Industry responses to the UK government's public consultation on the proposed soft drinks industry levy: Qualitative documentary analysis using the framework method and a systems perspective

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A B S T R A C T

The United Kingdom (UK) Chancellor of the exchequer announced a tax on sugar sweetened beverages in his March 2016 budget. A public consultation on the Soft Drinks Industry Levy (SDIL) was conducted before the levy's implementation in 2018. We aimed to identify arguments that industry stakeholders made during the public consultation to influence the discursive environment using thematic framework analysis with a novel complex systems lens.

Forty-two censored consultation responses from industry stakeholders (manufacturers, retailers, or representative trade associations) were obtained by Freedom of Information requests to Her Majesty's Revenue & Customs and Her Majesty's Treasury. Industry stakeholders were overall opposed to the SDIL. Key themes included unintended consequences of the levy, denying the impact of the levy, the responsibility of government to industry over health, and proposals of alternative policies. Industry stakeholders created a discursive environment that showcased the complexity of business relationships in response to the levy, in contrast to linear causal arguments and simplistic solutions (e.g., consumer education). Documented industry discursive strategies were engaged, including promoting voluntary agreements, use of industry commissioned research, and questioning the effectiveness of the policy.

Industry stakeholders' submissions presented opposition to an evidence-based policy and use of documented industry discursive strategies emphasised the need for a pro-active and transparent consultation process and stakeholder management. A complex systems approach, alongside robust evidence, can identify changing relationships and adaptations in response to a policy, and pre-empt industry positioning in future health policy-making by identifying areas of push-back in advance to allow better stakeholder management.

1. Background

Obesity is a complex chronic disease that continues to have rising prevalence globally. A siloed focus on individual responsibility, as opposed to acknowledging the complex systemic drivers of obesity at population and environmental levels, has limited policy progress (Ralston et al., 2018; Roberto et al., 2015). The 2019 Global Burden of Disease analysis reported that dietary risks were responsible for 7.94 million deaths and 188 million disability-adjusted life-years among adults (Murray et al., 2020). In the United Kingdom (UK), obesity is estimated to have cost an equivalent of £60 billion in 2018 through direct medical costs and its impact on productivity (Davies, 2019). Sugar

in liquid forms, such as that found in soft drinks, increases risk of obesity and diabetes (Sundborn et al., 2019) and has become the target for health policies worldwide, primarily through taxation of Sugar Sweetened Beverages (SSB), recommended by WHO (World Cancer Research Fund International, 2021; WHO, 2017). In the UK, a two-tiered SSB levy was implemented in 2018. The UK Government's consultation on this novel policy is the focus of this study. We aimed to analyse industry stakeholders' discourse in response to the levy in a unique policy window in which they had the opportunity to participate in the policy process and generate a discursive environment that could influence opposition or acceptance of the final policy before it was implemented.

1.1. Soft drinks industry levy

A report by the UK government's Scientific Advisory Committee on Nutrition (SACN) (HMRC & HMT, 2016) recommended minimising consumption of SSB because of the association with an increased risk of diabetes and weight gain (Vartanian et al., 2007). Economic studies also found reduced demand for SSB with higher prices (Escobar et al., 2013), and changes in habit as a result of reduced exposure to high sugar SSB (Hawkes et al., 2015; Zhen et al., 2011). Following this recommendation by the SACN, in 2016 the Chancellor of the Exchequer announced a Soft Drinks Industry Levy (SDIL) in his spring budget statement that aimed to reduce sugar content in SSB through reformulation and reduced portion size (GOV.UK, 2016). The two-tiered levy is a tax on manufacturers and importers of soft drinks and structured as presented in Table 1 (HMRC & HMT, 2016).

Her Majesty's Revenue & Customs (HMRC) and Her Majesty's Treasury (HMT) consulted on a Soft Drinks Industry Levy (SDIL) later in 2016. The public consultation aimed to refine the policy that was due to be implemented in 2018 (HMRC & HMT, 2016). The summary of responses published in late 2016 reported 154 responses, and that 78 % of manufacturers and associated trade bodies were opposed to the levy (HMT, 2016). This opposition was also reflected in the news media, analysis of which found industry representatives and manufacturers took on a strong oppositional stance initially, questioning the evidence base and effectiveness of the policy; arguing the SDIL is too reductionist an approach to address obesity; and that the soft drinks industry were being unfairly targeted (Penney et al., 2023). Of note, evolving opposition narratives were reported following the consultation, that went on to become more reassuring to stakeholders about the limited impact of the tax when it was implemented (Penney et al., 2023; Penney et al., 2018). Opponents were found to employ a commonly used industry playbook of arguments, including avoiding regulation being introduced, promoting self-regulation and voluntary schemes, denying effectiveness, and questioning the evidence (Penney et al., 2023; Hilton et al., 2019).

Since implementation, the policy has been effective at incentivising manufacturers to reformulate soft drinks with reduced sugar (Scarborough et al., 2020), with only short-term negative impact on UK soft drinks manufacturers' domestic turnover that did not continue post-implementation (Law et al., 2020). Furthermore, a controlled interrupted time series analysis found a substantial reduction per household per week in the amount of sugar purchased in soft drinks although the volume of drinks purchased did not change (Pell et al., 2021).

1.2. Food industry lobbying

A growing body of literature identifies a 'common playbook' (Hilton et al., 2019) that unhealthy commodity industries use to lobby governments (Vandenbrink et al., 2020; Moodie, 2017; Mialon et al., 2015; Savell et al., 2014; Hoe et al., 2022), which includes tactics such as discrediting scientific evidence or scientists (Vandenbrink et al., 2020; Moodie, 2017; Granheim et al., 2017; Stuckler and Sick, 2011), using public relations to inform public opinion (Vandenbrink et al., 2020; Mialon et al., 2015; Granheim et al., 2017; Stuckler and Sick, 2011), avoiding the introduction of regulation through the promotion of alternative policy proposals more favourable to industry (Vandenbrink et al., 2020; Mialon et al., 2015; Savell et al., 2014), focusing on the positive impact of industry (Vandenbrink et al., 2020; Granheim et al., 2017; Stuckler and Sick, 2011), and threatening litigation (Moodie, 2017; Mialon et al., 2015; Granheim et al., 2017). These tactics may be used to avoid, or delay regulation. A recent example of this is the delay in the UK advertising restrictions and ban on multi-buy deals, which is reported in part to be to give industry more time to prepare for the regulations (GOV.UK, 2022).

Furthermore, the adaptation of the complexity argument by industry stakeholder has also been used to reject policies, arguing a proposed policy is only one part of the puzzle and hence unlikely to be successful (Petticrew et al., 2017; Carters-White et al., 2021). However, the solutions commonly proposed in response tend to be centred around education and individual responsibility, which are arguably less complex policy solutions (Petticrew et al., 2017).

Consultations are perceived to increase the legitimacy of policy-making, and enter stakeholders into the policy making process. UK consultations have a higher share of companies responding rather than interest groups or the public (Rasmussen, 2015), who promote values aligned with market justice approach to public health policy rather than the social justice approaches taken by non-industry responders (Carters-White et al., 2021). A growing body of literature suggests consultations provide an opportunity for stakeholders to influence policy development, hence their analysis could provide insight to how organisational interests may guide policy development and how stakeholders position themselves accordingly (Hawkins and Holden, 2013; Scott et al., 2017; Lauber et al., 2020).

The consultation responses provide unique access to direct industry lobbying of policymakers during policy development. It also allows insight into how industry stakeholders position themselves with policymakers, at the point where the industry's public narrative around the SDIL began to evolve to acceptance of the policy.

1.3. Complex systems

There is increasing interest in complexity and systems thinking as tools to conceptualise and identify policy solutions in public health research (Finegood and Steinberg, 2014; McGill et al., 2021; White et al., 2017). The influential Foresight obesity report, published in 2007 (GOV.UK, 2007), was an attempt to create a conceptual map of the factors and interdependencies that characterise the complex system of factors influencing obesity. A complex system represents a dynamic set of factors and actors, "whose repeated interactions result in … behaviour that feeds back into the behaviour of the individual parts" (Rickles et al., 2007). In comparison, a linear causal model would imply direct and proportional cause and effect. It is the relationship between the factors and actors that is key (Finegood and Steinberg, 2014; McGill et al., 2021). The inclusion of leverage points, where a small change can potentially result in a large shift in the system, provides an opportunity for a public health intervention to have a dramatic effect (Meadows, 1999). Many terms are used to describe complex systems (Finegood and Steinberg, 2014; McGill et al., 2021; Egan et al., 2018; Egan et al., 2019); this study utilises a glossary adapted from a research methods review (McGill et al., 2021) in Table 2.

To gain a better understanding of SSB industry responses, this study adopts a complex system lens to examine industry responses, by incorporating whether they accounted for the complexity of the policy in their responses. In doing so, the analysis aims to consider the relationships between arguments and factors presented by industry stakeholders

Table 1
Structure of the UK Soft Drinks Industry Levy (GOV.UK, 2021).

Levy tier	Details
Higher tier	Tax of 24p per litre of drink if it contains ≥ 8 g of sugar per 100 ml
Lower tier	Tax of 18p per litre of drink if it contains between ≥ 5 to 8 g of sugar per 100 ml
Exemption categories	• Drinks containing < 5 g of sugar per 100 ml • Milk products (at least 75 % milk) or milk replacements • Alcohol replacement drinks (Alcohol by volume (ABV) of 1.2 % or lower) • Fruit juice or vegetable juice with no added sugar • Liquid drink flavouring • Powdered drinks • Mixed liquids served in an open container • Infant formula, follow on formula, or baby foods • Dietary replacement food or dietary food used for medical purposes

Table 2
Common terms to describe **properties of complex adaptive** systems.

Common terms to describe properties of complex adaptive systems	Description
Multiple agents	The different components that are included in the system. This can refer to individuals, organisations, or institutions among others.
Non-linearity	Where a change in outcome is not proportional to the input.
Feedback loops	Feedback loops describe a response to a change that can be positive (or reinforcing) leading to a more and more increase or decrease in a change, or negative where the resulting change would be in the opposite direction.
Adaptation	How the behaviour of the system can change in response to an intervention.
Relationships	How the multiple agents react or behaviour with each other.
Boundaries	These define the parameters of the system. They are not inherent within it but need to be imposed to enable us to understand it.
Unintended consequences	Unexpected changes that occur in response to an intervention.

in response to the policy, and how these relationships may indirectly shape the final discourse (Knai et al., 2021). Additionally, applying system thinking enables framing subsequent evaluations of public policy in ways that are better able to identify potential unanticipated consequences (Penney et al., 2016), including system adaptations represented by industry push back. Previous research on the industry discourse around the SDIL focused on news media and print press (Penney et al., 2023; Penney et al., 2018; Hilton et al., 2019) reflects public relations approaches that industry stakeholders took in response to the policy announcement. The consultation responses provide a snapshot of direct industry communications with policymakers while the policy was in development, at a time when the industry public narrative was shifting (Penney et al., 2023). Analysing the arguments presented using a complexity lens allows further insight into how industry stakeholders discourse can generate environments constructive or obstructive to evidence-based public health policies (Knai et al., 2021), and pre-empt industry positioning in future health policymaking by identifying areas of push-back in advance to allow for better stakeholder management.

2. Methods

2.1. Study design and setting

This cross-sectional, qualitative study aimed to identify and understand industry's response to the UK's SDIL. Thematic framework analysis with a complex systems lens was used to analyse submissions to the HMRC & HMT 2016 public consultation (HMRC & HMT, 2016) on the proposed UK-wide SDIL that was introduced in April 2018.

HMRC & HMT conducted a public consultation that ran over eight weeks (HMRC & HMT, 2016). The consultation was open to individuals or organisations interested in the policy scope or objectives, or directly affected by the levy. The consultation consisted of 46 questions over eight sections covering the businesses affected, types of drinks liable, technical details of the levy, and administrative application (HMRC & HMT, 2016). The public consultation received 154 responses from multiple individuals and organisations, and an aggregated summary of the responses was published in late 2016 (HMT, 2016). A breakdown of responses found 26 % were from medical and health groups; 25 % from manufacturers; 18 % from individuals; 13 % from representative trade associations, 11 % from other government departments and local authorities, and 7 % from retailers (HMT, 2016).

2.2. Data collection

A Freedom of Information (FOI) request was made to gain access to the consultation responses. The FOI Act became UK law in 2000 and allows the disclosure of information held by public authorities or by persons providing services for them (Britain, 2000). An FOI request was made for all 154 consultation responses, but this was declined on the grounds that the volume of pages required would be too demanding on time and resources. A revised request was sent to reduce the burden by restricting to organisations that were categorised as manufacturers, retailers, or representative trade associations by the consultation (hereafter referred to as industry stakeholders), who did not request confidentiality. The revised request was restricted to of 21 of the 46 questions in the consultation, which were more likely to have free text and not quantitative or technical in nature (HMRC & HMT, 2016). The full wording of the included questions can be found in Supplementary File 1. This request was granted.

2.3. Data analysis

Redacted responses were received in a Microsoft excel spreadsheet with questions as the column headings and each response, labelled numerically, as the rows. Organisation and individual names and product names had been redacted and replaced with "[…]". Blank cells indicated the respondent did not provide an answer, and some answers were removed and labelled "commercially sensitive". Basic quantitative analysis was conducted in Excel to identify the number of responses per question and number of blank responses. Each response was extracted in full into a Microsoft Word document and uploaded into the data coding software NVivo 12 for data management and analysis (QSR International Pty Ltd, 2015). Ethical approval was sought from the London School of Hygiene and Tropical Medicine MSc Research Ethics Committee (Ref: 14802).

The Framework method is commonly used in policy analysis, and has a well-documented methodology that enables the systematic analysis of large volumes of data whist incorporating *a priori* themes identified from literature (Srivastava and Thomson, 2009; Pope et al., 2000). The **five steps of framework analysis**, presented in Fig. 1, were followed sequentially.

Firstly, **familiarisation** consisted of reading each individual response and inductively logging any ideas that were identified when reading through. Once completed the log of ideas was reviewed and, where appropriate, grouped. A priori themes were identified through a desktop literature review on the commercial determinants of health and corporate political activity by industries selling unhealthy commodities (Moodie, 2017; Mialon et al., 2016). These log ideas were then combined with the *a priori* themes to create an initial set of codes for the preliminary **thematic framework**.

The thematic framework codes were set up as nodes (the term used for codes) in NVivo with the larger descriptive topic area and subcategory nodes nested under each node. As the responses were coded in the **indexing** step, the quotes were reiteratively reviewed to rephrase codes and identify further nodes. As further nodes were created the data was reviewed again to see if any further quotes could be coded, until saturation was reached, and no further nodes were identified. Once all the data had been coded, the data was reorganised in the **charting** step, where coded quotes were extracted and grouped according to the finalised descriptive thematic framework topics.

Finally, in the **mapping and interpretation** step the charts were then used to map associations between topic areas, identify overarching themes, and develop explanations for the findings (Pope et al., 2000). A novel method was applied during this step, whereby the codes that were grouped in the descriptive thematic framework, were mapped across the terms describing a complex system presented in Table 2 (McGill et al., 2021) to develop a framework matrix. The framework matrix included the terms to describe complex systems as the columns and the thematic
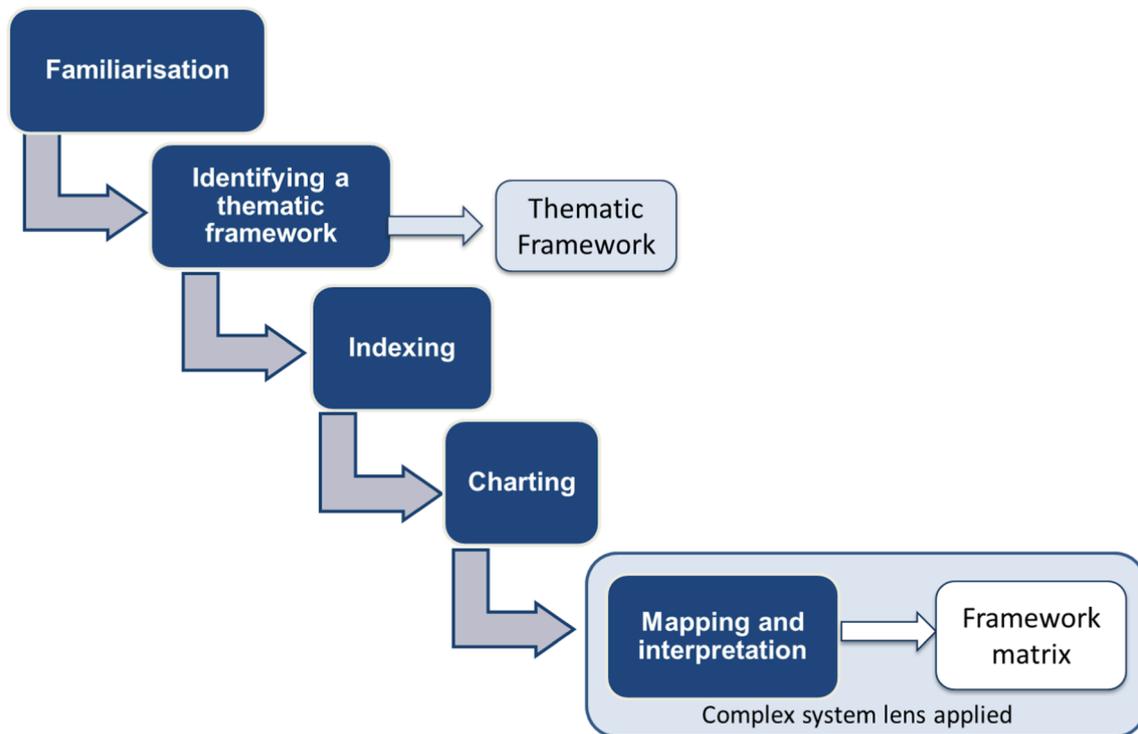
Fig. 1. Framework Analysis flowchart.

framework codes as the rows.

Applying the complex system lens allowed for a deeper analysis of data where more implicit arguments had been made or where there were linear arguments that did not account for the complexity of the policy. The terms used to describe a complex system, presented in Table 2, were adapted from a research methods review glossary (McGill et al., 2021) as well as including key terms commonly referred to in the literature (Finegood and Steinberg, 2014; Egan et al., 2018; Egan et al., 2019).

3. Results

Forty-two industry stakeholder submissions to the SDIL consultation were obtained and analysed, of which 64 % (n = 27) were from businesses, 26 % (n = 11) were from trade associations, and 10 % (n = 4) unknown (three had not answered the question, and a fourth was unclear in the answer). There was a 61 % (n = 592) response rate across the 21 questions (n = 966) with an average of 26 organisations responding per question (range: 18 to 39 organisations). Although the consultation submission guidance clearly stated that responses "may be published or disclosed in accordance with the access to information regimes" (HMRC & HMT, 2016) such as FOI, some data provided in response to questions was considered sensitive by government and redacted. There were 59 instances (6 % of all responses) of names or products being redacted and labelled '…', and four answers removed in full and labelled 'commercially sensitive'.

Most submissions tended to agree with some aspects of the proposed levy and disagree with others and provided detailed responses that are the focus of the results presented below. Submissions that responded solely in support of the levy were shorter, had a lower response rate to the questions, and did not elaborate on why they agreed. A number of submissions from different respondents contained phrases with exactly the same wording, suggesting co-ordinated responses, but we were unable to identify the relationship between the duplicate responses due to the censoring of responses.

3.1. Framework matrix analysis

The thematic framework consisted of 39 individual codes identified and grouped into eight topic areas (see Supplementary File 2). These codes were mapped across the terms describing a complex system presented in Table 2 (McGill et al., 2021) in the framework matrix (see Supplementary File 3). Analysis of the framework matrix identified the following themes: unintended consequences of the levy, denying the impact of the levy, the responsibility of government to industry over health, and proposals of alternative policy options. References to the terms describing a complex system have been highlighted in **bold**.

3.1.1. Unintended consequences of the levy

References to **unintended consequences** showed industry stakeholders engaged with a complex systems approach, particularly in response to the levy's impact on businesses, with it being directly referred to in some responses (three businesses – Cases 3, 12 and 17; a trade association – Case 34; and an uncategorised organisation – Case 43), whilst others had more indirect references.

> "In addition to failing to achieve health objectives, placing the tax point at the point of production will also create a number of other unintended consequences, from distortions of competition and cash flow challenges to unnecessary bureaucracy and contractual complexity when working with contract packers"

(Case 3, Business, Q14).

Changes in the flow of information and money between **multiple agents** due to the levy were presented as significant obstacles for businesses. Generally, the **relationship** between those in the SSB production process was portrayed as unsupportive with concerns over the accuracy and timing of information communicated between them, and the **unintended consequence** of the levy would be to exacerbate this due to the need to report accurate drink volumes to HMRC.

Moreover, the **relationship** between the UK soft drinks industry and international soft drinks importers was identified as competitive, with the levy considered to have the **unintended consequence** of

'*disadvantag[ing] UK manufactured products*' (repeated verbatim by five businesses – Cases 3, 11, 12, 32, and 36, and one trade association – Case 10) by allowing importation of high sugar drinks through the 'small operator's exemption'. The consultation guidance justified the exclusion of small operators (the threshold for which was not set at the time of consultation) from the levy to balance the administrative costs of enforcement against the revenue gained. Many felt the government would not be able to adequately prevent abuse of the policy where liable products are sold through multiple small operators that are exempted. This **adaptation** of business strategies to avoid the levy by splitting larger organisations into smaller exempted importing entities was a key concern echoed in many responses. There were also four references to the positive (reinforcing) **feedback loop** where subsequent increased importation of higher sugar content SSB (incentivised by the small importer tax relief) would result in the unintended increased consumption of sugar by consumers.

> An increase in "tax-free" imports of products made outwith the UK by these multinational businesses will undoubtedly arise, whether legally within the permitted small producer/importer threshold, or illegally through the grey market."
> (Case 3, Business, Q24)

3.1.2. Denying the impact of the levy

In contrast to arguments acknowledging the complexity of setting up such a levy from a business perspective and the impact it would have on both the different actors in the system and their relationships, **linear arguments** of cause and effect were used to deny the effectiveness of the levy and how it could alter relationships. Responses identified the positive benefits the SSB industry brings to society such as employment opportunities, charitable donations, and agricultural support without consideration of possible product harms and how those harms could shift the system (such as increasing chronic non-communicable diseases affecting workers productivity). Some responses were particularly blunt and lacked further explanation:

> "First and foremost we do not believe that a soft drinks only tax will be effective in achieving Government policy objectives of tackling obesity, regardless of where the liability for payment sits" (Case 3, Business, Q14 and very similar wording in Case 10- Trade association and Case's 37 and 29- Business).

This quote also alludes to the simplified causal chain of the SDIL where the increased cost of SSB directly results in reduced purchasing, and consequently consumption of SSBs that will result in less sugar consumption by the public, and hence health impacts. However, this linear chain ignores the intended impact of the levy in changing industry behaviour through reformulation, as well as changes in retail availability of SSBs and public perceptions to high sugar SSBs. Of note, no explicit reference was made to the intended negative **feedback loop** of the levy where increased tax price would lead to decreased sugar content in SSB through reformulation. Others denied the need for the levy due to an ongoing positive **feedback loop** between producers and consumers where it was argued that '*consumer preferences and tastes for sweetness*' (Case 3, 10, and 19) would diminish over time and, in response, producers would gradually decrease the dilution ratio in 'effectively a 'DIY' reformulation' (Case 10, 19, and 32).

One response referenced an industry funded report by Oxford Economics 'The Economic Impact of the Soft Drinks Levy' (Oxford Economics, 2016) to deny the impact of the levy. They argued introduction of the levy would result in consumers switching from drinking taxed drinks towards non-taxed categories with a "*negligible impact on the daily calorific intake*" (Case 10, Trade Association, Q8).

3.1.3. The responsibility of government to industry over health

The government's responsibility to maintain a level playing field for all products was unanimously highlighted in all responses. The proposed exemption of some products was presented as contentious and unfair in many of the consultation responses. In contrast, opinions on how, and to what extent, the government should responsibly manage public health was divided.

> "*The differentiation of milk-based added sugar products risks effectively providing state aid to one product range over another… The differentiation between fruit nectars and added sugar milk-based products is especially contradictory in supporting one sector through the tax system.*"
> (Case 10, Trade Association, Q8)

Many responses referred to the exemption of milk products specifically, arguing that the 75 % threshold was insufficient to address the government's aim of reducing sugar consumption from SSBs, whilst others felt the threshold was too restrictive. Evidence presented in consultation responses included legislation (that was almost exclusively EU law and regulations) to define terms such as added sugars or milk, and commercial data to describe substitution of SSBs with milk-products. The majority presented nutritional evidence of exempted products negatively in comparison to their own tax liable products; and contrastingly, fewer responses used nutritional evidence to promote their products. One response challenged the legality of the levy by referring to the redesign of a broader Finnish confectionary tax implemented in 2011. Arguing that the Finnish policy went against legal requirements by potentially favouring one drinks segment over another, they denied the legality of the levy if it was to be introduced without extending it to include milk-based drinks.

To argue for the exemption of fruit juices, some responses referred to government publications, such as reported survey data that stated fruit intake nationally was lower than recommended. These responses argued the exclusion of all fruit juices will result in increased fruit consumption in line with government recommendations.

> "*The Fruit Juices and Fruit Nectars (England) Regulations 2013 provides a reasonable reference point to keep pure fruit products out of scope… From the perspective of fruit juice, it is worth noting again that government's own National Diet and Nutrition Survey data shows fruit juice consumption is low amongst most consumers… The sugars naturally present in 100% fruit juice are offset by the positive contribution of FJ to achieving 5-a-day (0.6 of a portion on average) and the contribution to vitamin and mineral intakes, notably folate, vitamin C and potassium.*"
> (Case 7, Trade Association, Q5c)

Similarly, regarding exempted low-alcohol products, of the 18 respondents that expressed an opinion, almost two-thirds proposed a complete exemption. They argued it was in line with the government responsibility to the public to reduce the harms from excessive alcohol consumption by supporting low-alcohol options. The negative **feedback loop** described (where the change was in the opposite direction), was the potential reduced consumption of alcoholic units by increasing production and availability of low- and no-alcohol products. However, the remaining third of responses noted no– or low-alcohol products are substitutes for soft drinks and hence argued should be liable for the levy and government should not be exempting these products.

Finally, industry stakeholders positioned themselves in a positive **relationship** with government with examples of "*support*" for voluntary agreements (Case 1, Business Q1), and industry's benefits to society through employment and charitable donations.

3.1.4. Proposing alternative policy options

By defining the structure and breadth of the levy, the consultation document presented a clear **system boundary** that was restricted to SSBs. Some responses challenged that this would have insufficient impact, hence the **boundary** should be extended to 'added sugar' as an ingredient. This was justified in the responses by quantifying the proportion of the diet that soft drinks make up, and by comparing the market share of other products that are exempted from the levy to illustrate why restricting the levy to soft drinks is unfair.

"Tax sugar as an ingredient at source which would have the effect of encouraging all food and drink manufacturers to reformulate and reduce sugar."

(Case 3, Business, Q14)

Other organisations affiliated to the alcohol industry argued the **boundaries** were being widened from the 'major concern' of childhood obesity highlighted in the consultation guidance (HMRC & HMT, 2016) by including low- and no-alcohol products, which they felt wouldn't contribute to achieving an impact.

Lastly, while the consultation guidance stated that a consumer tax was outside the scope of the consultation as the proposed levy impact was to encourage reformulation of products (HMRC & HMT, 2016), many responses denied the appropriateness of an industry levy. Some responses suggested a consumer tax would better inform consumers of the sugar content of products. Other responses identified a range of points at which the levy should be placed along the supply chain.

"A consumer tax, … providing education to the consumer that full sugar products carry the tax … create[ing] better awareness of the issue and provide an easier method of control through the whole supply chain"

(Case 15, Business, Q14)

4. Discussion

4.1. Summary of main findings

Framework analysis of 42 submissions by industry stakeholders to the UK government's public consultation on the proposed SDIL found four key themes: unintended consequences of the levy, denying the impact of the levy, the responsibility of government to industry over health, and proposals of alternative policy options. Adopting a complex systems lens found industry stakeholders embraced the complexity of how the policy would affect different business actors and their relationships, but employed simplistic, linear arguments to contest the intended outcome of the levy to incentivise reformulation, and undermine the potential impact of the levy.

4.2. Relationship to prior knowledge

To the best of our knowledge no previous studies have directly analysed industry consultation responses on the potential impacts of the proposed SDIL. This was a unique policy window, given industry stakeholders began changing their public narrative from policy opposition to acceptance following the consultation (Penney et al., 2023). Many of the responses revealed discursive strategies commonly used by unhealthy commodity industries in interactions with policymakers (Knai et al., 2021; The PLoS Medicine Editors, 2012) particularly adopting a market justice approach rather than a social justice framing (Carters-White et al., 2021). While denying the complexity of the system in the policy's ability to create impact, many responses promoted common, simplistic alternative policy solutions, such as consumer education (Petticrew et al., 2017). Shifting responsibility from industry to the individual through a consumer tax or education, place greater demands on individual agency, and tend to be less effective and inequitable by design (Meadows, 1999; Kleinert and Horton, 2019; Adler and Stewart, 2009; Adams et al., 2016). Similarly, the suggestion of voluntary agreements (GOV.UK, 2021) is also a frequently used discursive strategy. It creates a shift in the relationship of industry stakeholders with other parts of the system by embedding themselves in the design of such agreement (Carters-White et al., 2021). They are also used to avoid more effective 'upstream' regulation (Stuckler and Nestle, 2012); but have had limited success in other sectors (Knai et al., 2015; Public Health, 2018).

Whilst simultaneously promoting less effective interventions, many stakeholders questioned the effectiveness of the policy, and one

questioned its legality, also a documented discursive strategy (Penney et al., 2018). Claims of the ineffectiveness of the levy directly contradict the scientific consensus and emerging evidence from evaluation of the SDIL (Escobar et al., 2013; Briggs et al., 2017; Nutrition, 2015; Scarborough et al., 2020; Law et al., 2020; Pell et al., 2021). Strategically targeted policies, such as the SDIL can both encourage product reformulation, and play a role in inducing wider system changes (Hawkes et al., 2015) by acting as a key leverage points (Meadows, 1999).

Furthermore, the use of industry-commissioned research (Moodie, 2017) that included economic modelling that projected a lower average calorie reduction per person (Oxford Economics, 2016) and did not account for reformulation in its projections. Thus, it was more favourable to industry stakeholders than a peer-reviewed economic model (Briggs et al., 2017) or subsequent evaluative research (Scarborough et al., 2020; Pell et al., 2021; Law et al., 2020).

The suggestion of widening the scope to impose a sugar commodity tax in some responses, while a logical policy development, in the context of the SDIL consultation is both out of scope and likely to cause significant delays. to public health action. Additionally, this approach would be at odds with market justice standpoint exemplified in the responses (Carters-White et al., 2021) and would contribute to what has been described as "policy cacophony" (Lang and Rayner, 2007) whereby a coherent direction on policymaking is drowned out by noise created from the proliferation of proposed alternative policy solutions.

Inclusion of a complex systems approach in this study allowed us to deepen the analysis by considering the discursive environment created by industry stakeholders, and the relationships between the responses. Industry stakeholders showed awareness of complexity on business implications of changing relationships between industry stakeholders (e. g., producers, contractors, and bottlers), yet portrayed themselves as victims to a policy targeting industry rights with no insight into SSB's impact on health and inequalities. Linear arguments implying a causal link between the levy and reduced obesity were inaccurate (White et al., 2017), and derailed meaningful discussion on the policy impact. Due to the difficult nature of the research there are few studies that incorporate complex systems into the study design (Kleinert and Horton, 2019), and those that do tend to be evaluations (McGill et al., 2020). A similar study on Canadian regulations comparing industry and non-industry stakeholders, found stakeholders held different perspectives on system cohesion, and attempts to redraw system boundaries through suggestions of further policy solutions.

4.3. Strengths and limitations of the study

A key strength of the study is the analysis of primary data submitted directly to government by industry stakeholders, to capture their unique perspective in the policy window where they could potentially influence the final policy format. Whilst the data was redacted by HMRC & HMT, we were able to identify co-ordinated responses to the consultation where the same text was repeated verbatim. Additionally, the novel approach to analysis, incorporating complex systems theory into the widely established framework analysis method, enabled a deeper understanding of the discursive environment created and stakeholder positioning within that. As well as an awareness of where the complexity of policy issues was considered and where industry's perspective took a more simplistic approach.

The main limitation of this study was that the data obtained from HMRC & HMT via the revised FOI request was limited to industry stakeholders and 21 questions. This limited dataset prevented us from comparing arguments made by industry stakeholders with those from health, governmental and other groups. Also, given that the consultation guidance notes indicated that submissions would be subject to the FOI Act, the censoring of the data that we received was unexpected, and we were unable to analyse responses by organisations and look into the relationships between respondents. Despite these restrictions, there remained sufficient evidence to allow us to draw valid conclusions from

this study.

The cross-sectional nature of the public consultation provided a snapshot of industry responses to the proposed levy. Due to limited capacity, the coding framework was agreed among the study authors, but a single researcher applied the codes to the data. However, the iterative nature of framework analysis, where codes were refined and revisited at the indexing, charting, and framework matrix stages, limits the likelihood of coding errors.

4.4. Policy implications and future research

Accessing industry stakeholders responses to a public consultation provides valuable data to better understand industry stakeholders and their vested interests (McCambridge et al., 2013). Making public consultations an open and transparent process, as was done during the consultation for the Canadian Healthy Eating Strategy, where all meetings and correspondence with stakeholders was published online (Goverment of Canada, 2016) is an effective way to manage accountability. Industry stakeholders tend to have more interactions with policymakers (Vandenbrink et al., 2020; Mulligan et al., 2021) and hence more opportunities to influence policy development (Carters-White et al., 2021). In comparison, non-industry stakeholders (e.g. health groups and academics) tend to have less resource to counter such lobbying and a slower response (Stuckler and Nestle, 2012). Therefore, a passive consultation process is inherently unequal given the difference in resource and overwhelming industry representation (Rasmussen, 2015). Active management of the process, where all stakeholders' views are obtained and considered, as well as greater transparency to ensure accountability, will provide a better understanding of the system in which health policies are introduced.

This study was limited to the industry stakeholder viewpoint, and it would be of interest to request the non-industry stakeholders' responses and compare the discourse. Furthermore, analysing the impact of the consultation responses on changes made to the final format of the policy would give further insight into the impact of industry lobbying during the policymaking process.

5. Conclusions

In summary, the soft drinks industry stakeholders showed awareness of complexity of the policy on business implications and changing relationships as a result but employed contrastingly linear arguments to challenge the effectiveness of the levy and propose solutions. Evidence of previously documented industry discursive strategies reiterate the need to effectively manage industry stakeholders in public health policy consultation processes (Moodie, 2017; Petticrew et al., 2017; Stuckler and Nestle, 2012; Knai et al., 2015; Kleinert and Horton, 2015).

Given their vested interests, it is vital that governments adopt an active, open, and transparent consultation approach to ensure all stakeholder views are adequately represented strictly within the scope of the proposed policy. Additional consideration should be given to the extent of involvement of industry stakeholders in policy decision-making processes as opposed to implementation (Stuckler and Nestle, 2012). Finally, incorporating a complex systems perspective into public health policy, practice and research, allows insight into the discursive environment created by key stakeholders and whether they are obstructive to evidence-based public health policies. Considering their positioning within the system, and relationship with others as a result policymakers can pre-empt how relationships may change as a result of a policy to mitigate industry concerns and opposition.

CRediT authorship contribution statement

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.foodpol.2023.102498.

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