ready meals for £1 were appreciated for being quick and cheap.

Several participants referred to price, or availability of time, as key factors in affecting their food choices. Although the purpose of this study was to focus on food labelling as a factor of influence, this finding should not be ignored. Nudges must compete against these aspects of decision making in order to have any significant bearing upon dietary choices. What impact can a red-label have if a lower *price* is simply more attractive than

a green-labelled product? Naturally, this issue will affect some consumers more than others depending on their disposable income.

Balcombe, Fraser, & Falco's (2010) study highlighted this concern using a willingness-to-pay design to assess how consumers respond to varying traffic light colours on food packaging. All participants displayed a very strong desire to reduce the quantity of red labels within their shopping basket, however a lower SES resulted in a lower willingness-to-pay. It appears there is a threshold at which price becomes more important a factor than health warnings in regard to food purchasing decisions. This is logical since expensive (healthy) items with green labels would simply be beyond affordability for some consumers. Similarly, in an observational study in the UK, within a natural setting, Enright et al. (2010) found that price was a major factor in dictating whether labels were referred to or not, with those on lower incomes referring to them least.

The findings of this thesis support prior literature, with those in lower social groups commenting upon the price of products more frequently. They regularly expressed that when it came to decision making, price often takes precedence in comparison to any form of labelling. Thus, label use is less often a result of consumer agency and more a consequence of affordability. It is important to note that the idea that healthy products are 'beyond the reach' of certain consumers is not simply a misconception held by those in lower social groups but is in fact supported by research. A recent and robust systematic review, examining over 150 independent studies, confirmed that healthier diets cost more than unhealthy diets (Darmon & Drewnowski, 2015). "Lower-quality diets generally cost less per calorie and tend to be selected by groups of lower socioeconomic status" (Darmon & Drewnowski, 2015, p. 643).

What this means for the practice of nudging is ominous, particularly in in terms of consumers' attitudes towards being nudged. In this study consumers felt nudges were

irrelevant at best but at times insulting and frustrating. Although well intended, the green label may simply remind consumers of their inability to select the heathiest products due to cost. This is certainly implied by some of the responses given by the current participants. Interestingly Balcombe, Fraser, & Falco's (2010) investigation was a *hypothetical* 'willingness-to-pay', indicating that consumers are well aware of this dilemma; they recognise that their inability to consistently choose healthier options is in part caused by price. In the current study, this resulted in some level of frustration with the underlying principle of nudging as discussed in section 5.3.5 *Resentment*.

Moreover, if price is repeatedly shown to surpass labelling as a key influencing factor in dietary choices, it begs the question if the right people are being nudged. More specifically, if corporations were nudged, for example, towards increasing the price of sugary products or reducing the price of healthier foods, would a stronger impact upon dietary choices be achieved? Obviously, this more radical option would face more challenges to implement. And yet this tendency to fall back upon nudging as a more palatable measure is precisely one of the inherent dangers in using this technique. As Azad (2019) explains, former British Prime Minister, David Cameron publicly favoured the use of nudging to reduce energy consumption since it could be achieved simply by demonstrating to consumers what their neighbour spends on energy. Yet economists were quick to point out that in fact, the most effective way to reduce energy consumption is to increase the cost of energy. Thus Loewenstein & Ubel (2010) argue that nudging "is being used as a political expedient, allowing policymakers to avoid painful but more effective solutions rooted in traditional economics" (p. 31). The results of this thesis support the notion that changes to the price of food products, rather than coloured labels, would have a far stronger impact upon dietary choices.

5.4.2 Avoiding Waste

In many cases, those from social groups D/E would justify their choices aloud in terms of the need to buy products which would be eaten. For example, June (social grade D) remarked "*I know I shouldn't give him* [referring to her son] *fizzy juice but I'm just being realistic – who drinks water with their dinner, do you know what I mean?".* Similarly, Amanda (Social grade D) commented on her choice of snacks for her family "*We love these* [referring to Dairylea Dunkers] *I know they're not great, but I need to have food in that they'll eat!"* Those in lower social groups experienced some pressure, which was not noted in those of higher social groups, to provide for their families in terms of selecting highly processed foods which are likely to be consumed. A combination of wanting to avoid food waste (and therefore wasted money) and selecting desirable foods, meant that processed foods were selected. Reasons for disparities in consumption choices between social groups such as these only begin to emerge through qualitative analysis.

In terms of their general attitude towards labels, results were mixed. Across the board, consumers initially liked them and described them in a favourable manner. However, differences emerged when asked to engage with, and make sense of them. For example, Fiona (social grade B) explains "*I think it's good that… it's nice and clear if you're in a rush, which I generally am when I'm in the supermarkets*". In comparison, having been asked to describe the information on the label, a typical response from those in D/E groups would be "*I know they're there but I personally just ignore them, I've just not got time to stand and read labels on everything I buy*" (Leanne, social grade D). There was a contrast in the language and sentiment used to describe their feelings towards FoP labels.

To facilitate discussions around shopping and diet, all participants were asked what 'being healthy' means to them and if this was an important issue in their lives. Those in higher social groups discussed issues around cooking from scratch, family meal times, aspiring to be vegetarian or reducing meat consumption, and having a balanced diet.

Those in lower social groups also mentioned having a balanced diet, as well as the need to do more exercise and 'trying to be good' meaning, trying to avoid highly processed foods. Interestingly, one participant explained a balanced diet as being '*not chicken nuggets every night*' (Amanda, group D), thus even these concepts hold diverse meanings for different consumers. These findings support a study which compared the notion of 'being healthy' between different social groups and found that those of lower SES associated it with avoidance foods, whereas those of higher SES were more likely to link it to health benefits (Pettigrew & Pescud, 2013).

Those from lower social groups offered more explanations or justifications for their consumption choices when describing their health. They provided reasons as to why they do not always achieve the desired behaviours. Frequently, health issues or illnesses of family members were discussed. These included both physical and mental conditions which meant that there was a lack of time and resources available to dedicate to 'being healthy'. Thus, some consumers found the notion of being healthy a burden that demanded time and effort. Illnesses arose naturally in conversation, rather than any specific questions being asked about health issues. The example below illustrates the contrast in language, themes and attitudes towards the notion of 'being healthy' derived from contrasting social groups.

> ***Sammy (Social grade E)*** *"I really think it depends on your circumstances. Like if you've suddenly got a lot of stuff going on in your life then it's not going to be a top priority. That's what happens to everyone. I mean if your life suddenly gets really busy and really stressful and you have a bereavement or whatever then the last thing you're going to think about is how many calories is in a donut. Its more just like get it in my face I need something to eat, do you know what I mean? So, it falls off the list of important things quite quickly and like I was saying if you're someone who is struggling with money or whatever then it's just not going to be your first priority. It's not*

going to be 'oh where can I get an organic chicken' - it's going to be where can I get the things that'll feed everybody, cheaply!"

Lindsay (Social grade B) *"I'd say I am quite healthy yeh, like, I try to be anyway. I cook from scratch most week nights and…at the weekend I'm probably more relaxed but, generally I know what's in my food. I could be having less sugar, definitely, I have a total sweet tooth, but I'd say I'm quite healthy cause I try to get a balance diet and I do eat a lot of fruit and veg"*

What these findings suggest is that consumers from different backgrounds conceptualise their health differently. Merely thinking about 'health' as a concept, evokes a totally different array of emotions and responses from those of different social groups. Lindsay is confident and upbeat, whereas for Sammy this question evoked a defensive and emotional response.

This finding supports previous work which established an influence of SES on how health messages are perceived. Buckton, Lean, and Combet (2015) assessed the inferences that Scottish adults made about the various terminology used in health promotions. Misconceptions were common, owing to a diverse and interchangeable use of health terminology. There were differences in how SES groups perceive health messages, which in turn influenced their likelihood of use. Ultimately the same could be said for FoP labels, especially considering the fact that the language and messages conveyed upon FoP labels is an abstract account of the detailed nutrients within products. This is likely to have contrasting effects on consumers of different social groups, as has been identified here.

In previous studies, those from lower social groups have been found to explain the notion of being healthy as 'not being ill'(Williams, 2013). The diversity of beliefs towards the concept of health will influence how FoP labels are perceived too. If being healthy is a lesser concern, as Sammy's quote above indicates, then FoP labels are even less likely to

be seen as relevant. When asked what sort of priorities are on their mind when shopping, those in lower SES groups discussed the need to feed their family on a budget, the duration for which products would last (before going out of date), what their family members are likely to eat, and if products could be sourced elsewhere for cheaper. Whereas those from medium to high social groups were more likely to discuss the need for a balanced diet, meal planning, securing variety in their shopping, and trying to be healthy. Thus, there are differences in the role that food plays within the household, with more emphasis being placed on the functional role of food in lower SES groups. For example, "*literally there was a period when I couldn't drive and I think he [husband] bought the same things for 4 weeks. I'm not moaning because it was important that everyone was fed, just a bit predictable" (Reina, E).* Food was not considered as a means of gaining health (as expressed by higher SES groups) but instead regarded more pragmatically as satisfying hunger.

Perceiving FoP labels to be confusing was commonplace amongst all consumers as discussed in section 5.3.7 *Confusion*, yet those from D/E social groups struggled more with the numerical data. Both in terms of correctly deciphering the information, as well as in terms of body language and confidently discussing the information. Even when those from A/B groups incorrectly relayed the numerical content, they did so with conviction. In contrast, those from lower social groups physically shunned the idea of interpreting the information particularly when asked to '*make sense of the labels in whichever way they saw fit*'. Consumers generally took this as an indication to explain the numerical data on the FoP labels, causing distress. One participant stopped speaking altogether and had to be encouraged to continue. Others were constantly asking for verbal confirmation that the answers they were providing were adequate. In addition to this discomfort previous research has shown that even the degree to which nutritional information on packaging is

believed, varies with socioeconomic status (Nayga, 1999). Combined, these factors can be viewed as barriers to engaging with food labels.

Socioeconomic differences also emerged in how the colours of FoP labels were interpreted, as discussed in section 5.3.9 *Colours*, with those in lower social groups more likely to assume the red colour indicates 'do not eat' and those in higher social groups more likely to read the colour as 'be aware of how much you're eating'. These subtle but important differences may influence to what extent the labels are engaged with. They provide support for the notion that health and nutrition advice are conceptualised differently amongst different social groups and this is a consideration which is lacking in existing food label research. These differences in perceptions are significant since those designing and promoting the use of FoP labels are likely from higher social groups. There is a need not just to hear from those in more disadvantaged groups but to build campaigns from their perspective, as social marketing advocates.

5.5 Perceptions of FoP Labels as Influenced by Gender

Perceptions of FoP labels are shaped by a host of factors. By focusing of women alone, we are able to draw out some gender-specific issues. Previous research on FoP labels, typically conducted out of context, essentially strips women of their identities and of the role they play within the family. These identities are so often fundamentally tied to the need to provide and feed others (Orbach, 1978). The theme of gender was developed by considering that the majority of participants made reference to the role that they play within the family as a women/mother/or partner. For example, one reoccurring matter to emerge from this dataset was the intense responsibility women felt around buying and preparing food that the family would appreciate and 'actually eat'. They felt it their duty

to ensure others were fed, and this extended beyond their children to that of their husbands or partners, as can be seen below. Again, it should be emphasised that these women had not been explicitly asked about their role within the family or about their relationships specifically, but instead, these issues arose naturally whilst discussing food labelling and shopping.

> ***Kayleigh (Social grade C)*** *"My partner is more fussy than she is. [Referring to daughter]. If I'm cooking for me and her… and then I have to start thinking about what I have to do to make him eat something… I just don't even want to cook for him. Like I'll buy the Dolmio sauce but then add stuff into it like mushrooms – but I have to cut them so finely that he can't see them."*
> ***Researcher*** *"That's like having another child-"*
> ***Kayleigh*** *"Totally. So, a lot of my shopping I have to think about him."*
>
> ***June (Social grade D)*** *"I would say that we probably don't eat as healthily as we should, we eat quite a lot of crap. But I quite like the wee bags of frozen veg. If it was up to my husband though we wouldn't eat any vegetables. If he sees me even going to try to put them in he says 'oh no I don't want veg'.*
>
> ***Lindsay (Social grade B)*** *"I just get stuff everyone will actually eat. There's no point in bringing home a big load of veg that no one eats, we'd just end up getting a chippy!"*
>
> ***Helen (Social grade B)*** *"My husband doesn't like vegetables. So, I have to hide them in everything. I hate it. I can't stand it. I sent him to the psychiatrist. That's how bad it is."*
> ***Researcher*** *"Just to overcome this?"*
> ***Helen*** *"Yeah because when I met him – the first time we went out with friends, he had a shepherd's pie which they had made, and it had peas and sweetcorn in it and he moved every single pea and sweetcorn out of the pie!"*
> ***Researcher*** *"That's extreme"*

> ***Helen*** *"It was extreme but it turned out, because when I kind of got into it, I found out it's because his parents made a big big deal of it. So yes, he doesn't like it but his parents made a big deal about it so I just kind of let it go. But then when the kids arrived, it made things really complicated because if they're going to learn to eat veg… when they started showing a choice not to eat it – then we had to deal with it… So, then I tried to sneak the veg in, and that got a really bad reaction. I realised how bad it was when he asked me if it was chicken pakora, and I said it was. He could tell it was cauliflower though, anyone could tell it was cauliflower! But he ate it, spat out and then was nearly sick."*

In the quotes above, the participants are explaining their priorities when shopping, and why they don't have time to make use of food labelling. Their caring roles within the family take priority and dealing with fussy eaters means there is simply less time allocated to food labelling. The fact that this subject arose naturally for several women as an issue when discussing food labels and food choices highlights how intertwined women's perceptions of their health and food choices are, with that of others.

Interestingly, when asked personal questions about their personal shopping experiences, several women would spontaneously respond by saying "We…." as in, discussing her *family's* choices and decisions. It was as though their identities were so interwoven with that of their family's they were unaware of this habit and this response time. This serves to demonstrate the extent to which some women view themselves and their families as one.

The quotes above demonstrate that the expectations that women feel in needing to monitor and improve their partners' nutrition is yet another burden within the hectic supermarket environment. There was a sense of inadequacy felt if the meals they provided were left uneaten or if the food stocked in the house was unappealing. The issue of providing meals

which would be appreciated rather than left uneaten, as well as cooking separate meals for children and parents all add to the burden women face. Women focussed more on providing food which would be eaten, rather than for example, food that was healthy.

Women in this study felt personally responsible not only for the cognitive load involved simply in thinking about food for the family, but for ensuring food was available within the household, for meal planning and for cooking. In this study, there was no mention of enjoyment or pleasure taken in meal preparations, rather the opposite. Cooking and striving for health were viewed as a demanding burden. Pleasure was not taken in fulfilling these duties but rather the women felt they 'ought' to be done. Hence reliance upon convenience foods was common.

> ***June (Social grade D)*** *"Well I know I'm overweight as is my husband, as is my son. I know it we should probably be eating more healthily but* [lengthy section discussing having depression] *... My son goes to a few different youth groups and so that's quite a quick turnaround time [*from when he gets home from school*]. So sometimes it will just be a quick pasta zip it in the microwave meal for him... he would not even entertain anything that had vegetables."*

In addition to the aforementioned pressures, some consumers face these issues on a tight budget. They feel forced to make a choice between unhealthy products or a hungry family. Conducting the research in context highlighted how the majority of promotions are positioned on unhealthy, processed foods. Consumers across the SES spectrum recognised that these are not usually healthy options, they are under no illusion that they are selecting unhealthy food and yet the need to feed the family for cheap overrides the aspiration to consume healthy food.

Adding to this pressure, the desire to lose weight was widespread and discussed in a taken-for-granted fashion. There remains a persistent and damaging cultural ideal around women's bodies (Northrup, 2007) which translates, in this study, to a belief woman hold

that every woman is constantly aiming to reduce their weight. Orbach (as cited in Budewig et al., 2004) claims that continuously reinforcing consumption ideals in conjunction with today's stereotypical ideal body shape, can leave people feeling inadequate or trapped, which in turn can lead to yet more overeating.

> *"...this analysis leads to the worrying possibility that healthy eating campaigns and some other behaviour change interventions could simply add to the obesity problem in the long term by increasing our obsession with food and body shape*." (Budewig et al., 2004)

Since a large proportion of the population *are* overweight or obese, it might be argued that assuming that most women *are* attempting to lose weight is logical. Yet what Orbach (2004) is arguing is that the pressure in society, and negative language used within health campaigns can indirectly add to the problem. This study provides support for this notion. When discussing nutrition labels and consumption choices, women would naturally begin to discuss the burden of providing for the family, almost as an explanation for time restraints and low engagement with labels.

Additionally, most participants discussed the immense lack of willpower they felt over their food choices. In particular, this was discussed in reference to sugar. There was substantial discussion around anti-sugar sentiment, which suggests that the government's attempts to inform the public about the consequences of overconsuming sugar are working, to some degree. Yet in conjunction with this was the anger felt towards sugar being 'hidden' in products, as discussed in section 5.3.8 *Trust.* In instances when consumers lacked willpower to avoid buying sugar-laden products, they used language such as 'slip up' or 'being bad'. One participant even describes how a weight-loss organisation described foods high in salt, sugar, fat and saturates as 'sins'.

Joy (Social grade D) *"I have absolutely no resistance to sugar at all. So, if I don't keep an eye on the food that I cook and feed my kids, I would be absolutely obese. I try to be healthy but then I stuff my face with a whole packet of biscuits or a whole bottle of wine. I can't resist some things. Like my friend came down the other day with Easter eggs for the kids but the kids were away - well they're gone! They were gone immediately! I just can't have them in the house. I can't have anything like that in the house. I try really hard, and I hate that sugar is hidden away in everything. And I do believe that it is poison and I do believe that it is an addiction. I absolutely believe that, but I just can't leave it alone."*

Nikita (Social grade C) *"I want to control the level of sugar… It's something I've been scared about, sugar. And this is a way to help control it and keeping my weight between 55-59 (I know I'm disclosing my weight here!) but yeh I've kept it between that for over 9 years."*

Fiona (Social grade B) *"I'm addicted to it [sugar]… I've got a really sweet tooth and just from a health perspective I think it's hidden in a lot of things and I guess there's been a lot more focus on low sugar diet. I can get very addicted. Where I fall down is definitely sugar. During the week I find it hard to cut it out completely and not have a sweet treat. What I don't like about the kind of diet awareness that's out there is there is a lot fat shaming a lot of pressure and focus on the fact you have to lose weight you have to be a certain way."*

None of the participants mentioned the role of industry in regards to their weak willpower. Instead their own inertia was solely to blame for their behaviour. This demonstrates that the women in this study have wholeheartedly adopted responsibility for their health and food choices. Yet Mayes (2015) argues that the continuous social parlance around overweight and obese people and how they are continuously targeted as 'in need of help' only serves to reinforce the notion that diet and food choices is a lifestyle choice. He points to the disparity in diets from people of different social groups to argue that this is

not simply a lifestyle choice but a product of environment. In this sense, the environment and cultural pressures facing women should be considered a reason as to why FoP labels are in the most part, ignored.

In relation to the FoP label, the insight drawn here from in-depth qualitative methods helps to demonstrate why consumers feel they have so little time to use them. Realistically when balancing the pressures of providing for the family, ensuring husband and child are fed, in a world obsessed with diet and weight, the available mind space to process detailed food labels is further reduced. These issues are not confronted within lab-based settings. Observations in a real-life setting brought these issues to mind for consumers in a natural way. This represents a contribution to knowledge in the form of considering FoP labels in a far wider context than is typically done.

5.6 A Framework of Perceptions of FoP Food Labels

Many models of perception in the broadest sense exist, and generally involve some elements of exposure, attention and interpretation, as discussed in section 1.5 *Perceptions*. However, perceptions change depending on the context. Perceptions of food labels will differ from perceptions of organic produce, for example. The findings of this study highlight that that perceptions of food labels *specifically*, are influenced by the supermarket environment, the individual's preferences and the ease or 'directness' at which the label can be used. Having assessed previous models of perception across multidisciplinary fields, Sijtsema et al. (2002) conclude that what is missing in nutrition literature is recognition for the role that the context plays.

In attempting to fill this gap, the author proposes a new framework of perceptions of food labels which incorporates the context. Although a similar framework has been proposed

by Nayga (1999) titled '*Towards an Understanding of Consumers' Perceptions of Food Labels'* (Figure 23), there are stark contrasts between how Nayga's framework was developed compared to the current one being offered.

Nayga (1999) used previous research to identify factors that influence perceptions of food labels (individual characteristics, situational, behavioural, and attitudinal variables, and product class), as outlined in Figure 23. Then, to establish the validity of these factors in influencing perceptions of food labels, Nayga (1999) created a statement in relation to each, and asked participants to rate their accordance using "strongly agree, somewhat agree, somewhat disagree, or strongly disagree" (p. 32). Correlations were drawn to demonstrate which types of individuals are more likely to perceive food labels favourably.

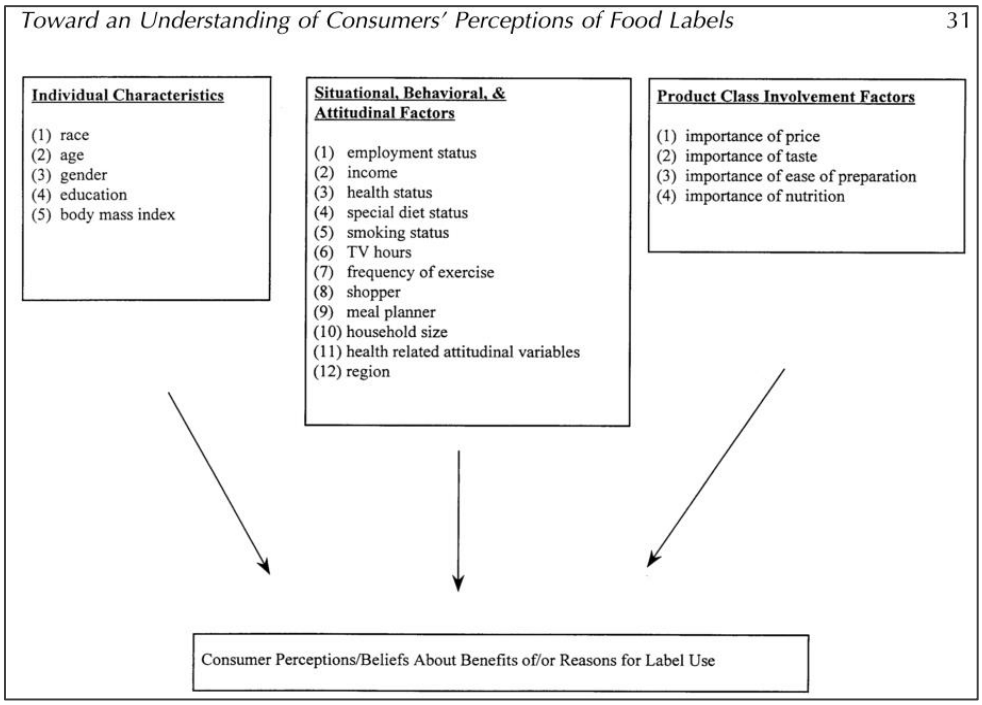


Figure 23. Nayga (1999) Towards an Understanding of Consumers' Perceptions of Food Labels

Moreover, this framework was drawn from research using American participants. In contrast, the current research did not presuppose what factors should influence perceptions of food labels. Instead, themes were allowed to emerge from the data in a

qualitative, ethnographic style. This means that the framework proposed below, Figure 24, has been developed from the consumers' perspective. Variables were not tested for influence, but rather those aspects which influenced perceptions of food labels arose from the data.

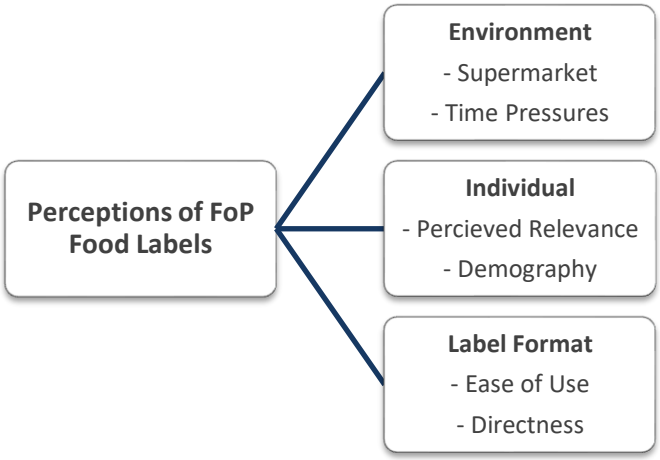


Figure 24. Framework of Perceptions of FoP Food Labels

Using the findings of this thesis, the author builds on previous work (Nayga, 1999; Sijtsema et al., 2002) and proposes an updated framework of Consumers' Perceptions of Food Labels, Figure 24. From the data analysis, three key factors arose that appear to influence perceptions of food labels: the environment, the individual and the label format. Unique to this study, the environment in which consumers are exposed to food labels was considered. This study reveals that the supermarket environment is not conducive to reading the UK's data-heavy FoP label format. Time pressures that consumers experience within supermarkets, are actually catalysed by the supermarket environment itself, in which high calorie foods are presented in abundance. This in turn led to a perception that food labels and packaging generally, could not be trusted.

The results of this thesis also indicate that aspects of the individuals' characteristics play a strong in the formation of perceptions of FoP labels. These include socioeconomic status

and gender, but also perceived relevance of the information. Perceived relevance does not concern simply awareness or health perceptions alone, as previous research suggests (European Food Safety Authority, 2008; Grunert, Fernández-Celemín, et al., 2010), but instead extends to perceived relevance of nutritional information in terms of this generating behaviour change. Several participants in this study commented that they did not believe that their dietary behaviours could be altered simply by knowing the salt/sugar/saturates/fat levels of an individual product. This does not mean 'health' as a concept is less relevant to them, but instead that the individual breakdown of nutrients is less so.

Similarly, an individual's socio-economic status plays a key role in how food labels are perceived, with those from lower social groups more likely to view them as 'warning signs' which in turn led to some elements being ignored (as discussed in section 5.4 *Perceptions as influenced by SES*). Lastly, perceptions of food labels are largely influenced by the directness and easy of which consumers can engage with the information. This study suggests that at present, there remains substantial confusion around FoP labels. Confusion exists not only in terms of consumers having to decode what FoP labels are trying to convey, but how to import that information into their everyday lives and use it to have any significant impact upon consumption.

Future research may wish to consider how the factors identified here interplay in shaping perceptions. For example, by exploring if the directness of a label's format, increases perceived perceptions of relevance. In other words, are these labels seen as irrelevant simply because consumers are unable to decode the information or is the information inherently irrelevant. Through ascertaining these sorts of aspects, policy makers will be better placed to improve the design of food labels.

5.7 Nudging as a Social Marketing Technique using Food Labels

The final research objective involves applying the perceptions of front of pack labels to the context of nudging, in order to demonstrate if this example nudge operates effectively and draw insight for social marketers. Nudging is a somewhat controversial technique, as outlined in section 2.4 *Why Nudging is Contentious.* Yet most papers only speculate as to the possible issues that can arise with nudges (Huang & Baum, 2012; Raihani, 2013; Schubert, 2017; Selinger & Whyte, 2011) whereas this study examines a nudge in practice, specifically that of FoP labels. This is the only study to the best of the authors knowledge which directly compares the use of nudging against the practice of social marketing, an area much in need of critique (Pechmann & Slater, 2005; Tadajewski et al., 2011; Tadajewski & Brownlie, 2008; Wymer, 2015). The following section outlines several concerns which have emerged from the data in terms of using nudging as a behaviour change technique.

5.7.1 Nudging is Untargeted

Front of pack labels are designed to be used by all types of consumers, young or old, independent of whether that consumer is especially health conscious or not, and regardless of socio-economic grade (The Scottish Government, 2011). They are designed to influence the broadest range of consumers possible (The Scottish Government, 2011). This nudge, as with most nudges in society, is not targeted in the traditional marketing sense of aiming to operate upon a specific target group, but instead are designed to have the biggest impact on the largest number of people at minimal costs (Thaler & Sunstein,

2008). Ideally, anyone who comes into contact with FoP labels should be nudged simply through the indications of which foods are high in certain nutrients.

In comparison to social marketing endeavours which utilise in-depth consumer insight to form bespoke messages for specific target groups, nudges instead rely on tapping into human biases. Thus, there is no need to target a specific group of consumers.

However, what this appears to result in is health campaigns designed by the middle class for the middle class both in terms of the language used and message conveyed. By examining a nudge in practice, the results of this study demonstrate that those with higher social status perceived FoP labels in a better light and made use of them more frequently than those from lower social groups, as discussed in section 5.4 *Perceptions as Influenced by Socioeconomic Status*. This suggests that if campaigns are *not* designed with a specific group in mind, then those most likely to benefit will be those least in need, and this works against the underlining principles of social marketing. It implies that using nudging as a technique for behaviour change, may result in social inequalities actually widening. If measures to tackle health issues repeatedly result in those at the top of the social ladder benefitting, whilst those at the bottom are left behind, there could be more damage caused than good.

5.7.2 Nudges Cause Unintended Consequences

In analysing perceptions of FoP labels, it was evident that several unintended consequences had occurred as a result of this nudge. Firstly, some women completely misinterpreted the intended meaning of the percentage sign on FoP labels. Some women perceived the percentage sign to imply targets that should be achieved, rather than maximum levels that should be avoided. This is incredibly dangerous as it may result in

certain groups overconsuming. It is completely the opposite message that the labels were designed to convey. In a similar vein, it is now well documented through previous research that FoP labels can cause 'halo effects' – where some groups of consumers overconsume when presented with green-coloured labels (Crockett et al., 2014; Drescher et al., 2014; Hamlin et al., 2014).

This study also unearthed some unintended consequences in the form of how the colours upon labels are interpreted. In fact, the majority of women within this study perceived the red-coloured labels to signify 'do not eat', which again was not the intended behavioural response of FoP labels (Food Standards Agency, 2016). Interpreting the colours in this way at times resulted in the labels being ignored altogether. Some women felt they did not want to be 'warned how to behave'. Whilst others assumed the colours were used simply to catch attention and increase the likelihood of products being bought, which was another reason why label information was ignored.

Unintended consequences of FoP labels also came in the form of women feeling 'nudged' towards a critique of their own lifestyle and habits, rather than being nudged towards an improved dietary quality. When asked to engage with FoP labels, several women commented upon their inadequacy or provided justifications as to why they felt unable to decode the information. Some women were visibly uncomfortable and ashamed. Adding to this, the majority of participants made some unprompted reference to their need to reduce sugar in their diets and the struggles involved in striving to do this. Ultimately, this nudge left some women feeling as though they had to excuse their decision making and behaviour. They felt the need to explain that their rushed lives and limited time spent in supermarkets combined with their paternalistic role of keeping the family fed, made it difficult to see the value in the fact that an oatcake has 2g of fat per 100g. Social marketers can prevent unintended consequences by using more targeted approaches that are designed around consumer insight. Nudges do not appear to offer this.

5.7.3 Nudges Go Unchallenged

The vast majority of women in this study held conflicting beliefs regarding FoP labels – that they are beneficial and a good thing for society, yet that they are irrelevant and impractical to use personally. Consumers perceived the labels as helpful, but crucially, 'not for them'. This exemplifies precisely the contention that Chriss (2015) raised in regards to nudges blending into society and thereby going unchallenged. If everyone is in agreement that FoP labels are beneficial, but just for someone else, then it is unlikely they will ever come under fire. "Governments can place nearly invisible nudges into the fabric of every-day life, which has the additional benefit of keeping red flags from being raised about the meddling of ham-fisted do-gooders" (Chriss, 2015, p. 95). What is meant here is that, nudges will not receive critique from the public, even when they are not doing their job effectively.

Similarly, Whitehead (2014) explains that consumers' awareness of a nudge and the degree to which the purpose of the nudge is understood is important since only by understanding its purpose can consumers adequately contest its presence. Yet the level of confusion around FoP labels found within this study suggests that consumers are unlikely to engage with them and therefore unlikely to critique them. Instead participants assume this nudge is working well for others, just not for them.

The findings of this research provide support for the concept that nudges go unchallenged. It suggests that favourable attitudes exist because people assume someone else is benefitting from the nudge, and because of this the nudge itself receives little critique and lacks transparency. This should be a concern for social marketers considering one of their

founding principles is to design campaigns which are transparent (Andreasen, 2002). Transparency of behaviour change campaigns is reduced if the campaign lacks critique.

5.7.4 Nudges Deter Legislation Change

As has been discussed, women in this study repeatedly reported having favourable attitudes towards the existence of FoP labels, and this sentiment is echoed in previous research (Campos et al., 2011; Grunert, 2016). This result was found despite none of the participants claiming to use FoP labels regularly. There is a danger that relying upon nudges to tackle health issues could deter from other, more affirmative action being taken.

It is often considered that food labelling, more information for consumers, and more consumer choice, can only be a good thing. Mayes (2014) asserts that this commonly held ideal is simply a result of the current neoliberal culture of the West, which values free markets and liberties above all else. In essence, the culture of the West consistently views consumer choice as beneficial. Yet this increase in choice could be indirectly hampering the introduction of more concrete laws to help tackle obesity. For example, several countries have experienced failed attempts to introduce heavy handed policies. Denmark's tax on products high in fat (Nestle, 2011) or New York's restrictions on large-sized sugary drinks (Grynbaum, 2014) for example were both thwarted in part by protesters' rejection of a nanny state. The food label pacifies such concerns. It insinuates that Governments are 'taking action' while allowing for free choice to endure. Frieden, Dietz and Collins, (2010) offer some alternative legislation options which are far more likely to be effective in achieving the desired result, such as pricing subsides on fruit and veg, increased taxation of nutrient-poor foods, restrictions on the exposure of unhealthy

products within shops and restrictions on advertising. If less efforts were ploughed into nudging, there may be more resources available to help realise these legislation changes.

An inquiry led by the House of Lords (2011) into how to adequately achieve behaviour change, cautioned that the use of nudges may inevitably lead to inaction or divert attention from more effective solutions such as prohibiting TV advertising of products high in fat, salt, and sugar. This study provides support for this concern. The findings suggest that with so few consumers making use of the labels, money may be better spent elsewhere. Increasingly, social marketers are attempting to carve out ways in which to operate upstream and affect policy change (French & Gordon, 2015; Key & Czaplewski, 2017), yet this goal is counteracted through the endorsement of nudging.

5.7.5 Nudges Emphasise Personal Responsibility

Nudges offer Governments a way of tackling health issues without restricting freedom of choice (Shove, 2014; Thaler & Sunstein, 2008). Yet the use of such tactics has significant ramifications for consumers in terms of how they perceive health and assign responsibility. Within our society, Governments consistently use messages to reinforce the ideal that health is a lifestyle choice and that with the right information and adequate levels of self-efficacy, consumers should be able to make the 'right' choice (Gurrieri et al., 2013; Raftopoulou & Hogg, 2010). Participants within this study had certainly embodied this philosophy - that their dietary choices were their responsibility. Often participants discussed their lack of will power and self-control in reference to the supermarket environment.

Drawing on Foucault, Mayes (2014) argues that because of this favoured style governance where free choice is paramount, food labels "normalize subjects as responsible for health via consumer choice, while eliding the social determinants of health antecedent to choice" (p.3). What is meant here, is that it has become normal within our society for consumers to self-blame for their dietary choices. Environmental influences upon consumption habits are neglected. This line of thought has found support elsewhere (Chriss, 2016; Gigerenzer, 2015). Within this study consumers felt responsible for their own health, they consistently blame themselves for making poor consumption choices and never seem to reflect on the larger social influences affecting these decisions.

Social marketers must recognise that simply by employing nudging as a method of behaviour change, the message being told is one of personal responsibility. More importantly, the mere endorsement of nudging sends a message that major noncommunicable diseases can be tackled through subtle tweaks to the environment. Social marketers should perhaps concentrate their efforts on promoting stronger policy change.

5.7.6 Nudges Ignore the Consumer's Perspective

Nudges are designed to operate upon several key principles that influence people's judgement making. These include risk aversion, framing, default options, a preference for short term rewards, reciprocity, and social norms (Thaler & Sunstein, 2008). And although an abundance of cognitive psychology and neuroscience support the existence of these principles, nudges in practice neglect the consumers' perspective. For example, within this study it was found that several women held a resentment towards nudges such as FoP labels because they were tired of constantly being 'nudged' into behaving one way

over another. So although a red label may elicit a response of 'danger/avoid' this was overrode by feelings of resentment and frustration. Mullane & Sheffrin (2012) warned of exactly this type of consumer backlash when nudges are used.

If consumers constantly feel as though their behaviours are being monitored and steered, the result may be out right defiance (Chriss, 2015). This study found evidence of this, with some women describing their initial reaction to FoP labels as 'irritated that they're being told how to behave' as discussed in section 5.3.5. Therefore, there appears to be certain undesirable effects of introducing a nudge. By assuming that people are heterogeneous and will respond to a nudge in a similar fashion, the nuanced way in which people *do* respond is lost.

In a similar vein, Chriss (2016) contends that nudges pit behaviours of social groups against each other, with one appearing good and another bad. Consuming products with mostly green FoP labels is deemed as 'good' behaviour and consuming products with mostly red coloured labels is deemed 'bad'. These messages can leave consumers feeling yet more frustrated or alienated.

Moreover, nudges overlook the fact that behaviours, attitudes, and decisions are informed by an individual's social group. Behaviours are formed, shaped and repeated to become habits which represent meaning within social groups, therefore to deem one behaviour as wrong is to condemn a social behaviours. Yet with nudges, an elite group who know best for all and decide what is 'good', try to push behaviours onto the masses. This can result in consumers feeling as though they have been treated in a condescending fashion and was the precisely the sentiment found through the analysis of this thesis, with some consumers feeling resentment towards the mere presence of FoP labels.

5.7.7 Nudges Can Be Insignificant

This study considered the context in which nudges operate, in this instance, FoP labels within supermarkets and how they fit into the lives of women. In doing so, it becomes apparent that the impact that nudges can have is limited. On paper, the idea of a red/amber/green logo to indicate the nutrient levels within food products sounds appealing. Yet when examined in a broader setting, considering the context, the supermarket environment, and the social pressures upon women, the likelihood of a complex label influencing behaviour appears negligible. The meagre food label must compete against the obesogenic environment in which it sits, where nutrient dense foods are abundant and aggressively promoted (Simpson et al., 2018). Gigerenzer (2015) warned that tackling health problems from the position of 'human err' rather than holistically could be destructive as it belittles what is needed to combat such issues. This study supports this notion. Tackling health issues in this fashion minimises the responsibility of external influence.

Social marketing traditionally incorporated the environment into their campaigns. Campaigns were designed with the environment and the people that live there, in mind. Social marketing was a holistic approach to behaviour change (Hastings, 2007). More recently, social marketers have begun to discuss the relevance of 'systems thinking'. Which is the idea that all social marketing interventions should be embedded within the political, cultural, social systems that cause or allow for the behaviours to endure (Domegan et al., 2016; Hastings & Domegan, 2017). Similarly, Spotswood et al., (2017) echo the need to move towards a cultural perspective of behaviour and interventions that focus upon culturally ingrained ways of behaving. Nudging does not subscribe to these pursuits. Social marketers who employ nudge tactics run the risk of neglecting or diminishing the environmental causes of behaviour.

Lastly, the impact of nudges is notoriously difficult to measure. There are a multitude of complications in measuring the impact of FoP labels alone. For example, even if the introduction of a FoP labelling scheme purported to show a reduction in calories purchased, this is not indicative of calories consumed. Women typically do weekly grocery shops for the entire family. Moreover, measuring consumption patterns as a result of FoP labels does not indicate whether that behaviour will be sustained over a prolonged period of time, and so on. Social marketing campaigns seek to achieve *measurable* behaviour change (NSMC, 2011). Yet concerns have been raised over the lack of measurability possible when implementing a nudge, especially considering the lack of monitoring and evaluating that typically occurs following the introduction of a nudge (Chriss, 2015). The relatively limited number of studies which examine UK consumer's engagement with the UK's FoP labelling scheme, provides support for the notion that currently the impact of this nudge, has not been measured adequately.

5.7.8 Nudging Lacks Ethical Guidelines

Ethical considerations of nudging have been largely neglected (Raihani, 2013; Schubert, 2017). By examining perceptions of FoP labels, this study has identified five potential issues involved when social marketers use nudging as a technique for behaviour change. Armed with this insight, the author proposes a framework of ethical considerations for social marketers when employing this technique, Figure 25.

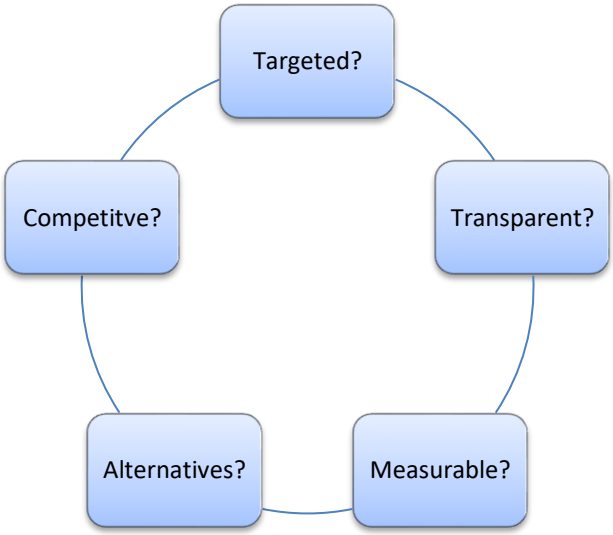


Figure 25. Ethical Considerations of Nudging

If social marketers are to use nudge techniques, five key ethical aspects should be considered: if the nudge is targeted, if it is transparent, if the nudge is measurable, if alternative courses of action have been considered and what the competition comprises of. By analysing FoP labels as a nudge, these five elements have been identified by the author as ethical considerations which social marketers may wish to consider when designing a campaign.

Targeted

If social marketers are to use nudge techniques, these should be specifically geared towards one specific group. The insight used to create nudges typically evolves around human biases and therefore neglects how specific groups will respond. As has been demonstrated here, complications arise when nudge tactics are designed in this untargeted fashion. As was found with FoP labels, those in lower social groups did not benefit in the same way as those in higher groups. What can be explicit and easy to use for one consumer to use, can be extremely difficult for others. Thus, social marketers need to pay extra attention to the target audience when employing nudge techniques.

Transparency

Nudges lack transparency due to their inherent design (Selinger & Whyte, 2011), whereas traditional social marketing campaigns are generally very direct and clear to consumers about their intended purpose. What is meant by transparency is an ability for consumers to adequately notice and understand the purpose of a nudge so as to contend it. There is a threat that adopting a technique which lacks transparency moves social marketers even closer towards government backed citizen manipulation (Chriss, 2015; Tadajewski et al., 2011), rather than, as recent social marketers claimed to be, the voice of the people (French & Gordon, 2015). Therefore, social marketers should consider how their use of nudges can be transparent and open to consumer engagement.

Measurability

As this research indicates, with each nudge there are likely to be unintended consequences due to a lack of effective measurability. Since nudges are designed as a blanket message to the masses, it's extremely difficult to assess the true impact that nudges are having. Social marketers must incorporate new methods of measurability into their design process when employing the use of nudges.

Alternatives

Thought should be given as to whether the promotion of a nudge technique is thwarting other, perhaps more stronger, alternatives. As this research has shown, nudges can appear harmless agents in the environment simply doing their bit to change behaviour, yet on

closer inspection they are draining resources away from more effective legislation change (House of Lords, 2011). If social welfare is the ultimate goal, social marketers should consider what course of action is best placed to achieve this and avoid any campaigns which counteract this.

Competition

Social marketers should consider the broader context in which the nudge will operate. What will be the competing forces working against the nudge in question, and will the nudge have sufficient powers to compete. Having considered FoP labels in the context of supermarkets it is evident that the impact that a nudge can have can be severely reduced by competing forces. There is an ethical concern over the appropriateness of ploughing resources into nudges which are "simultaneously neutralized by marketing strategies" (Junghans et al., 2015, p. 3). This was particularly evident in the case of FoP nudges, which are simultaneously counterbalanced by the aggressive nudges within supermarkets to consume nutrient poor foods. To refrain from this, social marketers may wish to consider nudges which target the competition rather than behaviour at an individual level.

This study demonstrates that together, these five issues compromise the original theoretical underpinnings of social marketing and hence deserve attention. Theoretical contributions are provided here in the form of a framework of ethical considerations of a nudge. A key implication of this framework is that provides a theoretical basis for future research exploring ethical aspects of nudge techniques and can be applied cross different settings to different nudges.

6 Chapter 6: Conclusions

6.1 Introduction

The final chapter of the thesis draws conclusions and makes recommendations. First a summary of the thesis is provided, including an outline of the aims and objectives as well as the methodological design. The gap in knowledge is restated and the proposed methods of filling this gap are explained. Next, the results are summarised and key contributions to knowledge are outlined. The limitations of the study as a whole are addressed, and finally, conclusions are drawn, and the implications of the research is discussed.

6.2 Summary of Thesis

This thesis analysed nudging as a social marketing technique, using Front of Pack (FoP) nutrition labels as an example of a nudge, by investigating the perceptions of Scottish female consumers aged between 30-40 years old, in terms of how they regard, understand and interpret food labels in a real-world context. Perceptions are defined within this study as the way in "which something is regarded, understood, or interpreted" (Brooks, 2008, p. 273). To achieve this aim, the following objectives were set: -

1. To review academic literature concerning social marketing, nudge practices, and consumers' perceptions of front of pack nutrition labels.
2. To conduct in-depth, semi-structured interviews as well as real-world observations with Scottish, female consumers, aged 30-40 years old in order to assess their perceptions of front of pack nutrition labels.

3. To apply these perceptions of front of pack labels to the context of nudging, in order to demonstrate if this example nudge operates effectively and draw insight for social marketers.

4. To draw practical as well as theoretical contributions within the field of nutrition, specifically food labelling, whilst contributing to the field of social marketing, specifically those considering a nudge technique.

Social marketing literature was first reviewed in order to establish the founding principles of this discipline and to better understand what led to the adoption of nudging as a behaviour change technique. In addition, literature concerning consumers' perceptions of FoP labels was reviewed, specifically what influences these perceptions and what impact these perceptions have upon label use. With so few studies conducted specifically within the UK using UK consumers, the scope was expanded to include European wide studies.

The gap in knowledge identified through this review was that at present it remains unclear how consumers perceive FoP labels in everyday contexts, and consequently it remains unclear if this nudge is perceived as intended. A lack of critique regarding social marketer's use of nudging was apparent.

At a methodological level, research had largely focussed on consumer comprehension of labels and neglected consumers' subjective interpretations, or perceptions. When perceptions had been assessed, the typical format was one of Likert scales, where consumers are asked to rate their accordance with pre-existing statements. Open ended, semi structed interviews had not explored the vast and varied perceptions that consumers hold towards FoP labels. Moreover, perceptions had not been explored in context. The environment of the supermarket and its influence upon perceptions of FoP labels had not been considered. Lastly, women as a unique and specific subset of the population were

rarely assessed in isolation, and instead student samples were relied upon for participant populations.

To address these gaps, a qualitative enquiry sought to uncover the perceptions of FoP labels among a diverse group of Scottish women. An interpretive constructionist approach was selected to guide the study. This paradigm recognises the inherent subjectivity involved in qualitative work. It does not steer away from subjectively but instead embraces it. The data collection was conducted in a real-world context using an ethnographic methodology and observations. Through this approach meaning is not thought of as objective, but instead it is constructed through language and interactions within a naturalistic context (O'Reilly & Kiymba, 2015). The aim was to hear the consumers' voice, recognise their individual life experiences and apply these to the context of nudging in order to demonstrate if this example nudge operates effectively and draw insight for social marketers. Contrary to prior literature consumers' subjective perceptions and beliefs were of interest.

By positioning the findings of the thesis into the wider context of public health policies and social marketing, FoP labels were considered a nudge in society. Because nudging is a controversial technique which has recently found prominence amongst some social marketers, there is a need to critique this practice before it becomes readily accepted into the social marketer's toolkit. The insight from this thesis is twofold. At one level the research can be explained as an exploration into consumers' perceptions of FoP labels. However, in doing so this also explores the broader sense of the practice of nudging and its appropriateness for social marketers.

Participants were purposively selected via a non-probability sampling technique to include women from varying social groups, since previous research had generally neglected the opinions of those from lower social groups. Participants were then

questioned specifically so as to address the research questions. Interview questions were drawn from the literature review which identified several gaps in knowledge. Two pilot observations and interviews were first conducted so as to assess the effectiveness of the chosen methodology and interview questions. A further twenty-six observations, think-aloud sessions and interviews were conducted.

All three data sets were then transcribed and analysed using thematic analysis. This involved creating categories and subcategories until clear themes had emerged. Relationships between these themes were noted and an explanation for each theme was sought from the literature review. The key themes that emerged were used to structure and present the phenomenon of perceptions of FoP labels and the implications for social marketers. These themes resulted in key contributions to knowledge will be explored in the following section.

6.3 Summary of Contributions

Ultimately the purpose of this thesis was to make contributions to knowledge in terms of how FoP labels are perceived and the implications of these perceptions for social marketers adopting a nudge technique. In support of the validity of this thesis – a journal article publication and numerous conference papers helps to demonstrate an interest in the research from the wider population. Contributions to knowledge derived from qualitative interpretive research typically arise in four key areas: development of concepts, generation of theory, drawing of specific implications, and contribution of rich insight (Walsham, 2006), each of which are discussed below.

6.3.1 Perceptions are Influenced by Context

First and foremost, by adopting an observation method it was apparent that use of FoP label information in situ is extremely limited. Not one participant appeared to glance at the FoP label scheme or mentioned them whilst performing 'think aloud' shopping. These findings add to limited number of studies which show the gulf between what research shows in labs (that consumers describe them in a positive light and are able to use them to make healthier consumption choices) and what is found in real-world studies – that generally labels are ignored (Enright et al., 2010; Grunert, Wills, et al., 2010; Higginson, Kirk, et al., 2002; Malam et al., 2009; Rayner et al., 2001; Steenhuis et al., 2004). What makes this study unique is that here the context was considered as a variable, rather than ignored. Rather than focussing on the individual or the label format specifically, consideration was given as to how the context influences perceptions.

The outcome of this study proposes a methodological contribution to the study of FoP labelling by arguing that in observing the context and discussing its role with consumers, the environment in which consumers are exposed to FoP labels plays a role in how they are perceived. Firstly, the abundance of nutrient-dense food, coupled with the incessant promotion of these items, made some women minimise the time they spent in supermarkets. Previous research has shown that if consumers feel under time pressure in a supermarket they are less likely to use nutritional information and instead will rely on habitual purchases (Koenigstorfer & Groeppel-Klein, 2010). This research suggests that the supermarket could be a *cause* for women to feel under time pressure. Ultimately how consumers experience the supermarket environment will impact the time spent assessing food labels.

In addition, a methodological contribution has been made here in the form of using 'think aloud' techniques in real world contexts to understanding perceptions of FoP food labels. Specifically, this study suggests that if labels are not made salient, as is typically done with lab-based studies, then consumers are unlikely to mention or consider them whilst food shopping. Through the think aloud techniques it was evident that consumers did not feel the FoP labels were of relevance to them and their needs. Interestingly, women would take the time to check country of origin, sell by dates, pesticide levels or simply to inspect the condition of the product, but none looked out for FoP labels.

This thesis has demonstrated the theoretical gains to be had within the field of FoP labelling, by operating under a constructionist paradigm which places value in subjective experiences. For example, a well-known paradox within the field of FoP labelling is the fact that that UK consumers generally report positive attitudes towards FoP labels, and have been shown to be able to use them adequately (EUFIC, 2015; Food Standards Agency, 2010; Grunert, 2016; Grunert, Fernández-Celemín, et al., 2010), but then do not appear to use them in the real world. A combination of 'think aloud' techniques with semi-structured interviews conducted immediately following the shop whilst remaining within the context of the supermarket enabled this paradox to be explored. One reoccurring theme that emerged naturally and prominently from participants was that FoP labels are useful, but for someone else. Participants assumed other people were making use of them. There was a perception that they are a good thing in society because 'someone out there' is likely benefiting from them. This finding has not been stated elsewhere in the literature. It can explain why consumers repeatedly rate FoP labels positively, yet their impact in the supermarket appears minimal.

6.3.2 Perceptions are Influenced by Directness of Label

The most prominent and widespread perception that shone through the data was the feeling that FoP labels are impractical and too confusing to make use of. Although this in itself is not new knowledge, as it is well established that consumers feel confused when using FoP labels, what this study offers, which isn't found in previous research is specific reasons as to why the confusion exists with the UK's label design. This was a gap in knowledge (Leek et al., 2015). By hearing from consumers directly and openly this thesis gained a better understanding of *why* consumers are confused. Previous research had tended to constrain confusion, examining it only, for example, in terms of comparing different label formats (Leek et al., 2015). From this study it is clear that the inherent design of the UK's GDA-TL causes issues. Firstly, consumers perceived labels to be confusing because they did not know what the percentage sign on the label was referring to. At times the percentage sign was interpreted as a target to be attained rather than a maximum level that should be avoided. The threat of this happening had been noted (Lobstein et al., 2007) and this study found evidence of it occurring. This study demonstrated that confusion is not limited solely to issues concerning label comprehension unbeknown to the consumer, but that confusion is wholly experienced by the consumer and an experience which leads to label avoidance altogether.

Secondly, confusion was caused by terminology used within labels. By terminology we refer not simply to terms such as 'reference intake' (although these were not understood, they were not noticed by all consumers) but instead to the basic use of 'per 100g' which many felt unable to use in a practical sense. Statements such as these were difficult for consumers to make use of and to contextualise into their everyday consumption practices. Lastly, confusion was caused by the sheer volume of numerical data stated on FoP labels. A typical encounter with a FoP label resulted in consumers reeling off a list of numerical

data without being able to put it into context. Thus, confusion is not simply found when consumers try to comprehend the information but exists at the very onset of label engagement. If consumers feel confused by information they are less likely to engage with it. This thesis contends that there is a possibility that the abundance of numerical data on FoP labels may do more harm than good.

6.3.3 Perceptions of Trust in Labels is Low

A key contribution, and an unexpected result was that, consumer's trust in FoP label information was low. This was surprising since initial reactions to FoP label information were positive. Although a systematic review of trust in labels exists, it explored trust in food certifications, GM labels and health claims (Tonkin et al., 2014), and of those that did look at trust in nutrition labels (6 in total), only one was conducted in the UK (Garretson & Burton, 2000). Importantly, this review concluded that there was a need to examine trust within the context of supermarkets, which has been done with the current research. What this study purports which hadn't been identified previously was a lack of trust in FoP labels specifically, because of misleading portion sizes. Consumers repeatedly pointed out that portion sizes were unrealistic and therefore the label as a whole could not be trusted. The danger of misleading portion sizes had been pointed out (Lobstein et al., 2007) and this study provides evidence that it is having a negative impact upon consumer's trust in labels as a whole. This outcome offers a theoretical contribution to the study of FoP labelling by aiding in our understanding of why they are used so infrequently.

This study is also unique in highlighting the impact that mistrust in the food industry as a whole has upon perceptions of food labels. Mistrust in the food industry and supermarkets

was another reason as to why trust in FoP food labels was low. Participants made reference to the fact that supermarkets were 'out to get them'. Similarly, some felt that the bright colours upon FoP labels were there simply to catch attention and sell more products.

6.3.4 Perceptions of Colour are Blurred

Finally, in terms of how FoP labels are perceived, crucial contributions have been made in the form of highlighting how the colour within labels is interpreted. It seems to have been assumed that since consumers are able to select a healthier shopping basket using traffic light labelling schemes simulation studies where they have been asked to select a healthy item, that this infers that consumers are able to use them adequately in real life. However, when provided the opportunity to expand on their perceptions of the meaning of these colours it is clear that they often incorrectly infer the red colour to signify 'avoid'. This command-like interpretation could help to explain why FoP labels are so infrequently made use of – because avoiding foods with red labels is impractical, more importantly it is unhealthy.

Having reviewed the basis for which FoP labels were introduced (Food Standards Agency, 2005, 2008; Lobstein et al., 2007), it appears as though a limited amount of research was conducted on UK consumers before the traffic light scheme was launched. Importantly only a handful appear to have been conducted in real-world contexts. This makes the adoption of the only colour coded FoP label in the world (bar South Korea) (EUFIC, 2015) somewhat surprising. Taubes (2016) is a prominent writer and critic of nutrition science, particularly the way in which nutrition studies are used to shape prevailing ideas around nutrition and health. One of his central ideas is that very little

rigorous scientific evidence is used to form the basis of huge sweeping generalisations within the field of nutrition. This may have been the case in the adoption of the GDA-TL labelling system. The results of this study certainly emphasis the need for more real-world research to be conducted in regards to FoP label use, in particular what behavioural responses each colours elicit.

Generally, however consumers appreciated the colour aspect of FoP labels. Comments were made that this element of the label meant that it could be used at a glance. The data from the observation fieldnotes, think aloud sessions and interviews revealed that despite this positive sentiment, FoP labels were not being used. This thesis offers explanations as to why that is the case by attempting to hear from the consumers' perspective rather than inferring from data sets – which is what typically occurs in the field of FoP label studies (Eden, 2011)

6.3.5 Perceptions are Influenced by Socioeconomic Status

This thesis contributes by answering calls to begin to unpack what role socioeconomic status plays in perceptions and use of FoP labels (Balcombe et al., 2010; Crockett et al., 2014; Lachat & Tseng, 2013; Scarborough, Matthews, et al., 2015). Two main contributions have been established in this regard, first in terms of the barriers faced by those of lower social groups and secondly in terms of how the concept of health influences label perceptions.

There were subtle but significant differences found between the data (fieldnotes/ interviews) of different social groups. In attempting to amalgamate what these differences mean collectively, it can be argued that within this study, women of different social

classes contextualised their health differently. These differences in perceptions of health ultimately and logically lead to differences in how FoP labels are perceived.

There were no differences found in terms of the value placed in FoP labels by different social groups, the majority, regardless of SES initially appreciated the presence of FoP labels. However, only three participants claimed to actually use FoP labels and all 3 were from higher socioeconomic groups. Differences did emerge when asked to consider their health in broad terms – 'What does it mean to be healthy'. Those from lower social groups were more likely to refer to avoiding unhealthy foods. Whereas those from higher social groups were more likely to refer to gaining nutritious foods. What these differences demonstrate is that the relevance of FoP labels will be different for different social groups.

Other key differences which arose were the pressures and priorities in mind when shopping. Those from lower social groups were more likely to reference the need to buy food which would be eaten by family members. This was a key concern, as was the need to shop on a budget, and select foods that last so as to avoid waste. In conjunction with this, differences emerged as to how the colours were interpreted with lower social groups more likely to view the red colour as a command to avoid consuming that food type. Whereas those from higher social groups perceived reds as a 'helpful warning sign'. Previous research had established differences in how different social groups understand and use FoP labels. Where this study contributes is in offering an explanation as to why this is the case.

If lower social groups perceive their health in terms of foods they have avoided and perceive the red coloured FoP labels to mean 'avoid', this could result in more pressure and ultimately a boomerang effect where the information is ignored altogether. There have been cautions of boomerang effects caused by FoP labels where consumers behave in completely the opposite way of the intended behaviour, for example by consuming

more reds (Budewig et al., 2004; Kleef & Dagevos, 2015). It has been shown that a feeling of guilt associated with FoP labels, reduces the likelihood of labels being used (Wahlich et al., 2012). Red labels are seen to indicate 'avoid', especially amongst those of lower social groups. Therefore, being unable to adhere to this advice may result in guilt and avoidance.

6.3.6 Perceptions are Influenced by Gender

The design of this study offers a methodological contribution to the study of FoP labelling by demonstrating the importance of examining specific subgroups of the population. Using a group of Scottish women based in Edinburgh as research sample, their unique and specific perceptions concerning FoP labels are uncovered. The intention of this piece of research is not to generalise, but instead to reflect the experiences of a unique and purposely selected sample, which is typically the goal of qualitative research (Bryman & Bell, 2015). Scottish women may have different concerns or reasons for behaviour than women in other parts of the country, thus it is necessary to identify the varying perceptions of different groups.

Rich insight was gleaned from this specific group which may help to explain why FoP labels receive so little attention within the supermarket. One theme to emerge from the data was the role of women as caregivers within the home. Within this study, it was found that this role need not be in reference to children only, but also to husbands and partners too. The feeling women had of themselves arose naturally and unprompted by a number of women within the study. This need to care and provide for loved ones often meant that there was an emphasis on foods that 'will be eaten'. There was a strong desire to fulfil

this duty, and there was a perception that eating mostly 'green' labelled foods would simply result in a hungry family.

There is a need to hear from women specifically in relation to health campaigns. "Policy decisions, are rarely based on the results of in-depth, qualitative studies but rely instead on broad, quantitative studies which do not necessarily reflect the heterogeneity of women" (Roosmalen & Loppie, 1999, p. 20). By speaking to women in isolation, it became clear that they had internalised their weight issues and blamed themselves. Attempting to lose weight was talked candidly of by most participants as well as their lack of willpower in avoiding high fat/ high sugar products. This was viewed as 'being bad'. Interestingly not one participant discussed external forces for these conditions but instead they themselves were always to blame. In a culture obsessed with body shapes, particularly those of women, it has been suggested that the constant pressure to be thin could ultimately be having a detrimental impact upon the effectiveness of health campaigns such as FoP labels (Mayes, 2014). This will be discussed further in section 6.3.8 *Social Marketers Use of Nudging*.

6.3.7 A Framework of Consumer's Perceptions of FoP Labels

By using the themes that emerged from this study in relation to perceptions of FoP labels, and building upon previous work (Nayga, 1999; Sijtsema et al., 2002), the author proposes an updated framework of 'Consumers' Perceptions of Food Labels', Figure 24.

The semi-structured, qualitative nature of this work means that the elements within the proposed framework have derived only as a result of examining the consumer's perspective. Unlike quantitative work which had been applied previously in order to generate a framework of consumers' perceptions of food labels (Nayga, 1999; Sijtsema

et al., 2002), where key aspects pertaining to the constructs being investigated could be missed, this thesis did not operate in a top-down fashion. Instead rich insight arose naturally from the data analysis.

Put simply, this framework (Figure 24) proposes that critical elements which impact upon consumer's perceptions of FoP labels include the environment, the label format and the individual's demography. It suggests that the environment can hinder how FoP labels are perceived in terms of trust and use-ability, that 'relevancy' plays a key role (the information on the labels must be relevant to consumers in terms of the message they convey) and lastly, that the label format in terms of its 'directness' as in how straight forward it is to consumers, is crucial. The most optimal FoP labelling format will be one in which consumers can readily engage with rather than have to spend time deciphering.

6.3.8 Social Marketers' Use of Nudging

Theoretical contributions to the discipline of social marketing have been made in the form of a critique of nudging – a practice recently adopted by social marketers, and a practice in need of critique (Pechmann & Slater, 2005; Tadajewski et al., 2011; Tadajewski & Brownlie, 2008; Wymer, 2015). This was done by applying the perceptions consumer's hold towards FoP labels to the context of nudging and assessing if this nudge operates as intended. Having done this, several concerns of this technique have been brought to bear. These are developed in section 5.7 *Examining nudging as a Social Marketing Technique.* This section involved making comparisons between the founding principles of social marketing (depicted in Section 2.2) with that of nudging as a technique for behaviour change. To the best of the authors knowledge, this is the first piece of research which attempts to directly compare the practice of social marketing with the principles of nudge

theory. This process helped to identify several dichotomies that arise between the two practices. For example, social marketing campaigns typically target a specific group of people with bespoke messages that will resonate with them (French & Gordon, 2015), in comparison nudges are generally not created with a specific target group in mind and are instead designed to act upon anyone that comes into contact with them. Having assessed perceptions of FoP labels, one concern of this untargeted approach is that those less in need of behaviour change benefit more. In the case of FoP labels, those of high social groups are repeatedly found to benefit more than those of lower social groups, and the findings of this study support this.

With these concerns (section 5.7) in mind, the author proposes a framework of ethical considerations for social marketers employing a nudge technique (section 5.7.8), and answers calls for the need for more ethical discourse around nudging (Raihani, 2013; Schubert, 2017).

Within this framework ethical considerations include, if the nudge is targeted, if the nudge is targeted, transparent, measurable, if alternative courses of action have been considered and what the competition comprises of. Here contributions have been made for in terms of the theoretical development of the practice of social marketing. Future research is required to empirically validate this framework. For example, it could be assessed to what extent transparent nudges work better than those designed to surreptitiously operate upon consumers – or what benefits there are in involving consumers in the design process of a nudge.

In positioning FoP labels in a broader context of nudges within society, the results demonstrate that nudges do not operate in accordance with their intended design. Although appreciated by the vast majority of women within this study, not one of the participants appeared to be able to engage with them in a meaningful way. They were

misinterpreted and cause unintended behaviours. A vast amount of public money can be spent on something with negligible impact. What this means for social marketers is that caution should be taken before adopting this tool. Moreover, the foundations on which nudges are built at times clash almost completely with that of principles of social marketing.

6.4 Limitations of Thesis

Overall this study achieved its aims in terms of establishing the perceptions of FoP labels of a group of Scottish women when observed in context, yet some unavoidable limitations occurred. Among these was the reliance upon people to explain their own perceptions and behaviour. Perceptions may arise due to wholly unconscious processes. Often people cannot account for their behaviour and thus create explanations rather than provide accurate accounts. To assist in overcoming this issue, the interviews were supplemented with observations in context. This enabled the research to observe 'true' responses to FoP labels in a real-world context. Moreover, of particular interest in this study was subjective experiences. The aim was not only to establish perceptions of FoP labels, but to highlight how these perceptions are experienced by consumers and how they influence FoP label use. Thus, the need to explore unconscious perceptions, through for example, an eye tracking measure, is reduced. Nonetheless, this limitation did impact the findings and analysis. At times, consumers struggled to explain why they perceived the labels in one way over another and this led to them guessing at times, why they felt one way or another.

In a similar vein, the choice of methods could be critiqued. Observations, particularly concerning human behaviour, comprise of a large amount of inferring and subjective

interpretation. Although no consumers were observed visually directing their attention towards FoP labels, they may have glanced at them, they may have reacted to them subconsciously, or they may have used them on previous shopping trips. This limitation may result in the actual impact of FoP labels being underreported. The decision to proceed with this method was in part due to the lack of observational studies which explore use of FoP labels. This method was needed to fill certain research gaps, despite its limitations. To compensate, consumers were offered the opportunity to discuss their reaction to FoP labels during the interview process. In addition, Malam et al. (2009) points out that by observing and then interviewing in quick succession, the researcher is more likely to extract an honest response from the participants.

Another limitation concerns the sample selection process. Initially, the intention was to have a consistent group of mothers, and so the participant requirements included having children. This was to provide consistency across participants so that comparisons could be made. However, this was not feasible in practice. Obtaining participants was challenging and since data saturation had not occurred with mothers only, it was decided that women without children would be permitted into the study too. Ultimately, this decision did not cause any issues during the observations or interviews as children were not discussed in much detail. The interviewer attempted to centre the focus of the conversations on the mothers themselves. However, despite no clear differences between mothers and non-mothers arising, still, being a mother will influence a women's perception of health as well as their perceptions of their role within the family. As most women in this study had children, it may account for why their role within the family as a caregiver emerged so strongly. Future research should consider how different groups within society respond to food labels differently, from young adults, single parents, to the elderly.

The purpose of this study was to examine perceptions of FoP labels in a broader sense than had been considered previously. As such elements of the environment and the individual were examined. To complement this exploratory style of research, participants were permitted to discuss FoP labels in whichever way they saw fit. However, in doing so, certain avenues were explored in more detail than others. The supermarket environment arose as a result of conducting the research in context. Women's' experiences arose as an issue that was discussed by the participants. However, other aspects of the wider context could have been considered for example, culture and its role in perceptions of FoP labels. Alternatively, more specific aspects of labels could have been explored, for example perceptions depending on product type. In essence, 'perception' is a very wide and varying aspect of behaviour to research. It is ill-defined in the literature, making this issue even more complex. Although the aim was to allow participants to describe their perceptions in an open style, they will have been influenced largely by what questions were asked during the interviews. To overcome this bias, the questions were drawn from gaps in the literature.

6.5 Broader Implications and Concluding Remarks

6.5.1 FoPs are Failing

The findings of this study demonstrate that in terms of acting as a nudge towards healthier food choices, FoP labels are failing. They are failing to elicit the appropriate response from consumers and therefore failing to encourage healthier food choices. The reasons for this failure are numerous and complex, of which this thesis alludes to several, but the resulting implications are grave. Unless promptly amended, FoP labels could be considered a drain of money and resources. This thesis does not argue for the abolishment of FoP label information, but it pleads for more reflection upon the environment in which they sit and the currently underused leverages available to enhance their effectiveness.

Considering, for example, the context of supermarkets – where FoP labels are positioned upon aggressively promoted junk foods, where misleading advertisements of nutrient-poor foods is ubiquitous. By taking this into account, the impact that FoP labels can have becomes questionable. Yet Governments have it within their powers to legislate against corporations and control this obesogenic environment, with far stronger regulations than a voluntary, FoP labelling scheme.

The mistakes made in allowing the tobacco industry to perpetually incite scepticisms, influence public opinion and lobby legislation, are still being felt today. This cannot be allowed to happen again with the food industry. We do not want to look back and question why more action was not taken. This study demonstrates that the presence of numerical GDA information upon food labels results in consumers feeling confused and unengaged.

The decision to include GDA information upon labels has, in part, resulted from the Government's attempts to 'work with' industry to improve our diets (The Scottish Government, 2011, 2015, 2018). Apparently ignorant of the irony, the Government called upon those who initiated the nation's weight issues, to help rectify them, a tactic which has unsurprisingly backfired. The food industry, adapt at misleading consumers, has spent millions of pounds lobbing the Government to ensure legislation around labelling remains voluntary, and crucially, pushing for the use of GDA information upon labels (Hawkes, 2007; Hickman, 2010; Peretti, 2012). With some arguing that the food industry's preferred label format, the GDA, is in fact purposefully used to confuse consumers (Lobstein et al., 2007). Regardless if this is the case, conflicts of interest must be recognised, and the powers of the food industry must be tapered. This thesis adds to the growing body of research calling for food labelling to be bolstered by stronger legislation at industry level (Jebb et al., 2013; Mozaffarian et al., 2018; Walls et al., 2011).

6.5.2 The Ideology of Nudging is Dangerous

Nudging, as a means to tackle public health issues such as obesity, only serve to perpetuate the ideology that such wicked problems can, and should, be tackled at an individual level. It may be argued that nudges merely form part of a multipronged approach, or that their use compliments the range of measures introduced to tackle such issues. However, the growing prevalence of nudging represents a shift in how we are governed, and this has implications for how we view ourselves within society and where we allocate responsibility.

When social marketers endorse this tool, they are reinforcing this ideology, which will have long term ramifications for the trajectory of the discipline. Within this study,

consumers were consistently self-blaming of their dietary choices and struggles to resist the temptations of energy dense foods. Despite discussing the battle of the supermarket environment, not one participant actually made the leap and placed any responsibility in their hands. More importantly, consumer's perceptions of FoP labels as a nudge were that that they are broadly a good thing, despite currently being too complex to make use of. This contradicting and deceptive characteristic of nudging is precisely why the technique must be critiqued.

Ostensibly nudges are harmless, they try to do their bit for the cause and if they fail – no harm done. Yet this ideology is dangerous. As Tadajewski et al. (2018, p.2) puts it, the mainstream perspective tends to be that 'everyone benefits from these sorts of exchanges in the marketplace, but these are false generalisations which do not stand up well when juxtaposed against the lived experiences of various groups'. The lived experiences of the women within this study revealed that not only are FoP labels ineffective and cause confusion, which in itself underlines their danger, but that at times led to feelings of guilt and shame, and ultimately personal responsibility. The discipline of social marketing may wish to distance itself from such effects.

6.5.3 Bottom-up Policies are Required

Qualitative research is lacking within the domain of FoP label research, and this study has demonstrated its value. Reliance upon quantitative metrics and pre-defined variables where behaviour is presupposed from the outset restricts what can be known about engagement with FoP labels. By giving the consumer's a voice, unexpected information was captured. This type of rich insight should be used to form policy in the future, or at the very least improve upon it.

Within this study, participants made valid suggestions as to how FoP label information could be made more applicable and appealing. For example, by using visual cues such as sugar cubes instead of grams, or an exercise counterpart required to burn off the calorie count, such as '20 minutes running'. Ultimately, for the vast majority of consumers within this study, regardless of socioeconomic status, critical elements of the label's intended message were lost. Consequently, a higher value should be placed on the subjective experiences and opinions of citizens. This is an area which social marketers claim to want develop – using consumer insight to shape and inform policy in a bottom-up fashion (French & Gordon, 2015). Yet nudges are designed to act upon broad brush human biases rather than any in-depth discussions with those who the nudge will act upon (Thaler & Sunstein, 2008).

The nuanced perceptions teased out within this study underscore the importance of designing policy from the perspective of the consumer. For example, this study identified crucial variances in how consumers perceive the colours on FoP labels in terms of the corresponding behaviour they believed it infers. It also draws attention to the role socioeconomic status in contextualising health and health messages. If policies were designed with a wider spectrum of consumers being heard, there may be less of a social bias found in how such campaigns operate, as has been notes here with those of higher social groups benefitting most.

6.5.4 An Opportunity for Social Marketers

Social marketing is at a crossroads. Nudging is typically discussed within the discipline in a nonchalant fashion, as a lesser option, but an option nonetheless, to achieve behaviour change (Hastings & Domegan, 2017). Its seen as an available method, but not quite a core

concept of social marketers (Tapp & Spotswood, 2013). Yet this passive way of viewing nudging has resulted in the general acceptance of its practice (NSMC, 2011). Instead, social marketers have an opportunity to make a stand against it, and the implications of this thesis provide support for this course of action.

This thesis has demonstrated that nudging can result in an abundance of unforeseen consequences. Moreover, it has identified that a dichotomy exists between the goals of social marketers and the practice of nudging (section 5.7). Increasingly, social marketing is playing a growing role in policy design, seen by Governments as an alternative to legislation change. Therefore, there is an opportunity for social marketers to take leadership in what sorts of policies are backed, and what sorts are rejected. Rather than blindly following in the adoption of certain practices without critique, social marketers should demand for policies which move away from personal responsibility. This thesis points to the detrimental ideologies of employing tools such as nudging. Ultimately, social marketers are 'in the business of behaviour change' (Lefebvre, 2012) yet the *behaviour* being targeted could instead be corporate. This represents an ideal opportunity for social marketers to harness the powers of their discipline in a new direction, to move upstream and fight the status quo.

7 Appendix

7.1 Flyer Advert

7.2 Interview Questions

Semi Structured Interview Questions

PhD aim: The purpose of this thesis is to an analyse 'nudging' as a social marketing technique, using Front of Pack (FoP) nutrition labels as an example of a nudge, by investigating the perceptions of Scottish female consumers aged between 30-40 years old, in terms of how they regard, understand and interpret food labels in a real-world context.

Interview protocol

- The broad goals of today are for me to try and understand your opinions towards food shopping and what sorts of things influence these.
- There are no right or wrong answers; it's all about me trying to understand your perspective so just try to explain your feelings as honestly and in as much detail as possible.
- Before we begin I have a consent form in which you are granting me permission to use your data anonymously. After you have read through this consent form, feel free to ask me any questions then please sign it if you agree.
- Do you have any questions? If at any point you wish to stop the interview process, please just say.

- If at any point in the future, you wish to withdraw your data then please let me know.

Section 1: The shop

1. Let's start with a general chat about the shop you just did. Was that a typical weekly shop for you?
2. Was there anything you bought for the first time?
3. What sorts of things are on your mind when you shop/ what are your priorities?
4. Would you say you enjoyed shopping?
5. [If there were any delays over choices] Ask about these

Section 2: FoP Label Use

1. What I was looking out for was your use of this label [point to GDA-TL label]
2. Do you recognise this label?
3. Do you know if you bought any products with it?
4. Do you ever use them? Why is that/what for?
5. In general, how do you feel in response to seeing these labels? Immediate emotional response.
6. In general, how would you say you behave or react in response to them?
7. If/ when you do use these labels what typically drives this use? /What do you gain from using them? /What info are you trying to glean? Why is that? For what purpose?
8. If/when you do not use them what would be the main reasons for this?
9. Have you considered how your respond to these previously?
10. Do you think these labels are able to inform you if a product is healthy or unhealthy?
11. Would you say these labels might change your purchasing decisions at all?
    - If yes – in what circumstances
    - If no – why
12. Where do you think these labels originate from or who has produced them?/ How does that influence your judgement?
13. Do you trust the information on the labels? Why?
14. Have you ever discussed them with friends and do you think they use them at all?

Section 3: FoP Label Interpretation

1. Next, I will show you two products displaying these labels. Please 'think aloud' everything that goes through your head in terms of how you might use the label to choose between the products.

2. Now I'll give you a specific item and I'd like you to actually try to interpret one aspect of the FoP label, e.g. level of fat. What is it telling you? Again, there is no right or wrong answers, I'm interested in your opinions and how you go about making sense of this info.

3. I will now explain to you how you are expected to use these labels, could you please then tell me your views on this method. Do you follow the process? Could you see yourself doing this in the future?

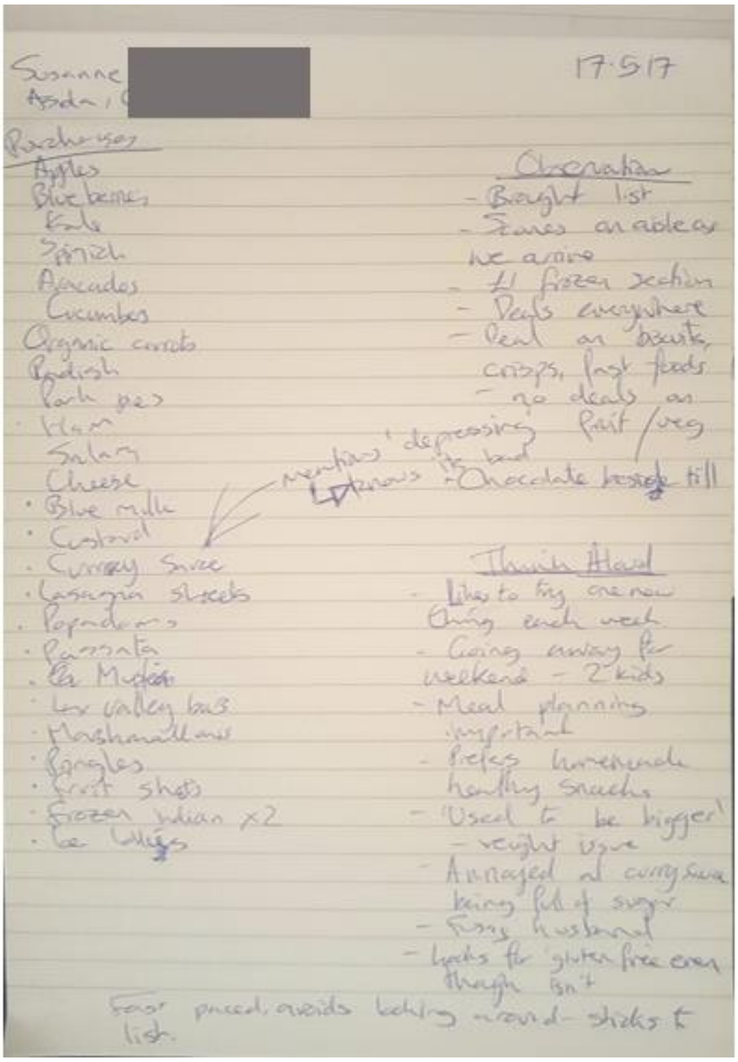
4. In terms of considering these as incentives to try to get us to eat better – do you think they are working or helping?

5. How could these labels be improved? Or what changes would mean you're more likely to use them?

Section 4: Your diet

1. Do you consider your own diet to be healthy? /What does being healthy mean to you?
2. Is there anything you'd like to change about your diet? Why is this important to you?
3. What do you consider to be the biggest barrier in achieving these changes?
4. If you were able to improve your diet what do you think the key benefits would be? And do you think labels could be part of that process?
5. Is there anything in your family's past or specific experiences which have made you pay specific attention to your diet?
6. Do you think diet is an issue to be concerned about? Why?
7. Where would you say you obtain most information about food and nutrition issues in general? As in which foods are good for you and which ones are less so?
8. In general, who would do you believe to be responsible diet? Why?

7.3 Observation Field Notes


Susanne [redacted] 17.5.17
Asda, [redacted]

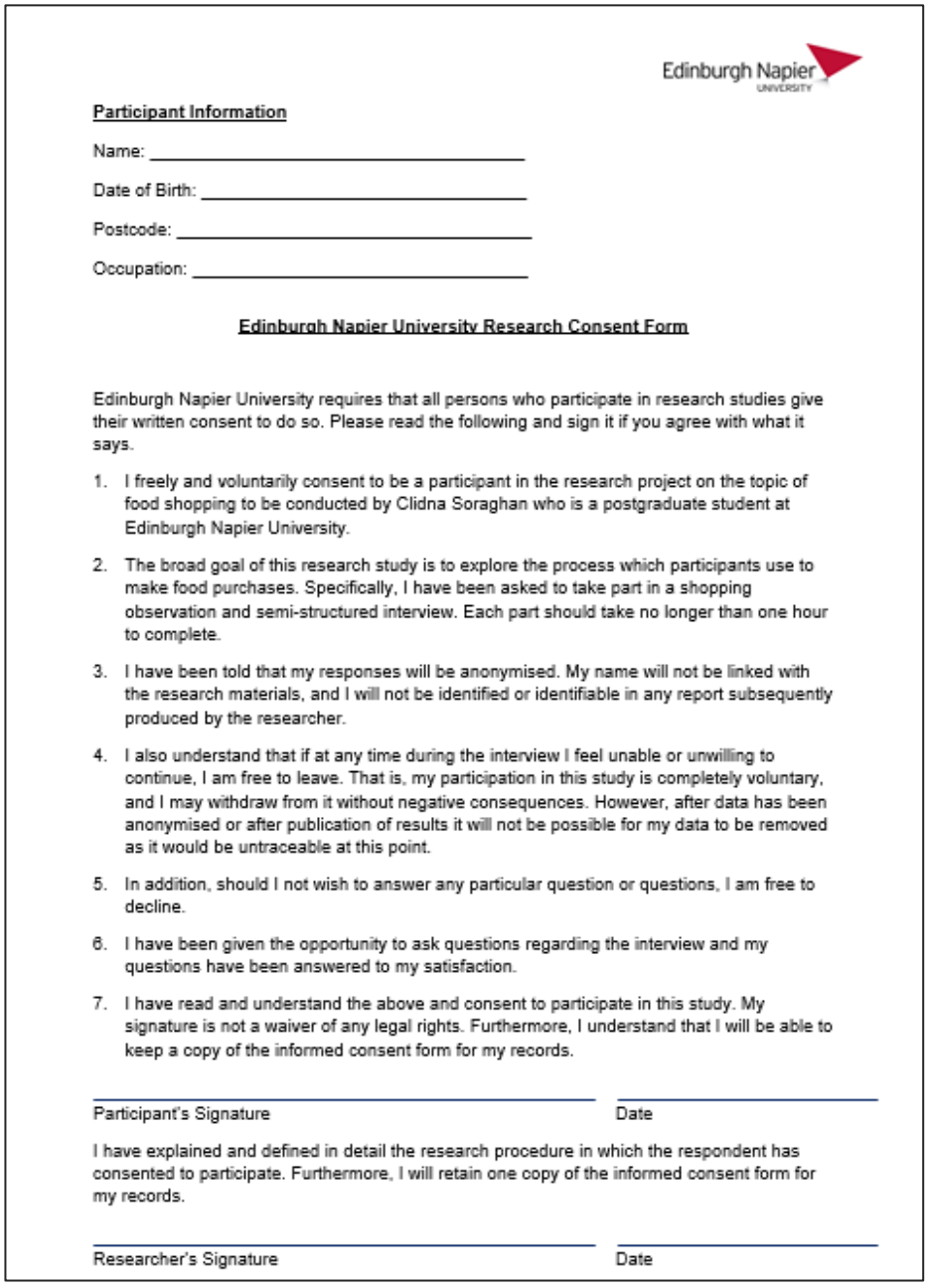
Purchases
Apples
Blueberries
Kale
Spinach
Avocados
Cucumbers
Organic carrots
Radish
Pork pies
· Ham
Salami
Cheese
· Blue milk
· Custard
· Curry Sauce
· Lasagna sheets
· Popadoms
· Passata
· Ice Muffin
· Lux valley bars
· Marshmallows
· Pringles
· Fruit shots
· Frozen Indian x2
· Ice Lollies

Observation
- Brought list
- Scarves on aisle as we arrive
- £1 frozen section
- Deals everywhere
- Deal on biscuits, crisps, fast foods
- no deals on fruit / veg
mentions 'depressing' is bad
knows
- Chocolate beside till

Think Aloud
- Likes to try one new thing each week
- Going away for weekend - 2 kids
- Meal planning important
- Prefers homemade healthy snacks
- 'Used to be bigger'
- weight issue
- Annoyed at curry sauce being full of sugar
- Fussy husband
- Looks for gluten free even though isn't

Fast paced, avoids looking around - sticks to list.

7.4 Participant Consent form



Edinburgh Napier UNIVERSITY

Participant Information

Name: _____

Date of Birth: _____

Postcode: _____

Occupation: _____

Edinburgh Napier University Research Consent Form

Edinburgh Napier University requires that all persons who participate in research studies give their written consent to do so. Please read the following and sign it if you agree with what it says.

1. I freely and voluntarily consent to be a participant in the research project on the topic of food shopping to be conducted by Clidna Soraghan who is a postgraduate student at Edinburgh Napier University.
2. The broad goal of this research study is to explore the process which participants use to make food purchases. Specifically, I have been asked to take part in a shopping observation and semi-structured interview. Each part should take no longer than one hour to complete.
3. I have been told that my responses will be anonymised. My name will not be linked with the research materials, and I will not be identified or identifiable in any report subsequently produced by the researcher.
4. I also understand that if at any time during the interview I feel unable or unwilling to continue, I am free to leave. That is, my participation in this study is completely voluntary, and I may withdraw from it without negative consequences. However, after data has been anonymised or after publication of results it will not be possible for my data to be removed as it would be untraceable at this point.
5. In addition, should I not wish to answer any particular question or questions, I am free to decline.
6. I have been given the opportunity to ask questions regarding the interview and my questions have been answered to my satisfaction.
7. I have read and understand the above and consent to participate in this study. My signature is not a waiver of any legal rights. Furthermore, I understand that I will be able to keep a copy of the informed consent form for my records.

_____ _____

Participant's Signature Date

I have explained and defined in detail the research procedure in which the respondent has consented to participate. Furthermore, I will retain one copy of the informed consent form for my records.

_____ _____

Researcher's Signature Date

8 References

Andreasen, A. R. (1995). *Marketing social change: changing behavior to promote health, social development, and the environment*. San Francisco: Jossey-Bass.

Andreasen, A. R. (2002). Marketing Social Marketing in the Social Change Marketplace. *Journal of Public Policy & Marketing*, *21*(1), 3–13. http://doi.org/http://dx.doi.org/10.1509/jppm.21.1.3.17602

Andreasen, A. R. (2003). The Life Trajectory of Social Marketing. *Marketing Theory*, *3*(3), 293–303. http://doi.org/10.1177/147059310333004

Andreasen, A. R. (2006). *Social Marketing in the 21st Century*. Thousand Oaks, California: Sage Publications, Inc.

Andrews, C. J., Burton, S., & Kees, J. (2011). Is Simpler Always Better? Consumer Evaluations of Front-of-Package Nutrition Symbols. *Journal of Public Policy*, *4*(3), 237–259. http://doi.org/https://doi.org/10.1509/jppm.30.2.175

Aschemann-Witzel, J., Grunert, K. G., Trijp, H., Bialkova, S., Raats, M. M., Hodgkins, C., … Koenigstorfer, J. (2013). Effects of nutrition label format and product assortment on the healthfulness of food choice. *Appetite*, *71*, 63–74. http://doi.org/10.1016/j.appet.2013.07.004

Azad, T. (2019). To Nudge or Not to Nudge : Competition in Retail Financial Services. *Alvarez & Marsal*, 9–11. Retrieved from https://www.alvarezandmarsal.com/insights/nudge-or-not-nudge-competition-retail-financial-services

Bagozzi, R. P. (1975). Social exchange in marketing. *Journal of the Academy of Marketing Science*, *3*(3–4), 314–327. http://doi.org/10.1007/BF02729292

Baker, C. (2015). *Obesity Statistics*. *National Obesity Observatory*. House of Commons Library. Retrieved from www.noo.org.uk/NOO_about_obesity/mortality

Balcombe, K., Fraser, I., & Falco, S. (2010). Traffic lights and food choice: A choice experiment examining the relationship between nutritional food labels and price. *Food Policy*, *35*(3), 211–220. http://doi.org/10.1016/j.foodpol.2009.12.005

Baldwin, R. (2014). From Regulation to Behaviour Change: Giving Nudge the Third Degree. *The Modern Law Review*, *77*(6), 831–857. http://doi.org/10.1111/1468-2230.12094

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. http://doi.org/10.1037/0033-295X.84.2.191

Bauhardt, C., Meike, B., & Caglar, G. (2015). Understanding consumer behaviour: the social embeddedness of food practices. In *Paper prepared for presentation at the Agricultural & Applied Economics Association Conference. "Consumer Behavior in a Changing World: Food, Culture, Society"* (pp. 1–25). Naples, Italy. Retrieved from https://ageconsearch.umn.edu/bitstream/202713/2/141.pdf

Bawden, T. (2017). Britain has the worst diet in Europe. *INews: Essential Daily Breifing*. Retrieved from https://inews.co.uk/news/health/official-britain-worst-diet-europe/

Becker, M. W., Sundar, R. P., Bello, N., Alzahabi, R., Weatherspoon, L., & Bix, L.

(2016). Assessing attentional prioritization of front-of-pack nutrition labels using change detection. *Applied Ergonomics*, *54*, 90–99. http://doi.org/10.1016/j.apergo.2015.11.014

Benelam, B. (2013). *British Nutrition Foundation, Response to Governmen't Consultation on the Balance of EU Competences*. London, British Nutrition Foundation. Retrieved from https://www.gov.uk/government/consultations/review-of-the-balance-of-competences-health

Berg, B. (2004). *Qualitative Research Methods*. California, Long Beach: Pearson Education, Inc.

Bernard, H. R. (2013). *Social research methods : qualitative and quantitative approaches*. London: SAGE Publications.

Berning, J. P., Chouinard, H. H., Manning, K. C., McCluskey, J. J., & Sprott, D. E. (2010). Identifying consumer preferences for nutrition information on grocery store shelf labels. *Food Policy*, *35*(5), 429–436. http://doi.org/10.1016/j.foodpol.2010.05.009

Berry, R. S. Y. (1999). Collecting data by in-depth interviewing. In *Paper presented at The British Educational Research Association Annual Conference, University of Sussex* (pp. 1–6). Brighton, UK: Education-line. Retrieved from http://www.leeds.ac.uk/educol/documents/000001172.htm

Bettany, S., & Burton, H. W. (2006). *Working Paper: Steps towards transformative consumer research practice: A taxonomy of possible reflexivities* (No. 06/07). *Association for Consumer Research* (Vol. 33). Bradford University School of Management, Duluth, Minnesota.

Bettany, S., & Woodruffe-Burton, H. (2009). Working the limits of method: the possibilities of critical reflexive practice in marketing and consumer research. *Journal of Marketing Management*, *25*(7–8), 661–679. http://doi.org/10.1362/026725709X471550

Bevelander, K. E., Anschütz, D. J., & Engels, R. C. M. E. (2012). Social norms in food intake among normal weight and overweight children. *Appetite*, *58*(3), 864–872. http://doi.org/10.1016/j.appet.2012.02.003

Bialkova, S., Grunert, K. G., & Trijp, H. (2013). Standing out in the crowd: The effect of information clutter on consumer attention for front-of-pack nutrition labels. *Food Policy*, *41*, 65–74. http://doi.org/10.1016/j.foodpol.2013.04.010

Bialkova, S., & Trijp, H. C. M. (2011). An efficient methodology for assessing attention to and effect of nutrition information displayed front-of-pack. *Food Quality and Preference*, *22*(6), 592–601. http://doi.org/10.1016/j.foodqual.2011.03.010

Bisogni, C. A., Jastran, M., Seligson, M., & Thompson, A. (2012). How People Interpret Healthy Eating: Contributions of Qualitative Research. *Journal of Nutrition Education and Behavior*, *44*(4), 282–301. http://doi.org/10.1016/j.jneb.2011.11.009

Black, A., & Rayner, M. (1992). *Just Read the Label: Understanding Nutrition Information in Numeric, Verbal and Graphic Formats*. London: Stationery Office Books.

Blitstein, J. L., & Evans, W. D. (2006). Use of nutrition facts panels among adults who

make household food purchasing decisions. *Journal of Nutrition Education and Behavior*, *38*(6), 360–4. http://doi.org/10.1016/j.jneb.2006.02.009

Borden, N. H. (1964). The Concept of the Marketing Mix. *Journal of Advertising Research*, *2*(Classics), 7–12.

Borgmeier, I., & Westenhoefer, J. (2009). Impact of different food label formats on healthiness evaluation and food choice of consumers: a randomized-controlled study. *BMC Public Health*, *9*(184), 1–12. http://doi.org/10.1186/1471-2458-9-184

Boseley, S. (2014). The truth about obesity: 10 shocking things you need to know. *The Guardian*. Retrieved from http://www.theguardian.com/lifeandstyle/2014/jun/23/truth-about-obesity-10-shocking-things-need-to-know

Brian, K. (2012). Maths anxiety: the numbers are mounting. *The Guardian*. Retrieved from http://www.theguardian.com/education/2012/apr/30/maths-anxiety-school-support

British Medical Association. (2012). *Behaviour change, public health and the role of the state*. *BMA*. London, UK. Retrieved from https://www.evidence.nhs.uk/document?id=1607767&returnUrl=Search%3Fps%3D30%26q%3DHealth%2Bbehaviour&q=Health+behaviour

Brooks, I. (2008). *Organizational behaviour: individuals, groups and organisation* (5th Ed.). Essex, England: Pearson Education, Inc.

Brug, J., Kremers, S. P., Lenthe, F. Van, Ball, K., & Crawford, D. (2008). Environmental determinants of healthy eating: In need of theory and evidence. *Proceedings of the Nutrition Society*, *67*(3), 307–316. http://doi.org/10.1017/S0029665108008616

Bryman, A., & Bell, E. (2015). *Business Research Methods* (4th ed.). Oxford: Oxford University Press.

Buckton, C. H., Lean, M. E. J., & Combet, E. (2015). Language is the source of misunderstandings– impact of terminology on public perceptions of health promotion messages. *BMC Public Health*, *15*(1), 579. http://doi.org/10.1186/s12889-015-1884-1

Budewig, K., Crawford, F., Hamlet, N., Hanlon, P., Muirie, J., & Ogilvie, D. (2004). Obesity in Scotland: why diets, doctors and denial won't work. *Stories for Health in the 21st Century*. Retrieved from http://www.ogilvie.fastmail.co.uk/healthyfuture/obesity.html#ref44

Burrows, D. (2016). No credible evidence: UK hits back at MEPs over traffic light labels. *Food Navigator*. Retrieved from http://www.foodnavigator.com/Policy/No-credible-evidence-UK-hits-back-at-MEPs-over-traffic-light-labels

Campos, S., Doxey, J., & Hammond, D. (2011). Nutrition labels on pre-packaged foods: a systematic review. *Public Health Nutrition*, *14*(8), 1496–1506. http://doi.org/10.1017/S1368980010003290

Carins, J. E., & Rundle-Thiele, S. R. (2013). Eating for the better: a social marketing review (2000-2012). *Public Health Nutrition*, *17*(7), 1–12. http://doi.org/10.1017/S1368980013001365

Carter, S. M., & Little, M. (2007). Taking Action: Epistemologies, Methodologies, and Methods in Qualitative Research. *Qualitative Health Research*, *17*(10), 1316–28. http://doi.org/10.1177/1049732307306927

Castle, A. (2015). *The Scottish Parliament, Obesity in Scotland, SPICe Briefing*. The Scottish Parliament, Edinburgh. Retrieved from http://www.parliament.scot/ResearchBriefingsAndFactsheets/S4/SB_15-01_Obesity_in_Scotland.pdf

Cecchini, M., & Warin, L. (2016). Impact of food labelling systems on food choices and eating behaviours: A systematic review and meta-analysis of randomized studies. *Obesity Reviews*, *17*(3), 201–210. http://doi.org/10.1111/obr.12364

Charters, E. (2003). The Use of Think-aloud Methods in Qualitative Research An Introduction to Think-aloud Methods. *Brock Education Journal*, *12*(2), 68–82. http://doi.org/10.26522/brocked.v12i2.38

Chau, J. Y., McGill, B., Thomas, M. M., Carroll, T. E., Bellew, W., Bauman, A., & Grunseit, A. C. (2018). Is this health campaign really social marketing? A checklist to help you decide. *Health Promotion Journal of Australia*, *29*(1), 79–83. http://doi.org/10.1002/hpja.13

Cheftel, J. C. (2005). Food and nutrition labelling in the European Union. *Food Chemistry*, *93*(3), 531–550. http://doi.org/10.1016/j.foodchem.2004.11.041

Chriss, J. (2015). Nudging and Social Marketing. *Society*, *52*(1), 54–61. http://doi.org/10.1007/s12115-014-9858-y

Chriss, J. (2016). Influence, Nudging, and Beyond. *Society*, *53*(1), 89–96. http://doi.org/10.1007/s12115-015-9975-2

Cioffi, C. E., Levitsky, D. A., Pacanowski, C. R., & Bertz, F. (2015). A nudge in a healthy direction. The effect of nutrition labels on food purchasing behaviors in university dining facilities. *Appetite*, *92*, 7–14. http://doi.org/10.1016/j.appet.2015.04.053

Cook, J. A., & Fonow, M. M. (1986). Knowledge and Women's Interests: Issues of Epistemology and Methodology in Feminist Sociological Research. *Sociological Inquiry*, *56*(1), 2–29. http://doi.org/10.1111/j.1475-682X.1986.tb00073.x

Cooke, R., & Papadaki, A. (2014). Nutrition label use mediates the positive relationship between nutrition knowledge and attitudes towards healthy eating with dietary quality among university students in the UK. *Appetite*, *83*, 297–303. http://doi.org/10.1016/j.appet.2014.08.039

Coveney, J. (2005). A qualitative study exploring socio-economic differences in parental lay knowledge of food and health: implications for public health nutrition. *Public Health Nutrition*, *8*(3), 290–297. http://doi.org/10.1079/PHN2004682

Cowburn, G., & Stockley, L. (2005). Consumer understanding and use of nutrition labelling: a systematic review. *Public Health Nutrition*, *8*(1), 21–28. http://doi.org/10.1079/PHN2005666

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA, CA: Sage.

Crockett, R. A., Jebb, S. A., Hankins, M., & Marteau, T. M. (2014). The impact of

nutritional labels and socioeconomic status on energy intake. An experimental field study. *Appetite*, *81*, 12–19. http://doi.org/10.1016/j.appet.2014.05.024

Crockett, R. A., King, S. E., Marteau, T. M., Prevost, A. T., Bignardi, G., Roberts, N. W., … Jebb, S. A. (2018). Nutritional labelling for healthier food or non-alcoholic drink purchasing and consumption. *Cochrane Database of Systematic Reviews*, (2), 1–125. http://doi.org/10.1002/14651858.CD009315.pub2.

Crosetto, P., Muller, L., & Ruffieux, B. (2016). Helping consumers with a front-of-pack label: Numbers or colors? *Journal of Economic Psychology*, *55*, 30–50. http://doi.org/10.1016/j.joep.2016.03.006

Cruz-Góngora, V., Torres, P., Contreras-Manzano, A., Jáuregui de la Mota, A., Mundo-Rosas, V., Villalpando, S., & Rodríguez-Oliveros, G. (2017). Understanding and acceptability by Hispanic consumers of four front-of-pack food labels. *International Journal of Behavioral Nutrition and Physical Activity*, *14*(1), 1–12. http://doi.org/10.1186/s12966-017-0482-2

Dann, S. (2010). Redefining social marketing with contemporary commercial marketing definitions. *Journal of Business Research*, *63*(2), 147–153. http://doi.org/10.1016/j.jbusres.2009.02.013

Darley, W. K., & Smith, R. E. (1995). Gender Differences in Information Processing Strategies: An Empirical Test of the Selectivity Model in Advertising Response. *Journal of Advertising*, *24*(1), 41–56. http://doi.org/10.1080/00913367.1995.10673467

Darmon, N., & Drewnowski, A. (2008). Does social class predict diet quality? *American Journal of Clinical Nutrition*, *87*(5), 1107–1117. http://doi.org/10.1093/ajcn/87.5.1107

Darmon, N., & Drewnowski, A. (2015). Contribution of food prices and diet cost to socioeconomic disparities in diet quality and health : a systematic review and analysis, *73*(10), 643–660. http://doi.org/10.1093/nutrit/nuv027

Dean, M., Spence, M., Hodgkins, C., & Raats, M. M. (2015). Front-of-pack (FOP) labelling of foods and beverages. In *Advances in Food and Beverage Labelling* (pp. 113–131). Surrey, UK: Elsevier.

Denzin, N. K. (1988). *The research act: A theoretical introduction to sociological methods*. New York: Prentice-Hall.

Department of Health. (2013). *Living Well for Longer: A call to action to reduce avoidable premature mortality*. National Archives, UK Government. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/181103/Living_well_for_longer.pdf

Dibb, S. (2014). Up, up and away: social marketing breaks free. *Journal of Marketing Management*, *30*(11), 1159–1185. http://doi.org/10.1080/0267257X.2014.943264

Dibb, S., & Carrigan, M. (2013). Social marketing transformed. *European Journal of Marketing*, *47*(9), 1376–1398. http://doi.org/10.1108/EJM-05-2013-0248

Dobson, P. W., & Gerstner, E. (2010). For a Few Cents More: Why Supersize Unhealthy Food? *Marketing Science*, *29*(4), 770–778. http://doi.org/10.1287/mksc.1100.0558

Domegan, C., McHugh, P., Devaney, M., Duane, S., Hogan, M., Broome, B. J., … Piwowarczyk, J. (2016). Systems-thinking social marketing: conceptual extensions and empirical investigations. *Journal of Marketing Management*, *32*(11–12), 1123–1144. http://doi.org/10.1080/0267257X.2016.1183697

Donovan, R. (2011). Social marketing's mythunderstandings. *Journal of Social Marketing*, *1*(1), 8–16. http://doi.org/10.1108/20426761111104392

Donovan, R., & Henley, N. (2003). *Social Marketing: Principles and Practice*. Melbourne: IP Communications.

Draper, A. K., Adamson, A. J., Clegg, S., Malam, S., Rigg, M., & Duncan, S. (2011). Front-of-pack nutrition labelling: Are multiple formats a problem for consumers? *European Journal of Public Health*, *23*(3), 517–521. http://doi.org/10.1093/eurpub/ckr144

Drescher, L. S., Roosen, J., & Marette, S. (2014). The effects of traffic light labels and involvement on consumer choices for food and financial products. *International Journal of Consumer Studies*, *38*(3), 217–227. http://doi.org/10.1111/ijcs.12086

Drichoutis, A. C., Lazaridis, P., & Nayga, R. M. (2005). Nutrition knowledge and consumer use of nutritional food labels. *European Review of Agricultural Economics*, *32*(1), 93–118. http://doi.org/10.1093/erae/jbi003

Drichoutis, A. C., Lazaridis, P., Nayga, R. M., Kapsokefalou, M., & Chryssochoidis, G. (2008). A theoretical and empirical investigation of nutritional label use. *European Journal of Health Economics*, *9*(3), 293–304. http://doi.org/10.1007/s10198-007-0077-y

Ducrot, P., Julia, C., Mejean, C., Kesse-Guyot, E., Touvier, M., Fezeu, L. K., … Peneau, S. (2016). Impact of different front-of-pack nutrition labels on consumer purchasing intentions: A randomized controlled trial. *American Journal of Preventive Medicine*, *50*(5), 627–636. http://doi.org/10.1016/j.amepre.2015.10.020

Eden, S. (2011). Food labels as boundary objects: how consumers make sense of organic and functional foods. *Public Understanding of Science*, *20*(2), 179–194. http://doi.org/10.1177/0963662509336714

Ellen, R. F. (1984). *Ethnographic Research*. New York: Academic Press.

Emrich, T. E., Qi, Y., Cohen, J. E., Lou, W. Y., & L'Abbe, M. L. (2015). Front-of-pack symbols are not a reliable indicator of products with healthier nutrient profiles. *Appetite*, *84*, 148–153. http://doi.org/10.1016/j.appet.2014.09.017

Emrich, T. E., Qi, Y., Mendoza, J. E., Lou, W., Cohen, J. E., & L'Abbé, M. R. (2014). Consumer perceptions of the Nutrition Facts table and front-of-pack nutrition rating systems. *Applied Physiology, Nutrition, and Metabolism*, *39*(4), 417–424. http://doi.org/10.1139/apnm-2013-0304

Enright, G., Good, H., & Williams, N. (2010). *Qualitative Research to Explore Peoples Use of Food Labelling Information*. Ipsos MORI, Food Standards Agency. Retrieved from https://nanopdf.com/download/qualitative-research-to-explore-peoples-use-of-food-labelling_pdf

Ensaff, H., Homer, M., Sahota, P., Braybrook, D., Coan, S., & McLeod, H. (2015). Food Choice Architecture: An Intervention in a Secondary School and its Impact on

Students' Plant-based Food Choices. *Nutrients*, *7*(6), 4426–37. http://doi.org/10.3390/nu7064426

Epps, E. M., Downs, J. S., & Loewenstein, G. (2016). Calorie Label Formats: Using Numeric and Traffic Light Calorie Labels to Reduce Lunch Calories. *Journal of Public Policy & Marketing*, *35*(1), 26–36. http://doi.org/10.1509/jppm.14.112

EUFIC. (2009). *Nutrition information on food labels – is it read and understood?* Brussels, Belgium: European Food Information Council. Retrieved from http://www.eufic.org/article/en/nutrition/food-labelling-claims/artid/Nutrition-information-food-labels-read-understood/

EUFIC. (2015). *Global Update on Nutrition Labelling*. Brussels, Belgium: European Food Information Council. Retrieved from http://www.eufic.org/upl/1/default/doc/GlobalUpdateExecSumJan2015.pdf

EUFIC. (2017). *Global Update on Nutrition Labelling*. Brussels, Belgium: European Food Information Council. Retrieved from http://www.eufic.org/images/uploads/files/GUNL-2017-exsummary.pdf

EUFIC. (2018). *Global update on nutrition labelling*. Brussels, Belgium: European Food Information Council. Retrieved from file://o/Abt-RM/InfoM/Bibliothek/B?CHERVERWALTUNG/e-books/EUFIC_2013_GlobalUpdateNutritionLabelling_Feb2013_FINAL.pdf

European Commission. (2007). *Strategy on nutrition, overweight and obesity-related health issues*. Europa, EU. Retrieved from https://ec.europa.eu/health/nutrition_physical_activity/policy/strategy_en

European Food Safety Authority. (2008). *Conference Proceedings on Nutrition and Health Claims*. EFSA, Bologna, Italy. Retrieved from https://www.efsa.europa.eu/en/events/event/061110

European Union. (2011). *EU Regulation No 1169/2011 of the European Parliament and of the Council on the provision of food information to consumers*. Europa, EU. Retrieved from http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32011R1169

Fetterman, A. K., Robinson, M. D., Gordon, R. D., & Elliot, A. J. (2011). Anger as Seeing Red: Perceptual Sources of Evidence. *Social Psychological and Personality Science*, *2*(3), 311–316. http://doi.org/10.1177/1948550610390051

Feunekes, G. I. J., Gortemaker, I. a., Willems, A. a., Lion, R., & Kommer, M. (2008). Front-of-pack nutrition labelling: Testing effectiveness of different nutrition labelling formats front-of-pack in four European countries. *Appetite*, *50*(1), 57–70. http://doi.org/10.1016/j.appet.2007.05.009

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading: Addison-Wesley.

Fisher, R. J., & Katz, J. E. (1993). Social desirability bias and the validity of self-reported values. *Journal of Consumer Research*, *20*, 303–315. http://doi.org/10.1002/(SICI)1520-6793(200002)17

Fitzpatrick, I., MacMillan, T., Hawkes, C., Anderson, A., & Dowler, E. (2010). *Understanding food culture in Scotland and its comparison in an international*

context. Edinburgh, NHS Health Scotland. Retrieved from https://www.communityfoodandhealth.org.uk/wp-content/uploads/2011/04/nhshsfoodculturescotlandreport-2443.pdf

Food Standards Agency. (2004). *Concept testing of alternative labelling of healthy/less healthy foods*. Chalfont St Peter, England. Retrieved from http://www.food.gov.uk/multimedia/pdfs/alternlab.pdf

Food Standards Agency. (2005). *Qualitative Signpost Labelling Refinement Research Report of Findings*. Kent, UK. Retrieved from http://webarchive.nationalarchives.gov.uk/20131104005023/http://www.food.gov.uk/multimedia/pdfs/signpostqualresearch.pdf

Food Standards Agency. (2008). *Consumer Attitudes to Food Standards: Wave 8 UK Report*. London, UK. Retrieved from https://www.food.gov.uk/sites/default/files/media/document/food-and-you-w8-dev-report.pdf

Food Standards Agency. (2010). *Citizens' forums on food: Front of Pack (FoP) Nutrition Labelling*. London, UK. Retrieved from https://www.food.gov.uk/multimedia/pdfs/citforumfop.pdf.

Food Standards Agency. (2016). *Front-of-pack nutrition labelling: Revised front of pack nutrition labelling guidance*. Retrieved from https://www.foodstandards.gov.scot/publications-and-research/publications/guide-to-creating-a-front-of-pack-nutrition-label-for-pre-packed-products-s

Food Standards Agency. (2017). *The "Food and You" survey: Wave 4 UK Report*. UK. Retrieved from https://www.food.gov.uk/sites/default/files/media/document/food-and-you-w8-dev-report.pdf

Fournier, V., & Grey, C. (2000). At the Critical Moment: Conditions and Prospects for Critical Management Studies. *Human Relations*, *53*(1), 7–32. http://doi.org/10.1177/0018726700531002

Fox, K. F., & Kotler, P. (1980). The marketing of social causes: the first 10 years. *Journal of Marketing*, *44*, 24–33. http://doi.org/10.2307/1251226

Foxall, G. R., Goldsmith, R. E., & Brown, S. (1998). *Consumer Psychology for Marketing*. Hampshire, UK: Cengage Learning EMEA.

French, J. (2011). Why nudging is not enough. *Journal of Social Marketing*, *1*(2), 154–162. http://doi.org/10.1108/20426761111141896

French, J. (2013). *Consensus Definition of Social Marketing*. International Social Marketing Association. Retrieved from https://www.i-socialmarketing.org/assets/social_marketing_definition.pdf

French, J., Blair-Stevens, C., McVey, D., & Merritt, R. (2009). *Social Marketing and Public Health: Theory and practice*. Oxford, UK, UK: Oxford University Press.

French, J., & Gordon, R. (2015). *Strategic Social Marketing*. London: Sage Publications Ltd.

Frieden, T. R., Dietz, W., & Collins, J. (2010). Reducing Obesity Childhood Through Policy Change : Acting Now To Prevent Obesity. *Health Affairs*, *29*(3), 357–363.

http://doi.org/10.1377/hlthaff.2010.0039

Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, *20*(9), 1408–1416. http://doi.org/1, 1408-1416

Gans, H. J. (1968). The participant-observer as human being: Observations on the personal aspects of field work. In *Becker, S. H., and Hughes, E. C. Institutions and the person* (pp. 300–317). Chicago: Aldine.

Garretson, J. a., & Burton, S. (2000). Effects of Nutrition Facts Panel Values, Nutrition Claims, and Health Claims on Consumer Attitudes, Perceptions of Disease-Related Risks, and Trust. *Journal of Public Policy & Marketing*, *19*(2), 213–227. http://doi.org/10.1509/jppm.19.2.213.17133

General Register Office for Scotland. (2001). Scotland's Census 2001. Retrieved December 22, 2016, from https://www.nrscotland.gov.uk/statistics-and-data/census/2001-census/results-and-products/reports-and-data/uk-definitions-volume

Gigerenzer, G. (2015). On the Supposed Evidence for Libertarian Paternalism. *Review of Philosophy and Psychology*, *6*(3), 361–383. http://doi.org/10.1007/s13164-015-0248-1

Goodwin, T. (2012). Why We Should Reject "Nudge." *Politics*, *32*(2), 85–92. http://doi.org/10.1111/j.1467-9256.2012.01430.x

Gordon, R. (2011). Critical social marketing: definition, application and domain. *Journal of Social Marketing*, *1*(2), 82–99. http://doi.org/10.1108/20426761111141850

Gordon, R. (2012). Re-thinking and re-tooling the social marketing mix. *Australasian Marketing Journal*, *20*(2), 122–126. http://doi.org/10.1016/j.ausmj.2011.10.005

Gordon, R. (2013). Unlocking the potential of upstream social marketing. *European Journal of Marketing*, *47*(9), 1525–1547. http://doi.org/10.1108/EJM-09-2011-0523

Gordon, R., McDermott, L., Stead, M., & Angus, K. (2006). The effectiveness of social marketing interventions for health improvement: What's the evidence? *Public Health*, *120*(12), 1133–1139. http://doi.org/10.1016/j.puhe.2006.10.008

Gorton, D. (2007). *Nutrition labelling - update of scientific evidence on consumer use and understanding of nutrition labels and claims*. Auckland, New Zealand, Food Safety Authority and the Ministry of Health. Retrieved from http://www.foodsafety.govt.nz/elibrary/industry/signposting-nutrition-study-research-projects/signs-literature-review-report_final-2.pdf

Govindasamy, R., & Italia, J. (1999). *Evaluating Consumer Usage of Nutritional Labeling: The Influence of Socio-Economic Characteristics*. New Jersey, Rutgers University, Department of Agricultural, Food and Resource Economics. Retrieved from https://ideas.repec.org/p/ags/rutdps/36734.html

Gracia, A., & de-Magistris, T. (2016). Consumer preferences for food labeling: What ranks first? *Food Control*, *61*, 39–46. http://doi.org/10.1016/j.foodcont.2015.09.023

Graham, D. J., & Jeffery, R. W. (2012). Predictors of nutrition label viewing during food purchase decision making: an eye tracking investigation. *Public Health Nutrition*, *15*(02), 189–197. http://doi.org/10.1017/S1368980011001303

Graham, D. J., Orquin, J. L., & Visschers, V. H. M. (2012). Eye tracking and nutrition label use: A review of the literature and recommendations for label enhancement. *Food Policy*, *37*(4), 378–382. http://doi.org/10.1016/j.foodpol.2012.03.004

Gregori, D., Ballali, S., Vogele, C., Galasso, F., Widhalm, K., Berchialla, P., & Baldi, I. (2015). What is the value given by consumers to nutritional label information? Results from a large investigation in Europe. *Journal of the American College of Nutrition*, *34*(2), 120–125. http://doi.org/10.1080/07315724.2014.899936

Grunert, K. G. (2016). Consumer Reactions to On-Pack Educational Messages. In *P. Burgess (Ed.), Integrating the Packaging and Product Experience in Food and Beverages* (pp. 23–35). Oxford, UK: Elsevier Ltd.

Grunert, K. G., Bolton, L. E., & Raats, M. M. (2011). Processing and acting upon nutrition labeling on food: The state of knowledge and new directions for transformative consumer research. In *Transformative Consumer Research for Personal and Collective Well-Being* (pp. 333–351). Florida, US: Routledge Academic.

Grunert, K. G., Fernández-Celemín, L., Wills, J. M., Bonsmann, S. S. G., & Nureeva, L. (2010). Use and understanding of nutrition information on food labels in six European countries. *Journal of Public Health*, *18*(3), 261–277. http://doi.org/10.1007/s10389-009-0307-0

Grunert, K. G., & Wills, J. M. (2007). A review of European research on consumer response to nutrition information on food labels. *Journal of Public Health*, *15*(5), 385–399. http://doi.org/10.1007/s10389-007-0101-9

Grunert, K. G., Wills, J. M., & Fernández-Celemín, L. (2010). Nutrition knowledge, and use and understanding of nutrition information on food labels among consumers in the UK. *Appetite*, *55*(2), 177–89. http://doi.org/10.1016/j.appet.2010.05.045

Grynbaum, M. M. (2014). New York's Ban on Big Sodas Is Rejected by Final Court. *New York Times*. New York. Retrieved from http://www.nytimes.com/2014/06/27/nyregion/city-loses-final-appeal-on-limiting-sales-of-large-sodas.html

Guba, E. G., & Lincoln, Y. S. (1989). *Fourth Generation Evaluation*. New York: Sage Publications.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In *Denzin, N. K. & Lincoln, Y. S. (Eds.), The landscape of qualitative research: Theories and issues.* (pp. 195–220). California: Sage.

Gubrium, J. F., & Holstein, J. A. (1997). *The new language of qualitative method*. Oxford: Oxford University Press.

Gurrieri, L., Previte, J., & Brace-Govan, J. (2013). Women's Bodies as Sites of Control: Inadvertent Stigma and Exclusion in Social Marketing. *Journal of Macromarketing*, *33*(2), 128–143. http://doi.org/10.1177/0276146712469971

Hamilton, J. D. (1996). *Eating for Health: a Diet Action Plan for Scotland*. Edinburgh, UK, The Scottish Government. Retrieved from http://www.gov.scot/Resource/0040/00400745.pdf

Hamlin, R. (2015). Front of Pack Nutrition Labelling, Nutrition, Quality and Consumer Choices. *Current Nutrition Reports*, *4*(4), 323–329. http://doi.org/10.1007/s13668-

015-0147-1

Hamlin, R., McNeill, L., & Moore, V. (2014). The impact of front-of-pack nutrition labels on consumer product evaluation and choice: an experimental study. *Public Health Nutrition*, *18*(9), 1–9. http://doi.org/10.1017/S1368980014002997

Hastings, G. (2007). *Social Marketing: Why Should the Devil Have All the Best Tunes?* Oxford, UK, UK: Butterworth-Heinmann, Elsevier.

Hastings, G., & Domegan, C. (2017). *Social marketing: rebels with a cause*. New York: Routledge.

Hastings, G., & Donovan, R. J. (2002). International Initiatives: Introduction and Overview. *Social Marketing Quarterly*, *8*(1), 3–5. http://doi.org/10.1080/15245000212544

Hastings, G., MacFadyen, L., & Anderson, S. (2000). Whose Behavior is it Anyway? The Broader Potential of Social Marketing. *Social Marketing Quarterly*, *6*(2), 46–58. http://doi.org/10.1080/15245004.2000.9961102

Hastings, G., McDermott, L., Angus, K., Stead, M., & Thomson, S. (2009). *The Extent, Nature and Effects of Food Promotion To Children: a Review of the Evidence To December 2008*. Stirling, Scotland, World Health Organisation. Retrieved from http://www.who.int/dietphysicalactivity/Evidence_Update_2009.pdf

Hawkes, C. (2004). *Nutrition labels and health claims: the global regulatory environment*. France, World Health Organisation. Retrieved from http://apps.who.int/iris/bitstream/10665/42964/1/9241591714.pdf

Hawkes, C. (2007). Regulating and litigating in the public interest. Regulating food marketing to young people worldwide: Trends and policy drivers. *American Journal of Public Health*, *97*(11), 1962–1973. http://doi.org/10.2105/AJPH.2006.101162

Hawkes, C., & Hawkes, C. (2008). Dietary Implications of Supermarket Development : A Global Perspective, *26*(6), 657–692.

Hawley, K. L., Roberto, C. A., Bragg, M. A., Liu, P. J., Schwartz, M. B., & Brownell, K. D. (2013). The science on front-of-package food labels. *Public Health Nutrition*, *16*(3), 430–439. http://doi.org/10.1017/S1368980012000754

Herpen, E., Seiss, E., & Trijp, H. C. M. (2012). The role of familiarity in front-of-pack label evaluation and use: A comparison between the United Kingdom and The Netherlands. *Food Quality and Preference*, *26*(1), 22–34. http://doi.org/10.1016/j.foodqual.2012.03.003

Herrick, C. (2007). Risky bodies: Public health, social marketing and the governance of obesity. *Geoforum*, *38*(1), 90–102. http://doi.org/10.1016/j.geoforum.2006.06.003

Hersey, J. C., Wohlgenant, K. C., Arsenault, J. E., Kosa, K. M., & Muth, M. K. (2013). Effects of front-of-package and shelf nutrition labeling systems on consumers. *Nutrition Reviews*, *71*(1), 1–14. http://doi.org/10.1111/nure.12000

Hess, R., Visschers, V. H., & Siegrist, M. (2011). The role of health-related, motivational and sociodemographic aspects in predicting food label use: a comprehensive study. *Public Health Nutrition*, *15*(03), 407–414. http://doi.org/10.1017/S136898001100156X

Hickman, M. (2010). Food companies in massive lobby to block colour-coded warnings. *The Independent*. Retrieved from https://www.independent.co.uk/life-style/food-and-drink/news/food-companies-in-massive-lobby-to-block-colour-coded-warnings-2000523.html

Hieke, S., & Harris, J. L. (2016). Editorial Nutrition information and front-of-pack labelling: issues in effectiveness. *Public Health Nutrition*, *19*(12), 2103–2105. http://doi.org/10.1017/S1368980016001890

Hieke, S., & Taylor, C. R. (2012). A Critical Review of the Literature on Nutritional Labeling. *Journal of Consumer Affairs*, *46*(1), 120–156. http://doi.org/10.1111/j.1745-6606.2011.01219.x

Hieke, S., & Wilczynski, P. (2012). Colour Me In-an empirical study on consumer responses to the traffic light signposting system in nutrition labelling. *Public Health Nutrition*, *15*(5), 773–82. http://doi.org/10.1017/S1368980011002874

Higginson, C. S., Kirk, T. R., Rayner, M. J., & Draper, S. (2002). How do consumers use nutrition label information? *Nutrition & Food Science*, *32*(4), 145–152. http://doi.org/10.1108/00346650210436253

Higginson, C. S., Rayner, M. J., Draper, S., & Kirk, T. R. (2002). The nutrition label – which information is looked at? *Nutrition & Food Science*, *32*(3), 92–99. http://doi.org/10.1108/00346650210423392

Hodgkins, C., Barnett, J., Wasowicz-Kirylo, G., Stysko-Kunkowska, M., Gulcan, Y., Kustepeli, Y., … Raats, M. (2011). Understanding how consumers categorise nutritional labels: A consumer derived typology for front-of-pack nutrition labelling. *Appetite*, *59*(3), 806–817. http://doi.org/10.1016/j.appet.2012.08.014

Hoefkens, C., Verbeke, W., & Camp, J. (2011). European consumers' perceived importance of qualifying and disqualifying nutrients in food choices. *Food Quality and Preference*, *22*(6), 550–558. http://doi.org/10.1016/j.foodqual.2011.03.002

Horkheimer, M. (1937). *Traditional and Critical Theory, Critical Sociology: Selected Readings*. Harmondsworth: Penguin.

Horkheimer, M. (1982). *Critical Theory, reprinted Continuum*. New York: Seabury Press.

House of Lords. (2011). *Science and Technology Select Committee report. 2nd Report of Session 2010–12: Behaviour Change*. London. Retrieved from https://www.publications.parliament.uk/pa/ld201012/ldselect/ldsctech/179/179.pdf

Huang, C., & Baum, M. (2012). Nudge ethics: just a game of billiards? *The American Journal of Bioethics*, *12*(2), 22–4. http://doi.org/10.1080/15265161.2011.634955

Huang, T. T. K., Kaur, H., McCarter, K. S., Nazir, N., Choi, W. S., & Ahluwalia, J. S. (2004). Reading nutrition labels and fat consumption in adolescents. *Journal of Adolescent Health*, *35*(5), 399–401. http://doi.org/10.1016/j.jadohealth.2004.02.005

Hudson, L., & Ozanne, J. (1988). Alternative ways of seeking knowledge in consumer research. *Journal of Consumer Research*, *4*(14), 508–521. http://doi.org/10.1086/209132 508-521

Hughes, K. B., Chapman, K., Dixon, L. J., & King, L. (2008). *Front-of-Pack food*

labelling: traffic light labelling gets the green light. Sydney, Ipsos-Eureka Social Research Institute. Retrieved from http://www.cancercouncil.com.au/nutrition/foodlabellingreport

Hunt, T. E., Clark-Carter, D., & Sheffield, D. (2015). Exploring the Relationship Between Mathematics Anxiety and Performance: An Eye-Tracking Approach. *Applied Cognitive Psychology*, *29*(2), 226–231. http://doi.org/10.1002/acp.3099

ISM. (2017). Institute for Social Marketing, University of Stirling. Retrieved February 14, 2016, from http://www.stir.ac.uk/health-sciences/research/groups/social-marketing/

Jebb, S. A., Aveyard, P. N., & Hawkes, C. (2013). The evolution of policy and actions to tackle obesity in England. *Obesity Reviews*, *14*(S2), 42–59. http://doi.org/10.1111/obr.12093

Jones, G., & Richardson, M. (2007). An objective examination of consumer perception of nutrition information based on healthiness ratings and eye movements. *Public Health Nutrition*, *10*(3), 238–244. http://doi.org/10.1017/S1368980007258513

Junghans, A. F., Cheung, T. T. L., & De Ridder, D. D. . (2015). Under consumers' scrutiny - an investigation into consumers' attitudes and concerns about nudging in the realm of health behavior. *BMC Public Health*, *15*(1), 1–13. http://doi.org/10.1186/s12889-015-1691-8

Kahan, S., & Manson, J. E. (2017). Nutrition Counseling in Clinical Practice How Clinicians Can Do Better. *Journal of the American Medical Association*, *318*(12), 1101–1102. http://doi.org/doi:10.1001/jama.2017.10434

Kahneman, D. (2011). *Thinking, Fast and Slow*. New York: Penguin.

Kantar. (2016). Grocery Market Share, Kantar Worldpanel. Retrieved December 17, 2016, from http://www.kantarworldpanel.com/en/grocery-market-share/great-britain

Kelly, B., Hughes, C., Chapman, K., Louie, J. C. Y., Dixon, H., Crawford, J., … Slevin, T. (2009). Consumer testing of the acceptability and effectiveness of front-of-pack food labelling systems for the Australian grocery market. *Health Promotion International*, *24*(2), 120–129. http://doi.org/10.1093/heapro/dap012

Kelly, M. (2009). The role of theory in qualitative health research. *Family Practice*, *27*(3), 285–290. http://doi.org/10.1093/fampra/cmp077

Key, T. M., & Czaplewski, A. J. (2017). Upstream social marketing strategy: An integrated marketing communications approach. *Business Horizons*, *60*(3), 325–333. http://doi.org/10.1016/j.bushor.2017.01.006

Khan, M. (2014). The Scottish economy in ten essential charts. *The Telegraph*. Retrieved from http://www.telegraph.co.uk/finance/economics/11084406/The-Scottish-economy-in-ten-essential-charts.html

Kim, E., Ham, S., Yang, I. S., & Choi, J. G. (2013). The roles of attitude, subjective norm, and perceived behavioral control in the formation of consumers' behavioral intentions to read menu labels in the restaurant industry. *International Journal of Hospitality Management*, *35*, 203–213. http://doi.org/10.1016/j.ijhm.2013.06.008

Kim, W. K., & Kim, J. (2009). A study on the consumer's perception of front-of-pack nutrition labeling. *Nutrition Research and Practice*, *3*, 300–306. http://doi.org/10.4162/nrp.2009.3.4.300

Kleef, E., & Dagevos, H. (2011). The growing role of front-of-pack nutrition profile labelling: A consumer perspective on key issues and controversies. *Critical Reviews in Food Science and Nutrition*, *55*(3), 291–303. http://doi.org/10.1080/10408398.2011.653018

Kleef, E., & Dagevos, H. (2015). The Growing Role of Front-of-Pack Nutrition Profile Labeling: A Consumer Perspective on Key Issues and Controversies. *Critical Reviews in Food Science and Nutrition*, *55*(3), 291–303. http://doi.org/10.1080/10408398.2011.653018

Kleef, E., Trijp, H., Paeps, F., & Fernández-Celemín, L. (2008). Consumer preferences for front-of-pack calories labelling. *Public Health Nutrition*, *11*(2), 203–13. http://doi.org/10.1017/S1368980007000304

Koenigstorfer, J., & Groeppel-Klein, A. (2010). Examining the use of nutrition labelling with photoelicitation. *Qualitative Market Research: An International Journal*, *13*(4), 389–413. http://doi.org/10.1108/13522751011078818

Kotler, P. (1972). *Marketing Decision Making: A Model Building Approach*. New York: Holt McDougal.

Kotler, P., & Lee, N. (2008). *Social Marketing: Influencing Behaviors for Good*. London: Sage Publications Ltd.

Kotler, P., & Levy, S. J. (1969). Broadening the Concept of Marketing. *Journal of Marketing*, *33*(1), 10–16. http://doi.org/10.2307/1248740

Kotler, P., & Zaltman, G. (1971). Social marketing: an approach to planned social change. *The Journal of Marketing*, *35*(3), 3–12. http://doi.org/10.2307/1249783

Lachat, C., & Tseng, M. (2013). A wake-up call for nutrition labelling. *Public Health Nutrition*, *16*(03), 381–382. http://doi.org/10.1017/S1368980012005666

Lähteenmäki, L. (2015). Consumer interpretation of nutrition and other information on food and beverage labels. *Advances in Food and Beverage Labelling*, 133–148. http://doi.org/10.1533/9781782420934.2.133

Langford, R., & Panter-Brick, C. (2013). A health equity critique of social marketing: Where interventions have impact but insufficient reach. *Social Science and Medicine*, *83*, 133–141. http://doi.org/10.1016/j.socscimed.2013.01.036

Lee, M. S., & Thompson, J. K. (2016). Exploring enhanced menu labels' influence on fast food selections and exercise-related attitudes, perceptions, and intentions. *Appetite*, *105*, 416–422. http://doi.org/10.1016/j.appet.2016.06.007

Leek, S., Szmigin, I., & Baker, E. (2015). Consumer confusion and front of pack (FoP) nutritional labels. *Journal of Customer Behaviour*, *14*(1), 49–61. http://doi.org/http://dx.doi.org/10.1362/147539215X14267608004087

Lefebvre, R. C. (2009). Getting Social Marketing Wrong in Health Behavior and Health Education, News and Views on Social Marketing and Social Change. Retrieved May 9, 2018, from

http://socialmarketing.blogs.com/r_craiig_lefebvres_social/2009/11/getting-social-marketing-wrong-in-health-behavior-and-health-education.html

Lefebvre, R. C. (2011). An integrative model for social marketing. *Journal of Social Marketing*, *1*(1), 54–72. http://doi.org/10.1108/20426761111104437

Lefebvre, R. C. (2012). Transformative social marketing: Co-creating the social marketing discipline and brand. *Journal of Social Marketing*, *2*(2), 118–129. http://doi.org/10.1108/20426761211243955

Liu, P. J., Roberto, C. A., Liu, L. J., & Brownell, K. D. (2012). A test of different menu labeling presentations. *Appetite*, *59*(3), 770–777. http://doi.org/10.1016/j.appet.2012.08.011

Liu, P. J., Wisdom, J., Roberto, C. A., Liu, L. J., & Ubel, P. A. (2014). Using behavioral economics to design more effective food policies to address obesity. *Applied Economic Perspectives and Policy*, *36*(1), 6–24. http://doi.org/10.1093/aepp/ppt027

Liu, R., Hoefkens, C., & Verbeke, W. (2015). Chinese consumers' understanding and use of a food nutrition label and their determinants. *Food Quality and Preference*, *41*, 103–111. http://doi.org/10.1016/j.foodqual.2014.11.007

Lobstein, T., Landon, J., & Lincoln, P. (2007). *Misconceptions and misinformation: The problems with Guideline Daily Amounts*. London, UK, National Heart Forum. Retrieved from http://nhfshare.heartforum.org.uk/RMAssets/Reports/NHFGDAreport.pdf

Loewenstein, G., & Ubel, P. (2010). Economics Behaving Badly. *The New York Times*. Retrieved from https://www.nytimes.com/2010/07/15/opinion/15loewenstein.html

Lofland, J., & Lofland, L. H. (1995). *Analyzing social settings: a guide to qualitative observation and analysis*. Belmont, US: Wadsworth.

Mackison, D. (2010). *Enhanced Nutrition Communications - Making the Best of Food Labels*. University of Dundee.

Maguire, E. R., & Monsivais, P. (2015). Socio-economic dietary inequalities in UK adults: an updated picture of key food groups and nutrients from national surveillance data. *The British Journal of Nutrition*, *113*(1), 181–9. http://doi.org/10.1017/S0007114514002621

Malam, S., Clegg, S., Kirwan, S., & McGinigal, S. (2009). *Comprehension and use of UK nutrition signpost labelling schemes*. Surry, UK, British Market Research Bureau. Retrieved from http://www.food.gov.uk/multimedia/pdfs/pmpreport.pdf

Marriott, B. M. (1994). *Food Components to Enhance Performance*. (Press National Academy, Ed.). Washington, DC: National Academies Press.

Marteau, T. M., Ogilvie, D., Roland, M., Suhrcke, M., & Kelly, M. P. (2011). Judging nudging: can nudging improve population health? *BMJ*, *342*(3), 228–228. http://doi.org/10.1136/bmj.d228

Maubach, N., & Hoek, J. (2010). A qualitative study of New Zealand parents' views on front-of-pack nutrition labels. *Nutrition and Dietetics*, *67*(2), 90–96. http://doi.org/10.1111/j.1747-0080.2010.01425

Maxwell, J. (2012). *A Realist Approach for Qualitative Research*. Washington, DC: SAGE Publications, Inc.

Mayes, C. (2014). Governing through choice: Food labels and the confluence of food industry and public health discourse to create "healthy consumers." *Social Theory & Health*, *12*(4), 376–395. http://doi.org/http://dx.doi.org/10.1057/sth.2014.12

Mayes, C. (2015). *The Biopolitics of Lifestyle: Foucault, Ethics and Healthy Choices*. New York: Routledge.

McAuley, A. (2014). Reflections on a decade in social marketing. *Journal of Social Marketing*, *4*(1), 77–86. http://doi.org/10.1108/JSOCM-09-2013-0062

McClure, S. M. (2004). Separate Neural Systems Value Immediate and Delayed Monetary Rewards. *Science*, *306*(5695), 503–507. http://doi.org/10.1126/science.1100907

Mckinnon, L. (2012). *The Contribution of Psychosocial Factors To Socioeconomic Differences in Food Purchasing*. Doctoral Dissertation, Queensland University of Technology, Brisbane, Australia. Retrieved from https://eprints.qut.edu.au/60893/

McTavish, J. (2015). Everyday life classification practices and technologies: Applying domain-analysis to lay understandings of food, health, and eating. *London Health Sciences Centre, London, UK*, *71*(5), 957–975. http://doi.org/http://dx.doi.org/10.1108/JD-08-2014-0105

Mejean, C., Macouillard, P., Péneau, S., Hercberg, S., & Castetbon, K. (2013). Consumer acceptability and understanding of front-of-pack nutrition labels. *Journal of Human Nutrition and Dietetics*, *26*(5), 494–503. http://doi.org/10.1111/jhn.12039

Méjean, C., Macouillard, P., Péneau, S., Hercberg, S., & Castetbon, K. (2013). Perception of front-of-pack labels according to social characteristics, nutritional knowledge and food purchasing habits. *Public Health Nutrition*, *16*(3), 392–402. http://doi.org/10.1017/S1368980012003515

Miller, L. M. S., & Cassady, D. L. (2012). Making healthy food choices using nutrition facts panels. The roles of knowledge, motivation, dietary modifications goals, and age. *Appetite*, *59*(1), 129–139. http://doi.org/10.1016/j.appet.2012.04.009

Miller, L. M. S., & Cassady, D. L. (2015). The effects of nutrition knowledge on food label use. A review of the literature. *Appetite*, *92*, 207–216. http://doi.org/10.1016/j.appet.2015.05.029

Miller, L. M. S., Cassady, D. L., Applegate, E. A., Beckett, L. A., Wilson, M. D., Gibson, T. N., & Ellwood, K. (2015). Relationships among food label use, motivation, and dietary quality. *Nutrients*, *7*(2), 1068–80. http://doi.org/10.3390/nu7021068

Moodie, C., Mackintosh, A. M., & Hastings, G. (2015). Adolescents' response to pictorial warnings on the reverse panel of cigarette packs: A repeat cross-sectional study. *Tobacco Control*, *24*(1), 93–97. http://doi.org/10.1136/tobaccocontrol-2013-050999

Moore, M. (2001). *Food Labeling Regulation: A Historical and Comparative Survey*. Harvard University, UK, Office for Scholarly Communications. Retrieved from https://dash.harvard.edu/handle/1/8965597

Morgan, R., George, A., Ssali, S., Hawkins, K., Molyneux, S., & Theobald, S. (2016).

How to do (or not to do)... gender analysis in health systems research. *Health Policy and Planning*, *31*(8), 1069–1078. http://doi.org/10.1093/heapol/czw037

Morris, Z. S., & Clarkson, P. J. (2009). Does social marketing provide a framework for changing healthcare practice? *Health Policy*, *91*(2), 135–41. http://doi.org/10.1016/j.healthpol.2008.11.009

Möser, A., Hoefkens, C., Camp, J., & Verbeke, W. (2010). Simplified nutrient labelling: Consumers' perceptions in Germany and Belgium. *Journal of Consumer Protection and Food Safety*, *5*(2), 169–180. http://doi.org/10.1007/s00003-009-0531-0

Mozaffarian, D., Afshin, A., Benowitz, N. L., Bittner, V., Daniels, S. R., Franch, H. A., … Zakai, N. A. (2012). Population approaches to improve diet, physical activity, and smoking habits: a scientific statement from the American Heart Association. *Circulation*, *126*(12), 1514–63. http://doi.org/10.1161/CIR.0b013e318260a20b

Mozaffarian, D., Angell, S. Y., Lang, T., & Rivera, J. A. (2018). Role of government policy in nutrition-barriers to and opportunities for healthier eating. *BMJ (Online)*, *361*, 1–11. http://doi.org/10.1136/bmj.k2426

Mullane, M., & Sheffrin, S. (2012). *White Paper: Regulatory Nudges in Practice, Prepared for Conference on Responsible Regulation*. Department of Economics and the Murphy Institute Tulane University, Louisiana, US. Retrieved from http://murphy.tulane.edu/files/events/Regulatory_Nudges_feb_24.pdf

Muller, L., & Prevost, M. (2015). What cognitive sciences have to say about the impacts of nutritional labelling formats. *Journal of Economic Psychology*, *55*, 17–29. http://doi.org/10.1016/j.joep.2016.01.005

Nayga, R. M. (1999). Toward an understanding of consumers' perceptions of food labels. *International Food and Agribusiness Management Review*, *2*(1), 29–45. http://doi.org/10.1016/S1096-7508(99)00011-7

Nestle, M. (2011). World's first fat tax: what will it achieve? *New Scientist*. Retrieved from https://www.newscientist.com/article/mg21228356-600-worlds-first-fat-tax-what-will-it-achieve/

Northrup, C. (2007). *Women's Bodies, Women's Wisdom*. London: Piatkus.

NRS. (2018). National Readership Survey, Lifestyle and Classification Data of Social Grade. Retrieved June 18, 2018, from http://www.nrs.co.uk/nrs-print/lifestyle-and-classification-data/social-grade/

NSMC. (2011). *National Social Marketing Centre, Big pocket guide to using social marketing for behaviour change*. *National Social Marketing Centre*. UK. Retrieved from http://www.thensmc.com/sites/default/files/Big_pocket_guide_2011.pdf

Nyilasy, G., Lei, J., Nagpal, A., & Tan, J. (2016). Colour correct: the interactive effects of food label nutrition colouring schemes and food category healthiness on health perceptions. *Publlic Health Nutrition*, *19*(12), 1–6. http://doi.org/10.1017/S1368980016000483

O'Dowd, A. (2017). Spending on junk food advertising is nearly 30 times what government spends on promoting healthy eating. *BMJ*, *359*, 4677. http://doi.org/10.1136/bmj.j4677

O'Reilly, M., & Kiymba, N. (2015). *Advanced Qualitative Research : A guide to using theory*. London: Sage.

Olstad, D. L., Vermeer, J., McCargar, L. J., Prowse, R. J. L., & Raine, K. D. (2015). Using traffic light labels to improve food selection in recreation and sport facility eating environments. *Appetite*, *91*, 329–335. http://doi.org/10.1016/j.appet.2015.04.057

Onozaka, Y., Melbye, E. L., & Hansen, H. (2014). What If You Stop and Think About It? Nutrition Logos and Product Selection Behavior. *Journal of International Food and Agribusiness Marketing*, *26*(2), 140–153. http://doi.org/10.1080/08974438.2013.833570

Pechmann, C., & Slater, M. D. (2005). *Social marketing messages which may motivate irresponsible consumption behaviours*. London/New York: Routledge.

Peretti, J. (2012). Why food "traffic-light" labels did not happen. *BBC News*. Retrieved from http://www.bbc.co.uk/news/health-18767425

Pérez-Escamilla, R., & Haldeman, L. (2002). Food Label Use Modifies Association of Income with Dietary Quality. *The Journal of Nutrition*, *132*(4), 768–772. http://doi.org/10.1093/jn/132.4.768

Pettigrew, S., & Pescud, M. (2013). The Salience of Food Labeling Among Low-income Families With Overweight Children. *Journal of Nutrition Education and Behavior*, *45*(4), 332–339. http://doi.org/10.1016/j.jneb.2013.01.025

Pollard, J., Kirk, S. F. L., & Cade, J. E. (2002). Factors affecting food choice in relation to fruit and vegetable intake: a review. *Nutrition Research Reviews*, *15*, 373–387. http://doi.org/10.1079/NRR200244

Popay, J., Williams, G., Thomas, C., & Gatrell, T. (1998). Theorising Inequalities in Health: The Place of Lay Knowledge. *Sociology of Health & Illness*, *20*(5), 619–644. http://doi.org/10.1111/1467-9566.00122

Prochaska, J. O., & DiClemente, C. C. (1983). *The transtheoretical approach: crossing traditional boundaries of therapy*. Malabar, FL: Krieger Pub.

Puhl, R., Peterson, J. L., & Luedicke, J. (2013). Fighting obesity or obese persons? Public perceptions of obesity-related health messages. *International Journal of Obesity*, *37*(6), 774–82. http://doi.org/10.1038/ijo.2012.156

Punch, K. F. (2005). *Introduction to Social Research – Quantitative & Qualitative Approaches*. London: Sage.

Raftopoulou, E., & Hogg, M. K. (2010). The political role of government-sponsored social marketing campaigns. *European Journal of Marketing*, *44*(7/8), 1206–1227. http://doi.org/10.1108/03090561011047599

Raihani, N. J. (2013). Nudge politics: efficacy and ethics. *Frontiers in Psychology*, *4*(12), 1–3. http://doi.org/10.3389/fpsyg.2013.00972

Raspberry, C. N., Chanley, B. H., Housman, J. M., Misra, R., & Miller, P. J. (2007). Determinants of nutrition label use among college students. *American Journal of Health Education*, *38*(2), 76–82. http://doi.org/10.1080/19325037.2007.10598947

Rayner, M., Boaz, A., & Higginson, C. S. (2001). Consumer Use of Health-Related Endorsements On Food Labels in the United Kingdom and Australia. *Journal of Nutrition Education*, *33*(1), 24–30. http://doi.org/10.1016/S1499-4046(06)60006-7

Rayner, M., Scarborough, P., & Williams, C. (2004). The origin of Guideline Daily Amounts and the Food Standards Agency's guidance on what counts as "a lot" and "a little". *Public Health Nutrition*, *7*(4), 549–556. http://doi.org/10.1079/PHN2003552

Rebonato, R. (2014). A Critical Assessment of Libertarian Paternalism. *Journal of Consumer Policy*, *37*(3), 357–396. http://doi.org/10.1007/s10603-014-9265-1

Rimpeekool, W., Banwell, C., Seubsman, S., Kirk, M., Yiengprugsawan, V., & Sleigh, A. (2015). "I rarely read the label": Factors that Influence Thai Consumer Responses to Nutrition Labels. *Global Journal of Health Science*, *8*(1), 21–28. http://doi.org/10.5539/gjhs.v8n1p21

Roberto, C. A., & Kawachi, I. (2014). Use of Psychology and Behavioral Economics to Promote Healthy Eating. *American Journal of Preventive Medicine*, *47*(6), 832–837. http://doi.org/10.1016/j.amepre.2014.08.002

Robertson, R. (2008). *Using information to promote healthy behaviours*. London, Kings Fund Report. Retrieved from http://www.kingsfund.org.uk/sites/files/kf/field/field_document/information-promote-healthy-behaviours-kicking-bad-habits-supporting-paper-ruth-robertson.pdf

Rodolfo, M. (2000). Nutrition Knowledge, Gender, and Food Label Use. *Journal of Consumer Affairs*, *34*(1), 97–112. http://doi.org/10.1111/j.1745-6606.2000.tb00086.x

Roosmalen, E. Van, & Loppie, C. (1999). *Women's Perceptions of the Determinants of Health and Well-Being*. Nova Scotia, The Maritime Centre of Excellence for Women's Health. Retrieved from https://cdn.dal.ca/content/dam/dalhousie/pdf/diff/ace-women-health/VP/ACEWH_VP_final_report.pdf

Rosenstock, I., Strecher, V. J., & Becker, M. (1988). Social Learning Theory and the Health Belief Model. *Health Education Quarterly*, *15*(2), 175–183. http://doi.org/10.1177/109019818801500203

Rothman, R. L., Housam, R., Weiss, H., Davis, D., Gregory, R., Gebretsadik, T., … Elasy, T. A. (2006). Patient Understanding of Food Labels. *American Journal of Preventive Medicine*, *31*(5), 391–398. http://doi.org/10.1016/j.amepre.2006.07.025

Rothschild, M. L., & Michael, L. (1999). Carrots , sticks , and promises : A conceptual framework for the management of public health and social issues of behaviors. *Journal of Marketing*, *63*(October), 24–37. http://doi.org/10.2307/1251972

Sacks, G., Rayner, M., & Swinburn, B. (2009). Impact of front-of-pack "traffic-light" nutrition labelling on consumer food purchases in the UK. *Health Promotion International*, *24*(4), 344–52. http://doi.org/10.1093/heapro/dap032

Satia, J. a., Galanko, J. a., & Neuhouser, M. L. (2005). Food nutrition label use is associated with demographic, behavioral, and psychosocial factors and dietary intake among African Americans in North Carolina. *Journal of the American*

Dietetic Association, *105*(3), 392–402. http://doi.org/10.1016/j.jada.2004.12.006

Savoie, N., Barlow, K., Harvey, K. L., Binnie, M. A., & Pasut, L. (2013). Consumer Perceptions of Front-of-package Labelling Systems and Healthiness of Foods. *Public Health*, *104*(5), 359–363. http://doi.org/10.17269/cjph.104.4027

Scarborough, P., Hodgkins, C., Raats, M. M., Harrington, R. A., Cowburn, G., Dean, M., … Rayner, M. (2015). Protocol for a pilot randomised controlled trial of an intervention to increase the use of traffic light food labelling in UK shoppers. *Pilot and Feasibility Studies*, *1*(1), 21. http://doi.org/10.1186/s40814-015-0015-1

Scarborough, P., Matthews, A., Eyles, H., Kaur, A., Hodgkins, C., Raats, M. M., & Rayner, M. (2015). Reds are more important than greens: how UK supermarket shoppers use the different information on a traffic light nutrition label in a choice experiment. *International Journal of Behavioral Nutrition and Physical Activity*, *12*(1), 151. http://doi.org/10.1186/s12966-015-0319-9

Schacter, D. L., Gilbert, D. T., & Wegner, D. M. (2011). *Psychology* (2nd Ed). New York: Worth.

Schiffman, L., O'Cass, A., Paladino, A., & Carlson, J. (2014). *Consumer Behaviour* (6th Ed). Australia: Pearson Education Australia.

Schubert, C. (2017). Green nudges: Do they work? Are they ethical? *Ecological Economics*, *132*, 329–342. http://doi.org/10.1016/j.ecolecon.2016.11.009

Schuldt, J. P. (2013). Does green mean healthy? Nutrition label color affects perceptions of healthfulness. *Health Communication*, *28*(5), 814–21. http://doi.org/10.1080/10410236.2012.725270

Scrinis, G., & Parker, C. (2016). Front-of-Pack Food Labeling and the Politics of Nutritional Nudges. *Law & Policy*, *38*(3), 234–249. http://doi.org/10.1111/lapo.12058

Seale, C. (1999). *The Quality of Qualitative Research*. Sage Publications Ltd.

Selinger, E., & Whyte, K. (2011). Is There a Right Way to Nudge? The Practice and Ethics of Choice Architecture. *Sociology Compass*, *5*(10), 923–935. http://doi.org/10.1111/j.1751-9020.2011.00413.x

Seward, M. W., Block, J. P., & Chatterjee, A. (2016). A Traffic-Light Label Intervention and Dietary Choices in College Cafeterias. *American Journal of Public Health*, *106*(10), 1808–1815. http://doi.org/10.2105/AJPH.2016.303301

Sharf, M., Sela, R., Zentner, G., Shoob, H., Shai, I., & Stein-Zamir, C. (2012). Figuring out food labels. Young adults' understanding of nutritional information presented on food labels is inadequate. *Appetite*, *58*(2), 531–534. http://doi.org/10.1016/j.appet.2011.12.010

Sheeran, P., & Webb, T. L. (2016). The Intention–Behavior Gap. *Social and Personality Psychology Compass*, *10*(9), 503–518. http://doi.org/10.1111/spc3.12265

Shove, E. (2014). Putting practice into policy: reconfiguring questions of consumption and climate change. *Contemporary Social Science*, *9*(4), 415–429. http://doi.org/10.1080/21582041.2012.692484

Siegrist, M., Leins-Hess, R., & Keller, C. (2015). Which front-of-pack nutrition label is the most efficient one? The results of an eye-tracker study. *Food Quality and Preference*, *39*, 183–190. http://doi.org/10.1016/j.foodqual.2014.07.010

Signal, L., Lanumata, T., Robinson, J.-A., Tavila, A., Wilton, J., & Ni Mhurchu, C. (2008). Perceptions of New Zealand nutrition labels by Māori, Pacific and low-income shoppers. *Public Health Nutrition*, *11*(7), 706–713. http://doi.org/10.1017/S1368980007001395

Sijtsema, S., Linnemann, A., Gaasbeek, T., Dagevos, H., & Jongen, W. (2002). Variables influencing food perception. *Critical Reviews in Food Science and Nutrition*, *42*(6), 565–581. http://doi.org/10.1080/20024091054256

Simpson, N., Bartley, A., Davies, A., Perman, S., & Rodger, A. J. (2018). Getting the balance right—tackling the obesogenic environment by reducing unhealthy options in a hospital shop without affecting profit. *Journal of Public Health*, (7), 1–7. http://doi.org/10.1093/pubmed/fdy053

Sinclair, S., Hammond, D., & Goodman, S. (2013). Sociodemographic differences in the comprehension of nutritional labels on food products. *Journal of Nutrition Education and Behavior*, *45*(6), 767–772. http://doi.org/10.1016/j.jneb.2013.04.262

Singer, L., Williams, P., Ridges, L., Murray, S., & Mcmahon, A. (2006). Consumer reactions to different health claim formats on food labels. *Food Australia*, *58*(3), 92–97. Retrieved from https://ro.uow.edu.au/hbspapers/3/

Sirieix, L., Delanchy, M., Remaud, H., Zepeda, L., & Gurviez, P. (2013). Consumers' perceptions of individual and combined sustainable food labels: A UK pilot investigation. *International Journal of Consumer Studies*, *37*(2), 143–151. http://doi.org/10.1111/j.1470-6431.2012.01109.x

Soraghan, C., Thomson, E., & Ensor, J. (2016). Using food labels to evaluate the practice of nudging in a social marketing context. *Social Business*, *6*(3), 249–265. http://doi.org/10.1362/204440816X14811339560893

Sorensen, J. a., Brewer, D., Wyckoff, L., Horsman, M., Scott, E., & May, J. J. (2013). Building Safety Partnerships Using Social Network Analysis. *Social Marketing Quarterly*, *19*(2), 67–75. http://doi.org/10.1177/1524500413483457

Spotswood, F., Chatterton, T., Morey, Y., & Spear, S. (2017). Practice-theoretical possibilities for social marketing: two fields learning from each other. *Journal of Social Marketing*, *7*(2), 156–171. http://doi.org/10.1108/JSOCM-10-2016-0057

Spotswood, F., French, J., Tapp, A., & Stead, M. (2012). Some reasonable but uncomfortable questions about social marketing. *Journal of Social Marketing*, *2*(3), 163–175. http://doi.org/10.1108/20426761211265168

Stead, M., Gordon, R., Angus, K., & McDermott, L. (2007). A systematic review of social marketing effectiveness. *Health Education*, *107*(2), 126–191. http://doi.org/10.1108/09654280710731548

Stead, M., McDermott, L., Mackintosh, A. M., & Adamson, A. (2011). Why healthy eating is bad for young people's health: identity, belonging and food. *Social Science & Medicine*, *72*(7), 1131–9. http://doi.org/10.1016/j.socscimed.2010.12.029

Steckler, A. (1989). The Use of Qualitative Evaluation Methods to Test Internal Validity.

Evaluation & the Health Professions, *12*(2), 115–133. http://doi.org/10.1177/016327878901200201

Steenhuis, I., Assema, P., Breukelen, G., & Glanz, K. (2004). The Effectiveness of Nutrition Education and Labeling in Dutch Supermarkets. *American Journal of Health Promotion*, *18*(3), 221–224. http://doi.org/10.4278/0890-1171-18.3.221

Stevens, R. E., Wrenn, B., Sherwood, P. K., & Ruddcik, M. E. (2006). *The Marketing Research Guide*. London and New York: Routledge.

Stok, F. M., de Vet, E., de Ridder, D. T. D., & de Wit, J. B. F. (2012). " I should remember I don't want to become fat" : Adolescents' views on self-regulatory strategies for healthy eating. *Journal of Adolescence*, *35*(1), 67–75. http://doi.org/10.1016/j.adolescence.2011.06.004

Stran, K. A., & Knol, L. L. (2013). Determinants of Food Label Use Differ by Sex. *Journal of the Academy of Nutrition and Dietetics*, *113*(5), 673–679. http://doi.org/10.1016/j.jand.2012.12.014

Strauss, A. L. (1987). *Qualitative analysis for social scientists*. London: SAGE Publications.

Sunstein, C. R. (2014). Nudging: A Very Short Guide. *Journal of Consumer Policy*, (9), 583–588. http://doi.org/10.1007/s10603-014-9273-1

Sunstein, C. R., & Thaler, R. H. (2003). Libertarian Paternalism Is Not An Oxymoron. *The University of Chicago Law Review*, *70*(4), 1159–1202. http://doi.org/10.2139/ssrn.405940

Tadajewski, M. (2010). Towards a history of critical marketing studies. *Journal of Marketing Management*, *26*(9–10), 773–824. http://doi.org/10.1080/02672571003668954

Tadajewski, M., & Brownlie, D. (2008). *Critical marketing: contemporary issues in marketing*. Chichester, UK: Wiley.

Tadajewski, M., & et al. (2018). Critical Reflections on the Marketing Concept and Consumer Sovereignty. In *Tadajewski, M., Higgins, M., Denegri-Knott, J. & Varman, R. (eds) The Companion to Critical Marketing Studies*. London: Routledge.

Tadajewski, M., Maclaran, P., Parsons, E., & Parker, E. (2011). Critical Marketing Studies. In *Tadajewski, M., Maclaran, P., Parsons, E. and Parker M. (eds.) Key Concepts in Critical Management Studies* (pp. 83–87). London: Sage.

Talati, Z., Pettigrew, S., Kelly, B., Ball, K., Dixon, H., & Shilton, T. (2016). Consumers' responses to front-of-pack labels that vary by interpretive content. *Appetite*, *101*, 205–213. http://doi.org/10.1016/j.appet.2016.03.009

Tapp, A., & Spotswood, F. (2013). From the 4Ps to COM-SM: reconfiguring the social marketing mix. *Journal of Social Marketing*, *3*(3), 206–222. http://doi.org/10.1108/JSOCM-01-2013-0011

Taubes, G. (2016). *The case against sugar*. New York: Penguin Random House.

Teisl, M. F., Peavey, S., Newman, F., Buono, J., & Hermann, M. (2002). Consumer reactions to environmental labels for forest products: A preliminary look. *Forest*

Products Journal, *52*(1), 44.

Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving Decisions about Health, Wealth, and Happiness*. London: Yale University Press.

The Scottish Government. (2011). *Prevention of Obesity Route Map - Action Plan*. Edinburgh, UK, The Scottish Government. Retrieved from http://www.gov.scot/Resource/0038/00386315.pdf

The Scottish Government. (2013a). *Front of pack Nutrition Labelling: Joint Response to Consultation*. Edinburgh, UK, The Scottish Government. Retrieved from http://www.food.gov.uk/sites/default/files/multimedia/pdfs/consultationresponse/frontofpacklabelling-response.pdf

The Scottish Government. (2013b). *Guide to Creating a Front of Pack (FoP) Nutrition Label for Pre-packed Products Sold through Retail Outlets*. Edinburgh, UK, The Scottish Government. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/300886/2902158_FoP_Nutrition_2014.pdf

The Scottish Government. (2014). *Supporting Healthy Choices: A framework for voluntary action*. Edinburgh, UK, The Scottish Government. Retrieved from http://www.gov.scot/Publications/2014/06/8253

The Scottish Government. (2015). *Eat Better Feel Better, Social Marketing Programme 2015*. Edinburgh, UK, The Scottish Government. Retrieved from http://www.communityfoodandhealth.org.uk/wp-content/uploads/2014/10/Eat-Better-Feel-Better.pdf

The Scottish Government. (2017). *A Healthier Future - Action and Ambitions on Diet, Activity, and Healthy Weight Consultation Document*. Edinburgh, UK, The Scottish Government. Retrieved from http://www.gov.scot/Publications/2017/10/1050

The Scottish Government. (2018). *National Improvement Framework and Improvement Plan*. Edinburgh, UK, The Scottish Government. Retrieved from https://beta.gov.scot/publications/2018-national-improvement-framework-improvement-plan/pages/8/

Thistlewaite, F. (2015). Scots more likely to die of heart disease, Daily Express. Retrieved from http://www.express.co.uk/life-style/health/607341/Heart-disease-signs-risk-symptoms-Scotland-Britain-map

Thomas, D. R. (2006). A General Inductive Approach for Analyzing Qualitative Evaluation Data. *American Journal of Evaluation*, *27*(2), 237–246. http://doi.org/10.1177/1098214005283748

Thorndike, A. N., Riis, J., Sonnenberg, L. M., & Levy, D. E. (2014). Traffic-Light Labels and Choice Architecture. *American Journal of Preventive Medicine*, *46*(2), 143–149. http://doi.org/10.1016/j.amepre.2013.10.002

Todd, J. E., & Variyam, J. N. (2008). *The Decline in Consumer Use of Food Nutrition Labels, 1995-2006* (Vol. 63). Economic Research Report, Economic Research Service, U.S. Dept. of Agriculture. Retrieved from http://www.ers.usda.gov/Publications/ERR63/ERR63.pdf

Tonkin, E., Meyer, S. B., Coveney, J., Webb, T., & Wilson, A. M. (2016). The process

of making trust related judgements through interaction with food labelling. *Food Policy*, *63*, 1–11. http://doi.org/10.1016/j.foodpol.2016.06.007

Tonkin, E., Wilson, A. M., Coveney, J., Webb, T., & Meyer, S. B. (2014). Trust in and through labelling – a systematic review and critique. *British Food Journal*, *117*(5), 318–338. http://doi.org/10.1108/JFM-03-2013-0017

Trijp, H. C. M. (2009). Consumer understanding and nutritional communication: key issues in the context of the new EU legislation. *European Journal of Nutrition*, *48*(1), 41–48. http://doi.org/10.1007/s00394-009-0075-1

Turner, J. (2014). More diabetics require limb amputations as obesity rises. *The Herald*. Retrieved from http://www.heraldscotland.com/news/13169435.More_diabetics_require_limb_amputations_as_obesity_rises/

UK Government, & Department of Health and Social Care. (2011). *Healthy Lives, Healthy People: A Call to Action on Obesity*. Retrieved from https://www.gov.uk/government/publications/healthy-lives-healthy-people-a-call-to-action-on-obesity-in-england

Varey, R., & Pirson, M. (2014). *Humanistic Marketing*. Hampshire, UK: Palgrave MacMillan.

Vasiljevic, M., Pechey, R., & Marteau, T. M. (2015). Making food labels social: The impact of colour of nutritional labels and injunctive norms on perceptions and choice of snack foods. *Appetite*, *91*, 56–63. http://doi.org/10.1016/j.appet.2015.03.034

Veblen, T. (1899). *The Theory of the Leisure Class*. USA: Macmillan.

Velema, E., Vyth, E. L., Hoekstra, T., & Steenhuis, I. H. M. (2018). Nudging and social marketing techniques encourage employees to make healthier food choices: a randomized controlled trial in 30 worksite cafeterias in The Netherlands. *The American Journal of Clinical Nutrition*, *107*(2), 236–246. http://doi.org/10.1093/ajcn/nqx045

Vijaykumar, S., Lwin, M. O., Chao, J., & Au, C. (2013). Determinants of food label use among supermarket shoppers: A singaporean perspective. *Journal of Nutrition Education and Behavior*, *45*(3), 204–212. http://doi.org/10.1016/j.jneb.2012.09.001

Visschers, V. H. M., Hess, R., & Siegrist, M. (2010). Health motivation and product design determine consumers' visual attention to nutrition information on food products. *Public Health Nutrition*, *13*(7), 1099–1106. http://doi.org/10.1017/S1368980009993235

Volkova, E., & Ni Mhurchu, C. (2015). The Influence of Nutrition Labeling and Point-of-Purchase Information on Food Behaviours. *Current Obesity Reports*, *4*(1), 19–29. http://doi.org/10.1007/s13679-014-0135-6

Wahlich, C., Gardner, B., & McGowan, L. (2012). How, when and why do young women use nutrition information on food labels? A qualitative analysis. *Psychology & Health*, *28*(2), 202–216. http://doi.org/10.1080/08870446.2012.716439

Wallack, L. (2002). Public Health, Social Change, and Media Advocacy. *Social Marketing Quarterly*, *8*(2), 25–31. http://doi.org/10.1080/15245000212549

Wallack, L., Dorfman, L., Jernigan, D., & Themba, M. (1993). *Media advocacy and public health: Power for prevention*. Newbury Park CA: Sage.

Walls, H. L., Peeters, A., Proietto, J., & McNeil, J. J. (2011). Public health campaigns and obesity -A critique. *BMC Public Health*, *11*(1), 136. http://doi.org/10.1186/1471-2458-11-136

Walsham, G. (2006). Doing interpretive research. *European Journal of Information Systems*, *15*(3), 320–330. http://doi.org/10.1057/palgrave.ejis.3000589

Watson, W. L., Chapman, K., King, L., Kelly, B., Hughes, C., Yu Louie, J. C., … Gill, T. P. (2013). How well do Australian shoppers understand energy terms on food labels? *Public Health Nutrition*, *16*(03), 409–417. http://doi.org/10.1017/S1368980012000900

Whitehead, M. (2014). Nudge: The Real Ethical Debate? Psychology Today UK. Retrieved July 20, 2018, from https://www.psychologytoday.com/gb/blog/the-psychological-state/201410/nudge-the-real-ethical-debate

Wiebe, G. D. (1951). Merchandising Commodities and Citizenship on Television. *Public Opinion Quarterly*, *15*(4), 679. http://doi.org/10.1086/266353

Wilkinson, R. G., & Marmot, M. G. (2003). *Social Determinants of Health: The solid facts*. WHO Regional Office for Europe: World Health Organization. Retrieved from http://apps.who.int/iris/handle/10665/108082

Williams, G. H. (2013). Lay Knowledge. In *Gabe. J., Elston. M., A. and Bury M. (Ed) Key Concepts in Medical Sociology* (Vol. 48, pp. 120–123). London, UK: SAGE Publications, Ltd.

Wills, J. M., Schmidt, D. B., Pillo-Blocka, F., & Cairns, G. (2009). Exploring global consumer attitudes toward nutrition information on food labels. *Nutrition Reviews*, *67*(1), 102–106. http://doi.org/10.1111/j.1753-4887.2009.00170.x

World Health Organisation. (2004). *Global Strategy on Diet, Physical Activity and Health*. Geneva: World Health Organisation. Retrieved from http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_web.pdf

World Health Organisation. (2012). *What is Front-of-Pack Labelling?* Geneva: World Health Organisation. Retrieved from http://www.who.int/nutrition/events/2013_FAO_WHO_workshop_frontofpack_nutritionlabelling_presentation_L'Abbe.pdf

World Health Organisation. (2015). *WHO, What do we mean by "sex" and "gender"?* Gender, women and health. Retrieved from https://www.legal-tools.org/doc/a33dc3/pdf/

Wright, L. T., Nancarrow, C., & Kwok, P. (2001). Food taste preferences and cultural influences on consumption. *British Food Journal*, *103*(5), 348–357. http://doi.org/10.1108/00070700110396321

Wymer, W. (2011). Developing more effective social marketing strategies. *Journal of Social Marketing*, *1*(1), 17–31. http://doi.org/10.1108/20426761111104400

Wymer, W. (2015). *Innovations in Social Marketing and Public Health Communication*.

London: Springer International Publishing.