



# Implications of international trade and investment agreements on policy space for restricting marketing of unhealthy food and beverages to children: lessons from inter-disciplinary expert interviews

Kelly Garton<sup>1,\*</sup> , Boyd Swinburn<sup>1</sup> and Anne Marie Thow<sup>2</sup>

<sup>1</sup>School of Population Health, The University of Auckland, Auckland 1023, New Zealand: <sup>2</sup>Menzies Centre for Health Policy, The University of Sydney, Sydney, NSW, Australia

Submitted 11 December 2020: Final revision received 12 April 2021: Accepted 28 April 2021: First published online 11 May 2021

## Abstract

*Objective:* To determine the implications of international trade and investment agreements (TIA) for national governments' policy space to restrict the marketing of unhealthy food and beverages to children.

*Design:* In-depth interviews based on a series of policy scenario 'vignettes,' guided by an adapted scenario analysis methodology.

*Setting:* Global.

*Participants:* Nine key informants from relevant sectors, with expertise regarding the intersection of public health nutrition policy, international trade law and international investment law.

*Results:* Participants consistently identified the relevance of several principles, common to many TIA: non-discrimination, necessity and justification, market access requirements and quantitative restrictions, intellectual property rights and trademark protections and fair and equitable treatment of investors. Two main policy design factors that interact heavily with TIA-related policy space were the framing of objectives and regulatory distinctions drawn. Contextual factors may shape the analysis of TIA-related policy space on a case-by-case basis, while the relative power of the actors and institutions involved in both domestic and international policy spheres may influence whether and how such legal constraints to policy space are activated.

*Conclusions:* Regulatory marketing restrictions run the risk of incurring challenges under World Trade Organization agreements and other free TIA. However, concerned policymakers should be aware of the difference between theoretical risk, threat of a challenge and realistic initiation and/or loss of a formal dispute. Our findings indicate that there is policy space to adopt significant marketing restrictions, though an understanding of these legal risks and strategic policy design are important.

**Keywords**  
Food marketing  
International trade and investment  
Nutrition policy  
Scenario analysis

Children's exposure to unhealthy food and beverage marketing has a direct impact on their dietary preference for, and consumption/intake of, these products<sup>(1–5)</sup>. In addition, children are particularly vulnerable to the persuasive power of marketing messages and techniques (for example, celebrity and athlete endorsements, in-store marketing and toy co-branding)<sup>(1,5–7)</sup>. As the burden of child malnutrition in all its forms continues to rise globally<sup>(8)</sup>, the improvement of food environments through restricting children's exposure to, and the persuasive power of, marketing

practices stands out as a priority in public health nutrition policy. Restricting of food marketing is also increasingly recognised as a child rights issue, implying States' obligation to regulate<sup>(9–13)</sup>.

The WHO and its regional offices have published recommendations for policy intervention to limit the negative impact of food marketing to children and adolescents, with an aim of reducing their consumption of energy-dense and high-in saturated fat, trans fat, free sugar and/or salt products, including fast foods and sugar-sweetened beverages<sup>(14–16)</sup>. WHO

\*Corresponding author: Email [kelly.garton@auckland.ac.nz](mailto:kelly.garton@auckland.ac.nz)

© The Author(s), 2021. Published by Cambridge University Press on behalf of The Nutrition Society



recommendations include that 'marketing' restrictions should cover not only advertising but all other commercial communications designed to promote (or have the effect of promoting) high-in saturated fat, trans fat, free sugar and/or salt foods; that States should take a comprehensive approach for the highest potential to achieve desired impacts; and that Member States should cooperate to reduce the impact of cross-border marketing<sup>(14,17)</sup>. In particular, as digital media and other forms of access to children become more widespread, it follows that regulations seeking to reduce children's exposure to marketing of unhealthy products should expand from broadcast (primarily television) advertising bans, towards encompassing narrowcast (e.g. social media)<sup>(18)</sup>, and novel marketing techniques such as product placement, co-creation, and 'advergaming' (a method of interactive marketing in which free downloadable computer games appear on websites to advertise a company or product).

Restriction of marketing can in practice take many different forms. The NOURISHING Database has documented the various actions taken so far around the world in this policy area (by a total of twenty-nine countries as of December 2020), ranging from: voluntary pledges and self-regulation, to mandatory regulation; restriction of broadcast food advertising, and/or non-broadcast communications channels, to restriction in *any medium*, as well as restriction of marketing in schools; with most regulating only *specific marketing techniques*, or promotion of specific food items and beverages (such as sugar-sweetened beverages or energy drinks)<sup>(19)</sup>.

Evaluations of self-regulatory regimes have shown these to be insufficient to reduce children's exposure to this advertising<sup>(20–22)</sup>, with common issues being insufficiently comprehensive codes and guidelines (e.g. Norway<sup>(23–25)</sup>), and low compliance (e.g. Spain<sup>(26)</sup>, Canada<sup>(27)</sup>). The case for implementing mandatory regulations restricting the marketing of unhealthy foods and beverages to children is thus increasingly strong. In 2020, nineteen countries had some form of mandatory broadcast or non-broadcast marketing restrictions (and another had mandatory restrictions of marketing in schools), though these had varying degrees of strength and coverage<sup>(19)</sup>. Overall, however, countries have found it difficult to move beyond voluntary restrictions and to adopt more comprehensive regulations. Key challenges include concerns about economic impacts<sup>(28)</sup>, and concerns about the potential for formal constraints in the form of costly legal challenges from international trade and/or investment agreements (TIA)<sup>(29–31)</sup>. In particular, the use of TIA to challenge other forms of nutrition policy, such as mandatory interpretive labelling, suggest a need for investigation into whether such agreements may constrain governments' 'policy space' to regulate food environments through mandatory marketing restrictions. Policy space refers to the 'freedom, scope, and mechanisms that governments have to choose, design, and implement public policies to fulfil their aims'<sup>(32)</sup>.

For example, Chile's regulatory marketing restrictions are the world's strictest and most comprehensive to date,

in its Law No. 20.606 on the Nutritional Composition of Food and its Advertising (amended to Law No. 20.869 on Food Advertising), which prohibits any advertising or marketing of foods 'high in' sugar, sodium, saturated fat, or caloric value to children and adolescents under 14<sup>(33)</sup>. Decree No. 13 of this law specifies that advertising is considered to be aimed at children under the age of 14:

If it uses, among other elements, children's characters and figures, animations, cartoons, toys, children's music, or if it includes the presence of people or animals that attract the interest of children under 14 years old or if it contains statements or fantastic arguments about the product or its effects, children's voices, language or expressions of children, or situations that represent their daily lives, such as school, playground or children's games. (33 Decree No. 13)

Trans-national food corporations including Canozzi, Kelloggs and PepsiCo have filed domestic court claims in Chile challenging Decree No. 13 on the basis of alleged breaches to their trademark protections, though none have been ultimately successful<sup>(34)</sup>. While no challenges have been raised against Chile's mandatory marketing restrictions in international trade or investment dispute forums to date, studies have explored the potential for trade-related arguments being raised under the World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)<sup>(35–37)</sup> and the Agreement on Technical Barriers to Trade<sup>(36–38)</sup> under the interpretation of marketing restrictions as technical regulations, which must not create 'unnecessary' technical barriers to the free movement of food products across borders. Another analysis asserted that, as a US company investing in Chile, trans-nationals like PepsiCo could also pursue a challenge to protect their brand investments under Chapter 10 of the Chile-US Free Trade Agreement<sup>(39)</sup>.

Legal scholars have discussed the theoretical trade and investment implications of food marketing restrictions to varying degrees of detail<sup>(40–45)</sup>. However, these analyses do not elucidate the specific implications for public health nutrition policy design, and there is little written on this topic in public health journals. Emerging research from civil society as well as a recent academic review identified the interaction of policy design settings with certain international trade and investment rules as a key factor resulting in the constraint or preservation of governments' policy space for food environment regulations such as marketing restrictions<sup>(29,38)</sup>. A more detailed understanding of the specific interactions of TIA commitments with mandatory marketing restrictions is needed in order to guide the development of robust regulations that will avoid or withstand challenges on the basis of TIA.

## Methods

Our objective was to harness inter-disciplinary expert knowledge to identify aspects of TIA which could impinge upon policy space for mandatory marketing restrictions. To

do this, we explored the relationship between marketing regulation policy design and TIA-related policy space through a series of qualitative vignette interviews with experts in the field of international economic policy and marketing regulations.

Because of the multisectoral nature of food and nutrition policy (where policy space spreads across multiple sectors and multiple actors within sectors), it is essential to consider food marketing restrictions from a political economy lens<sup>(46,47)</sup>. We therefore applied a political economy perspective<sup>(48)</sup>, to examine the mechanisms (political and technical) through which international trade and investment commitments could encroach on policy space for restrictions on food and beverage marketing to children. We performed a policy analysis<sup>(49)</sup>, informed by an approach focusing on the contexts, agenda-setting circumstances and policy characteristics that affect policy space and policy change<sup>(46,50,51)</sup>. We drew on Fidler *et al.*'s conception of potential constrictions to public health policy space posed by TIA: substantive constriction, procedural constriction, and structural constriction<sup>(52)</sup>. In terms of policy design characteristics, we apply Hall's policy 'settings' (the selectable 'order' within a given 'policy instrument'<sup>(53)</sup>). Our underlying philosophical framework was critical realism, characterised by a realist ontology wherein causal mechanisms are both visible/empirical and intangible, and knowledge or understanding of these is constructed and fallible<sup>(54)</sup>.

### Study design

Three over-arching research questions guided the current study:

What are the specific trade- and investment-related constraints governments may face when considering the policy avenue of restricting marketing promotions of unhealthy food and beverages to children?

What are the specific policy design settings of importance for marketing restriction policy space?

How might contextual factors, including actors, institutions and networks, affect the mechanisms of TIA influence on policy space for marketing restrictions?

We followed an adapted 'scenario analysis' methodology, which explores implications of plausible alternative futures 'in a creative, rigorous and policy-relevant manner' that reflects a normative dimension and incorporates different perspectives<sup>(55)</sup>. To do this, we designed in-depth interviews structured by a series of qualitative 'vignettes,' *i.e.* 'short stories about individuals, situations and structures,' set out in a series of variations that unfold in stages, based on changing key variables<sup>(56)</sup>. In light of our focus on the contexts, agenda-setting circumstances and policy characteristics that affect policy space and policy change, we designed these vignette scenarios to explore the potential consequences—in terms of perceived conflict with TIA and related constraint to policy space—of changing various marketing restriction policy design 'settings' within a specified policy context.

**Table 1** Interview participant characteristics

Total number of participants (n) = 9		
Primary region	Field(s) of expertise*	Sector(s)*
Australasia (4)	Trade law (7)	Academia (8)
Latin America (2)	Investment law (4)	Legal (7)
Europe (2)	Nutrition policy (3)	Government (8)
North America (1)		Civil society (4)

\*There was overlap between participants in terms of their fields of expertise and sectors in which they were involved. For example, most (8/9) had acted in an advisory capacity to governments in trade negotiations and, in some cases, trade or investment disputes.

### Data collection

We conducted nine interviews with international expert informants who had expertise and experience in the restriction of marketing unhealthy food and beverages to children and international trade and/or investment agreements (Table 1). These we identified and recruited purposively based on our knowledge of the experts in the field and authorship of key literature, as the global pool of expertise in this specific area is very small. Those we approached were primarily academics, legal professionals, government nutrition policy specialists and civil society actors, and we reached additional participants by snowballing. We did not recruit industry actors affected by policy decisions in marketing, as we expected there to be a potential commercial conflict of interest for these stakeholders. The participants in the current study were anonymised with the labels P1–P9.

The three authors developed the policy scenario vignettes collaboratively and with input from a trade and investment legal expert advisor, based on our knowledge of best practice recommendations in marketing restriction and policy settings that had been previously identified as having potential interactions with TIA<sup>(29)</sup>. These stepped qualitatively from a minimally burdensome and generally non-controversial baseline (a mandatory restriction of persuasive techniques to advertise unhealthy food/beverages to children through television advertising during children's programs), to a 'comprehensive' policy that more closely resembles best practice from a population health perspective but was also expected to be more politically difficult to achieve (Table 2). The final scenario was designed to test whether policy informed by international evidence rather than local data (and therefore less burdensome for government regulators) would encounter any difference in legal risk.

KG conducted all interviews and asked the same Guiding Questions after each change to the vignette/scenario:

*Which, if any, TIA and associated chapters and articles would apply?*

*Are there any potential challenges of conflict with respect to TIA?*

*Are there any potential supportive factors that could increase the policy space?*

**Table 2** Policy settings applied in scenario design

Scenario	Policy settings (and changes proposed)
0-0 Baseline scenario	Mandatory ban of persuasive marketing techniques in television advertising during children's programming (defined as children under 12)
1-0 Type of content restricted	From restricting <i>persuasive</i> techniques only, to restricting <i>all</i> unhealthy food and beverage advertising (on television, during programming for children under 12)
2-0 Time of day restricted	From restriction during designated children's programming, to covering all of children's (under 12) peak viewing times
3-0 Target audience	Broadening the age of children to be protected: from children under 12 to under 18
4-0 Medium	4-1 From broadcast (television, radio) advertising, to include non-broadcast media 4-2 Scope: from restricting advertising, to including <i>all forms</i> of product marketing (such as in-store promotion, on- or in-product hooks, and school-based strategies)
5-0 Targeted commodity	From restricting advertising and marketing of <i>products</i> , to include restricting <i>brand</i> marketing (for instance, based on the nutrient profile of the brand's top 10 selling products)
6-0 Evidence base	From having 'rigorous' domestically produced data, to reliance on international evidence (e.g. in resource-poor settings)

*What would need to change in order to reduce the likelihood of policy space constriction?*

### Data analysis

Interviews were transcribed verbatim by KG and member-checked by participants, after which KG carried out the analysis of responses in NVivo<sup>TM</sup>(57). We applied a 'retroductive' approach to coding, i.e. an iterative process moving between induction and deduction, consistent with a critical realist analysis<sup>(54,58)</sup>. We began by establishing a set of *a priori* codes based on our study frameworks, including categories of policy content, policy process, policy context (including actors and institutions involved) and policy space outcomes (in terms of potential substantive, procedural and/or structural constraint). During analysis, we expanded upon these categories through iterative reading of the data, developing additional reactive codes to add to our evolving conceptual framework.

### Results

#### Trade and/or investment agreements interactions with policy scenarios

The principal relevant WTO agreements identified by participants included: the General Agreement on Trade in Services (GATS), General Agreement on Tariffs and Trade (GATT), TBT and TRIPS. Participants also identified international investment agreements (IIA), and regional free trade and investment agreements (FTIA) including the NZ-Australia Closer Economic Relations (CER) Agreement, the proposed Trans-Pacific Partnership (TPP) Agreement and its replacement, the Comprehensive and Progressive Agreement on Trans-Pacific Partnership (CPTPP) and customs unions such as the European Community (EC), as being theoretically relevant to the restriction of marketing unhealthy foods to children (Table 3).

Overall, participants tended to assign low risk of TIA-related legal issues to the early scenarios with regard to these agreements (Table 4). Changes to the time of day (peak

hours/watershed restrictions) and target age (to children being under 18) were deemed important under GATS as these proposed scenarios were interpreted to approach the equivalent of quantitative restrictions prohibited under market access rules. Increased risk of conflict or incompatibility with WTO agreements began to appear when scenarios proposed: broadening restrictions to include all unhealthy food/beverage advertising in broadcast and non-broadcast media (scenario 4.1), consideration of all forms of product marketing (*v.* advertising only) (scenario 4.2) and inclusion of brand advertising and sponsorship in the restrictions (scenario 5.0). There was more uncertainty regarding risk, which arose at an earlier stage, when considering other ('WTO-plus') FTIA and customs unions, because of the potential variations in text (which tend towards tighter restrictions on policy). Responses indicated minimal risk of conflict with IIA, until the proposed policy scenario began to affect brands (scenario 5.0).

Disagreement between participants was based not on the nature of risk, but in the level of risk, or potential for it to actually happen (between realistic and theoretical risk). Rather, there are many 'grey areas' where policy space may depend upon specific factors related to policy design, context, and variations in the trade rules and commitments across agreements (see online supplementary material, Supplemental Table SX). These are the areas that commercial stakeholders are likely to exploit, by advancing self-serving interpretations of the legal provisions.

#### Key trade and investment rules and principles

*What are the specific direct and indirect trade- and investment-related constraints governments may face when considering the policy avenue of imposing regulation restricting marketing promotions of unhealthy food and beverages to children?*

Participants mentioned a wide range of TIA with potential relevance, but their discussion consistently centred on similar principles common to most TIA: non-discrimination, necessity and justification with scientific evidence, market access requirements and quantitative restrictions, intellectual



**Table 3** General interaction of marketing restriction policy with trade and/or investment agreements

Type of trade and/or investment agreement	Relationship with the restriction of marketing and advertising of unhealthy food and beverages to children, as perceived by expert informants
International investment agreements (IIA), including bilateral investment treaties (BITs), and investment chapters of TIA	IIA specifically cover investments and investor protections. These could theoretically be invoked if an imposed regulation implies mistreatment of an investor (fair and equitable treatment), or a significant devaluation (indirect expropriation) of an investment. Brand advertising in particular relates to investments in trademarks. While literature on IIA and nutrition policy space is sparse, certain scholars have expressed concern that marketing restrictions implying <i>any</i> devaluation of an investor's investments (i.e. through decreased sales) could be argued to amount to indirect expropriation <sup>(31,59–61)</sup> , though participants were sceptical of the likelihood of an actual challenge (P4, P5, P6, P7, P8, P9)
General Agreement on Trade in Services (GATS)	The GATS pertains to trade in services – including audiovisual services (e.g. TV advertising), computer services (e.g. Google) and food retail or restaurant services. Different countries have made different commitments with respect to their service sectors and for modes of service supply within those (i.e. for cross-border supply, consumption abroad, commercial presence, and/or presence of natural persons) in relation to rules on market access and national treatment. The GATS may therefore come into play in cases where a country has made specific commitments, regarding market access for example, in advertising services.(P1, P5, P7, P8) While difficult to determine the exact number of countries that have scheduled commitments for advertising due to overlapping classifications of relevant sectors and subsectors, one participant estimated the number at about 70,(P7) and another at 60. (P5) The GATS rules relating to domestic regulations (including the obligation of a Necessity test) are currently the subject of ongoing negotiations.
General Agreement on Tariffs and Trade (GATT)	The GATT covers trade in goods, and thus comes into play if marketing restriction regulations will have an effect on trade in goods (i.e. on the producers of the products whose advertising or marketing will be restricted), with the relevant rules being non-discrimination ('national treatment' and 'most favoured nation'), and quantitative restrictions. (P1, P2, P7, P9)
Agreement on Technical Barriers to Trade (WTO TBT)	The WTO TBT Agreement pertains to technical regulations relating to goods, including product formulation and labelling, and therefore comes into play due to the technical regulations underpinning restrictions on marketing. Its emphasis is on requiring that such technical regulations do not present 'unnecessary' barriers to trade.(P1, P7, P9)
Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)	The TRIPS Agreement covers intellectual property rights, including trademarks such as logos and licensed characters or images, and would therefore be relevant if the marketing restrictions target any of these elements.(P1, P3, P5, P7, P8, P9)
Non-WTO Free trade and investment agreements (FTIA)	Other FTIA (e.g. the CER, TPP/CPTPP) cover the same types of chapters as the WTO agreements, but tend to include tighter restrictions, i.e. 'WTO-plus' e.g. TRIPS-plus, TBT-plus. They may also include additional chapters of potential relevance to restrictions on marketing unhealthy products to children, such as: Regulatory coherence, Transparency, eCommerce*, and Cross-border Services.(P1, P5, P7, P8, P9)
Customs Unions	Customs Unions, such as the European Communities (EC), may have their own specific internal rules and restrictions on policy that could limit the range and scope of policy options for restricting marketing of unhealthy food and beverages to children, for example commitments to free movement of goods and services across borders.(P1)

\*Electronic commerce and digital trade agreement rules have been gaining prominence, with potentially serious implications for policy space to regulate marketing in the digital age<sup>(62)</sup>. However, their discussion was outside the scope of the current study.

property rights and trademark protections and fair and equitable treatment of investors (Table 5)

### **Key policy design settings**

Participant responses indicated that two main policy design factors that interact heavily with TIA-related policy space are the framing of objectives and regulatory distinctions drawn (i.e. the specified definitions, in particular those

pertaining to which products are affected by the regulation, and which are not).

### *Framing of objectives*

Framing of policy objectives is important in terms of showing necessity under the WTO Technical Barriers to Trade, justifiability under TRIPS, cause for General Exceptions under GATT and GATS, commitments to necessity or 'proportionality' common in many regional FTIA or

**Table 4** Visualisation of perceived risk of policy space constraint for each scenario, under different agreements, and rubric for spectrum of risk (below)

Agreement Scenario	IAs	GATS	GATT	TBT	TRIPS	Other FTIA	Customs Unions
0.0 Baseline broadcast TV							
1.0 All content							
2.0 Time of day							
3.0 Target audience/age							
4.1 Non-broadcast							
4.2 All marketing							
5.0 Brands							
6.0 Evidence base							

Legend: Rows represent each discrete policy scenario from the vignettes. Columns represent the various potentially relevant TIAs. Cell shades denote where a specific scenario lies within the spectrum of risk of conflict/incoherence with TIAs and potential policy space constraint.

Note: Cells are shaded by a pooled level of risk/certainty, taking into account the quality/credibility of responses (the result of a qualitative assessment weighing factors such as participants' specific area of expertise, their level of experience as opposed to theoretical knowledge, and the degree of agreement between participants). Note that while certain constraint (represented by black cells in the table) was considered a possibility, the results suggest that in fact there seems to be no policy scenario here that is legally impossible due to substantive constraints.

→ Risk of conflict between marketing restriction and TIAs →							
None	Non-realistic	OK but requires justification	Requires more justification	Unpredictable - can it be justified?	Possible threats	Realistic threats	Certain substantive constraint

Key (from left to right): No TIA argument against the policy; TIA arguments hypothetical-only, but not realistic; policy should be compatible but requires justification; policy should be compatible but greater evidence burden; unpredictability (e.g. related to the specifics of commitments already made, or ability to collect the necessary evidence); possible risk or threat to policy space posed by TIA; realistic risk or threat to policy space posed by TIA; policy that will be high-risk based on certain TIA (substantive) constraints.

non-arbitrariness (an aspect of FET) under IIA. Participants emphasised the importance of demonstrating the intervention's link to the objective in the chain of causality for the health issue in question. The further the intervention is from the objective, along that chain, the harder it will be to establish the link due to the many external factors and forces that intervene along the way. For instance, if the desired end result is a reduction in prevalence of childhood obesity,

First of all you need to reduce exposure/power of marketing, then it needs to have some effect on either the purchase intention of children or the people who purchase foods for them, then that change in intention needs to translate to change in consumption, which needs to result in a healthier diet (for example fewer calories consumed, or less sugar, or whatever it is), and that healthier diet then needs to result in reduced prevalence of obesity. (P1)

Framing the regulatory objective in reference to more intermediate objectives would reduce this evidentiary burden.

Participants also indicated that a focus on protecting children in marketing restrictions (as opposed to restricting marketing to the public in general) may be more politically feasible (in terms of ethical arguments and political will), but must be matched with appropriate policy actions. A participant recounted that in Chile, for example, restriction of child-appealing advertising at bus stops, in parks and elsewhere other than in and around schools was not approved because this would be targeted to the general public as well – and therefore did not fit their definition of 'child-directed,' (P2) highlighting one of the pitfalls of framing legislation around 'child-directed' or 'child-targeted' marketing rather than on power and exposure of children.

We expected that a rights-based approach might differ from one based on public health nutrition objectives. The United Nations Convention on the Rights of the Child (UNCRC), for example, includes commitments to protect children from information and material injurious to their well-being, including 'misleading' advertising. This treaty also recognises children as being 'up to the age of

**Table 5** Technical TIA considerations for marketing restrictions identified by interview participants

TIA principle	Specific to which TIA	Summary of key issues
Non-discrimination	<p>The principle of non-discrimination includes:</p> <ul style="list-style-type: none"> <li>• 'National Treatment' – no discriminatory treatment of like products sourced outside the country with respect to those sourced domestically, and</li> <li>• 'Most Favoured Nation' – not specific to country of origin but which could involve a comparison between 'like' products receiving differential treatment, and is common to all TIA in some form.</li> </ul>	<p>The scenarios presented were framed as non-discriminatory (e.g. with the text "applying to all individual food and beverage items (regardless of source)", and participants' responses were largely based on the assumption or interpretation that they were not discriminatory.</p> <p>However, a more critical reading or extrapolation of the policy scenarios might find potential for discrimination <i>in effect</i>, based on how regulatory distinctions are made: between products that can be marketed and those that cannot (via nutrient profile models and thresholds chosen), in the age group considered children whom marketing cannot target, and the definition of marketing that 'targets children.' Such analysis might examine whether there is a greater burden on certain products, and whether that has anything to do with their origin.(P9)</p>
Necessity, justification and evidence requirements	<ul style="list-style-type: none"> <li>• GATT Art. XX(b) (General exception may be awarded if a measure is necessary to protect human health),</li> <li>• TBT Articles 2.2 and 2.5 (that measures should not be more trade-restrictive than necessary),</li> <li>• Articles 2.2 and 5.6 of the SPS (that measures should be applied only to the extent necessary to protect human health, and supported by scientific evidence),</li> <li>• TRIPS Art. 20 (that the use of trademarks should not be unjustifiably encumbered), and</li> <li>• GATS (as an element of its General Exceptions)</li> </ul>	<p>Adherence to these principles is implicitly assumed to be part of good regulatory practice, but this raised the question of how evidence requirements may present an 'unnecessary' or 'overly burdensome' barrier to public health policy, and the power and politics of evidence production and interpretation.</p> <p>Generating justifying evidence entails a financial, time and human resource cost. In some cases, <i>acquiring an evidence base becomes a way to postpone the actual legislation. And trade agreements kind of play a part in that articulation, in terms of providing a context where governments are required to have the evidence base.</i> (P8)</p> <p>Moreover, commercial stakeholders in this space can skew the evidence with biased studies, increasing the burden on governments' public health research to outweigh it (P5, P1): <i>if you look at the standard as laid out in case law, you don't actually need that much [evidence]. . . . But the reality of the situation is that the strength of the evidence you need depends on a variable you can't control, and that's the evidence brought against you in the context and challenge.</i> (P1)</p>
Market access and quantitative restrictions	<ul style="list-style-type: none"> <li>• GATT Art. 11.1 (prohibiting quantitative import and export restrictions against WTO Members),</li> <li>• GATS Art. 16 (no limitations on service supply, in sectors where market-access commitments are undertaken)</li> </ul>	<p>Marketing restriction is particularly contentious when it involves a <i>de facto</i> ban of products whose inherent qualities are the target of regulation – for instance, a product that contains free gifts or toys directed at children. Participants believed arguments could be made: that this constitutes a quantitative restriction contrary to GATT Art 11.1 (basically a ban on importation) (P1); or that it could be considered a measure affecting the supply of a service under GATS as a quantitative restriction in breach of the market access rule.(P5)</p> <p>Interpretation under GATT may rely on the General exception XX(b) for measures necessary to protect public health, entailing a necessity test. Under GATS, it will depend upon specific commitments made by countries in their schedule of included service sectors. If specific commitments have been made not to regulate the relevant service sectors, the regulation will need to rely on the GATS General exceptions, also implying a necessity test.(P5)</p>
Intellectual property rights and trademark protections	<ul style="list-style-type: none"> <li>• TRIPS Art. 16 (protection of registered trademarks, prohibiting their use by other parties),</li> <li>• TRIPS Art. 20 (the use of trademarks should not be unjustifiably encumbered),</li> <li>• Intellectual Property chapters in FTIA (TRIPS+ provisions)</li> </ul>	<p>In regulations banning all forms of marketing of unhealthy products, including brand/company advertising or sponsorship, the use of protected trademarks (such as brand images and logos) is restricted. This might affect, for example, branded books, sponsorship of events/venues/teams and sports heroes, cross-branding of logos on household goods, branded toys such as those designed for fast food stores, or branded computer games.</p>



Table 5 Continued

TIA principle	Specific to which TIA	Summary of key issues
Fair and equitable treatment (FET)	• IIA (including BIT and investment chapters in FTIA)	<p>There was strong consensus (4/4 of the experts who discussed this scenario with respect to TRIPS) in interpretations that TRIPS Art. 16 conferring the right to protected trademarks (a negative right prohibiting use by other parties) does not mean the right to its use (a positive right). However, TRIPS Art. 20 requires that the use of trademarks should not be <i>unjustifiably</i> encumbered by special requirements. Again, the interpretation of justifiability lies in some kind of necessity test, and the only comparable global example to date was the decision in Australia—Tobacco Plain Packaging.</p> <p>FET investor protection relates to their ‘legitimate expectations’ of the regulatory environment and could theoretically be invoked if an imposed regulation implies mistreatment of an investor. Definitions of fair and equitable treatment are notoriously vague and interpretations unpredictable. Most participants agreed this would imply not following due process, and/or <i>egregious error on behalf of government</i> (P7); for example, a total lack of consultation, arbitrariness, or breach of specific promises made not to regulate a particular sector such as advertising.(P4, P6, P7, P9)</p> <p>The two interviewed international investment experts also asserted that, as long as there was no discrimination (and they did not think the scenarios implied any), FET should not be a <i>realistic</i> concern, until the regulation begins to target brands (trademarks).(P4, P6) Participants expected the marketing restriction scenario including brand advertising was still very unlikely to raise an investment issue, but may begin to open arguments around whether this goes beyond legitimate expectations of the regulatory environment. (P7) It was suggested that clear evidence-based categories and some consultation would be supportive in mitigating this risk.(P6)</p>

18.’ One legal expert participant acknowledged that pointing to commitments in an international human rights treaty such as the UNCRC, which is a separate/external treaty to those created under the WTO or regional or bilateral TIA, can help in establishing the legitimacy of a regulatory objective.(P7) How these separate treaties would interact in a trade or investment dispute is thus far untested. Nevertheless, in terms of the framing of objectives, if a policy is designed to fulfil a protected right, then the evidence needed to prove its effectiveness in achieving that right might not necessarily be health outcome-related. For instance, the objective could be a reduction in exposure to harmful commercial practices.

*Regulatory distinctions*

A common response was that, first and foremost, a policy restricting marketing of unhealthy food and beverages to children must be non-discriminatory between ‘like’ products in intent and in effect. A main challenge in policy design therefore lies in the definitions for regulatory distinctions (e.g. what is ‘persuasive,’ what is ‘targeting children’ or which products and brands are ‘unhealthy’). In other words, where do we draw the line between what is allowed

to be marketed and what is not? To avoid challenges and delays, public health nutrition policymakers have to be very clear on these definitions from the beginning (which, as one expert involved in policy design pointed out, is often more difficult than it seems).(P3) They identified the definition of ‘child-appealing hooks’ as an area where further research is needed, as these are very challenging to define in terms of design elements – like shapes, colours and sound. This expert explained, *‘I think we just don’t know how to do it yet. That is part of the ambiguity of advertising: that we cannot describe it, however it’s clearly affecting the children, just in the way their brain is developed, and how they are very appealed-to by all these cues.’*(P3) Studies have shown that even the nutrient profiling models used to distinguish ‘unhealthy’ or ‘high in’ products that should not be marketed to children can be contentious (in informal forums of debate, though notably never in a formal dispute), despite the WHO and its regional offices having established certain standards and definitions<sup>(63–65)</sup>.

Because of the difficulties inherent to drawing regulatory distinctions, two participants speculated that *comprehensive* marketing restrictions (i.e. the later scenarios covering all forms of marketing of unhealthy food and beverages to



**Table 6** Domestic regulatory context factors influencing policy space for marketing restrictions

Regulatory context factor	Description
Domestic legal framework (such as a Constitution)	<p>May provide supportive or constrictive normative foundations for advertising restrictions, e.g.:</p> <ul style="list-style-type: none"> <li>• recognition of a right to health that overrides commercial rights (P3)</li> <li>• domestic age of majority, or other regulatory distinctions pertaining to a child's age (P2, P3, P7)</li> <li>• domestic rights frameworks pertaining to commercial speech (typically less freedom than individual freedom of speech) (P7)</li> <li>• domestic laws may protect intellectual property in a way that constrains policy space for advertising restrictions (P7)</li> </ul> <p>These may relate, for example, to the arbitrary/non-arbitrariness of regulatory design in terms of FET.</p>
Economy's import/export profile (for food and beverages)	<p>Relevance for trade relates to how much the domestic economy relies on domestic products or international products (or services). Even if regulating trans-national companies, whether products are manufactured abroad or domestically intersects with any resulting impacts on the flow in goods (e.g. goods that contain restricted advertising).(P1, P9) Enforcement of marketing restrictions is also much simpler if the products and services are primarily domestic.(P4) In the EC, for example, regulation of cross-border marketing is only enforceable for domestic firms.(P1)</p>
State of evidence available	<p>The state of evidence available to regulators may directly support TIA-related policy space in terms of meeting necessity/justification requirements. Any industry-generated counter-evidence meant to 'muddy the waters' and sway interpretation of necessity/justification may constrain policy space.(P5, P7)</p>

children under 18, in all media) might have greater leeway in terms of non-discrimination, non-arbitrariness and FET.(P1, P7) On the other hand, broad marketing restrictions might entail more difficulty to prove necessity in proportionality to the objective.(P5) and may be less politically viable.

### **Contextual factors**

Previous studies have established that contextual factors can have a moderating effect on the mechanisms through which TIA constrain policy space for restricting marketing of unhealthy food and beverages to children<sup>(29)</sup>. Our findings suggest that domestic political/regulatory contexts, as well as actors/institutions involved at both domestic and international spheres, may constitute relevant contextual factors in this policy space.

#### *Regulatory context*

Analysis of interview data indicated three key factors relating to domestic regulatory contexts that influenced the potential for TIA to constrain policy space for marketing restrictions: domestic legal frameworks, the economy's reliance on imported food and beverages and the state of available evidence (Table 6).

The analysis of available policy space for regulatory marketing restrictions in any given country would therefore require context-specific legal analysis.

#### *Actors and institutions*

The actors and institutions active in the debates surrounding regulatory proposal, design and implementation appeared to influence policy space outcomes. Responses indicated that commercial stakeholders will be quick to raise concerns that marketing restrictions may violate existing TIA (specifically, in the 'grey areas' identified in Table 4). In the absence of voices knowledgeable about

the detailed interpretative implications of trade and investment provisions, this could amount to regulatory chill. Several participants mentioned that a domestic Ministry of Business/Industry/Economy would be another initial opposing force to any regulation of marketing – with concerns around potential trade restrictiveness, investment agreements or even enforcement – through processes for internal regulatory vetting, including Regulatory Impact Assessments.(P3, P5, P8) Commercial stakeholders will usually have direct access to such government bodies to voice their concerns, potentially creating strong internal/domestic opposition to a marketing/advertising restriction policy. As evidenced in the scenarios, the more comprehensive the regulation, the more sectors and actors become involved – for example, from cable television providers, to supermarkets (for in-store point-of-sale marketing), to fast food services (in-product hooks and brands) and so on – and the greater their incentives become to oppose regulation. The strength of their influence will depend on how much power they represent within the domestic economy. The distribution of power (resources) and incentives was consistently mentioned as a key factor with respect to whether concerns or challenges are actually raised in trade or investment forums.

### **Discussion**

#### ***Where and why do constraints arise and what can be done to mitigate risk?***

Our findings suggest that governments interested in pursuing basic regulatory restrictions of marketing and advertising of unhealthy food and beverages to children, but wary of the potential repercussions in trade and investment forums, may proceed with reasonable confidence that well-designed



(evidence-informed, non-discriminatory/non-arbitrary) marketing restriction regulations are unlikely to encounter any substantive constraints on the grounds of TIA, but would benefit from legal expertise. With the caveat that this in no way presents a legal analysis, our study suggests several features of strategic policy design within the health sector with potential to render regulations more robust and defensible against TIA-related challenges.

In terms of non-discrimination, a nutrient profile model can create a transparent and scientific basis to distinguish foods and beverage that cannot be marketed (a WHO-backed model will be the strongest). As for necessity and justification, basic national child overweight/obesity statistics can provide evidence of the need for regulation. Our analysis indicates that international evidence on how the power of and exposure to marketing influences food choices, as well as the international evidence showing ineffectiveness of voluntary codes, should provide sufficient justification for regulatory marketing restriction. Focusing restrictions on persuasive marketing techniques (e.g. featuring cartoons or other images, toys, giveaways) seems to be most easily justifiable but will require definition of persuasive elements (the definition of which will relate to the target age of the restrictions) and may in fact impede the implementation of more comprehensive restrictions that could significantly reduce children's exposure to marketing. Restricting marketing to children under 18 might be justifiable (e.g. based on UNCRC commitments) though commercial stakeholders are likely to oppose, especially if there are other domestic age distinctions in place. Finally, if establishing time of day with restricted broadcast marketing, a watershed cut-off based on peak viewing times, for example between 07.00 to 21.00, appears to be increasingly supported by evidence<sup>(66–69)</sup> and thus should be justifiable with local evidence of children's peak viewing times.

#### *Challenges associated with regulating all forms of product marketing*

In the current study, we explored how a comprehensive regulatory restriction of *all forms* of marketing of unhealthy foods to children expands the service sectors affected and entails greater need for justification of 'necessity.' This greater evidentiary burden for regulating governments may present in itself a 'procedural' constraint to policy space. The greater potential impact on businesses also means greater incentive to fight proposed marketing regulations in any way possible.

Our study indicates that marketing restriction regulation is particularly contentious when it involves what might be interpreted as a *de facto* ban of products whose inherent qualities are the target of regulation. Prime examples of this are the Ferrero 'Kinder Surprise' chocolate egg that contains a toy and the MacDonald's 'Happy Meal' targeted to children that usually includes free gifts or toys, which were among the products affected by marketing restrictions in

Chile. Ferrero has argued that the toys inside 'Kinder Surprise' (as they are called in Chile) are 'an essential and integral part of the product, which constitutes a single unit (. . .) The surprise is the essence itself of the chocolate egg, and in no case can be considered a hook for its consumption<sup>(70)</sup>.' The company has stated it 'reserves the right to activate national and international institutions to obtain a legal solution to this situation, which affects the reputation of one of its most popular and better-quality products<sup>(70)</sup>.'

Interestingly, Chile is not the only country to have banned 'Kinder Surprise.' The chocolate eggs have also been illegal in the USA because of a Department of Agriculture ban on importing food products with small parts due to choking hazard, and this US import restriction was never met with a trade dispute. And despite the threatening rhetoric, companies in Chile are adapting. By July 2016, Burger King had reportedly withdrawn all existing advertisements concerning children's toys in Chile, ended all advertising to children under 14 and had ceased to deliver toys in all of their Chilean restaurants<sup>(36)</sup>. MacDonald's opted instead to reformulate the products contained in its 'Happy Meal' to continue to offer toys with it<sup>(36)</sup>, resulting in healthier offerings in this children's meal package.<sup>(P3)</sup>

Though it reportedly took 14 years (10 years of discussion, 4 to implement)<sup>(71)</sup>, this type of regulation covering all types of marketing in all media has been accomplished successfully in Chile. Corvalán et al. note that certain global regulatory developments that have taken place since (for example, the Pan American Health Organization's nutrient profile model launched in 2015, which goes beyond Chile's model to include non-caloric sweeteners, and action taken by other countries to restrict marketing of unhealthy foods to children) have further paved the way for governments wishing to implement such comprehensive regulatory child-directed marketing restrictions<sup>(71)</sup>.

#### *Challenges associated with restricting brand marketing*

The current study also explored some of the challenges in regulating food and beverage brand advertising, which appears to face the most potential TIA-related constraints to policy space with respect to intellectual property and trademark protections under the TRIPS Agreement, as well as FTIA (with TRIPS+ commitments) and IIA (Table 4). This is an important area of marketing regulation because the reach and appeal of unhealthy food and beverage brand advertising to children is strong. Children's brand exposure at a young age means that brand recognition, preference and brand loyalty are developed early on<sup>(6)</sup>. Brands are known to advertise on social media platforms, such as Facebook, in ways that seek to engage adolescents *and children*<sup>(72)</sup>. Tellingly, Australian children were found more likely to associate positive feelings (e.g. 'cool, exciting, fun') and personality traits (e.g. 'popular, outgoing') with unhealthy food brands, in a study that showed children's alignment of brand characteristics with their own



personality<sup>(72)</sup>. And in the USA, pre-schoolers' food brand recognition significantly predicted higher BMI in these children<sup>(73)</sup>. The power of brand advertising extends to low- and middle-income countries, where trans-national food and beverage logo recognition consistently and significantly related to preference for international products, like McDonald's hamburgers and Coca Cola soft drinks, over domestic and local food and beverage options in a sample of children in Brazil, China, Nigeria, Pakistan and Russia<sup>(74)</sup>.

Our interview scenario also proposed regulating brand sponsorship, of sports events, for example, as there is strong evidence that 'sports sponsorships with food and beverage companies often promote energy-dense, nutrient-poor products and while many of these promotions do not explicitly target youth, sports-related marketing affects food perceptions and preferences among youth<sup>(75)</sup>.' Athlete endorsements and food advertisements/product placement in sport video games are other areas of concern<sup>(75)</sup>.

Participants expected there to be some challenges in this policy scenario relating to corporate trademark rights under TRIPS, and more importantly, IIA in relation to interpretations of FET and indirect expropriation. In-depth legal analyses would need to be carried out to assess the 'legally available' policy space for such a regulation in a given context. The existing Chilean regulation is the only comprehensive example to date, though it is limited in the area of restricting brand marketing – only going so far as restricting the use of strategies and imagery appealing to children: *for example, [a registered brand character] can be present, but cannot be doing any kind of physical activity, e.g. running or jumping or smiling or whatever.* (P2) And despite international evidence that major sports and cultural events have high overall numbers of youth viewership<sup>(76)</sup>, the Chilean regulation was not able to regulate advertising at such events<sup>(71)</sup>. Nor could it regulate brand marketing activities linked to corporate social responsibility programmes. (P3)

The distinction of *which* brand advertising would not be allowed was a sticking point for participants. The Chilean marketing restriction regulation is interesting as it uses an exposure test and a power test to determine whether the marketing appeals to children<sup>(71)</sup>. We contend that, similarly, a 3-part test could be used to determine when brand advertising should be restricted: (1) is the brand/logo reasonably linked to unhealthy food or beverages? If yes, (2) is there expected exposure of children to this brand/logo *or* (3) does its representation have 'power' to attract children?

#### *The case for bold policy making*

Comprehensive marketing restrictions have the potential to shift cultural norms and preferences for food and beverages over time. For example, limited tobacco advertising bans first came about in the United States beginning in 1970, with little or no effect due to substitution of advertising to the remaining non-banned media<sup>(77)</sup>. The Framework Convention on Tobacco Control now mandates comprehensive tobacco

marketing bans (including point-of-sale promotion and display), and today some countries have, in effect, a 'dark market', significantly de-normalising tobacco use over the span of a generation<sup>(78)</sup>. Global marketing (facilitated by TIA) is one of the major drivers of global food and beverage consumption (alongside trade liberalisation and foreign direct investment)<sup>(79)</sup>. As such, restricting all forms of marketing of unhealthy food and beverages to children has the potential to create generational change in dietary preferences and norms, significantly constraining the ability of unhealthy food and beverage companies to sell their products to that demographic, and to shape their future preferences.

However, the challenge of setting regulatory distinctions means that policies may be overly vague, creating opportunities for commercial stakeholders to push back. Norway was one of the first countries to implement the WHO Set of Recommendations on the marketing of foods and non-alcoholic beverages to children, proposing regulation banning all marketing of unhealthy food and beverages 'directed at' children below 18 years in 2012<sup>(17)</sup>. Accounts indicate that the initial regulation was vulnerable to attack by the food and beverage industry as it was 'unduly broad' (e.g. children were defined as being below 18 years of age), policy design left many 'unanswered questions' that opened the door to legal challenge and that non-compliance with European Economic Area Law was also a major critique<sup>(23)</sup>. Industry stakeholders claimed that the regulation created too much uncertainty over what kind of marketing would be legal<sup>(24)</sup>. Following such industry criticism, this became a self-regulatory regime administered by a Complaint Commission of the Food Industry, agreeing not to place marketing pressure on children below 13 years<sup>(24)</sup>, which has demonstrated questionable effectiveness in deciding which cases had breached the code<sup>(25)</sup>.

Chile's Law of Food Labelling and Advertising is the most advanced national marketing restriction currently in place, with early evaluations showing significant reduction in children's and adolescents' exposure to 'high in' product advertising<sup>(80,81)</sup>, as well as a decline in household purchases of, and caloric consumption from 'high-in' beverages<sup>(82)</sup>. A move to stricter 'total ban' advertising (rather than time slot) restrictions and lower nutrient thresholds in 2018 is expected to have eliminated the majority of children's remaining product advertising exposure<sup>(80)</sup>. The industry responses to Chile's measures suggest that, despite opening with threats to pursue challenges in international legal forums, they will toe the line when confronted with comprehensive marketing restriction regulations.

Finally, though Chile's marketing restrictions represent a world-leading example, there are several remaining 'loopholes' precluding optimal protection of children from unhealthy food and beverage marketing<sup>(71)</sup>. This regulation should therefore be considered a baseline standard, but by no means a regulatory 'ceiling.' Governments need to have the policy space to go beyond this example if and when they see fit.

**Implications for research, policy and practice**

The implication of the current analysis, for policymakers, is that the substantive basis for trade-related concerns regarding the development of comprehensive regulatory marketing restrictions appears to be weak, though evidence and strategic policy design are important – especially for broader restrictions and those including brand marketing, which run the highest risk of encountering TIA-related constraints. There is, however, a higher risk of procedural constraints in the form of appeals to necessity/justification and lack of scientific evidence, market access requirements and quantitative restrictions, intellectual property rights and trademark protections and fair and equitable treatment of investors, creating delays and potentially derailment of the policy process.

Our findings highlight the importance of public health nutrition regulators having access to legal expertise with respect to international economic law, to provide an accurate picture of their ‘legally available’ policy space for marketing regulations<sup>(83)</sup>. Especially, as the ‘everyday interpretive practices’ used by corporate stakeholders (including self-serving interpretations of TIA) to shape policy-makers’ perceptions of the legality of these regulations have been shown to be often at odds with the commonly-held interpretations of the (small) WTO legal expert community<sup>(37)</sup>.

Due to participants’ emphasis on evidence requirements and challenges in defining what is to be regulated, the current analysis suggests the benefit of further research into what constitutes marketing targeting children (in terms of exposure and power-of-advertising dimensions) by looking at design elements (e.g. colours, shapes and sounds) more broadly and engagement designs (e.g. through digital media).

**Strengths and limitations**

A benefit of the vignette approach is that it provides many different angles from which to look at the research questions and allows the exploration of a variety of possible policy alternatives. As described by Swart, Raskin and Robinson, normative scenarios ‘represent organized attempts at evaluating the feasibility and consequences of trying to achieve certain desired outcomes or avoid the risks of undesirable ones<sup>(55)</sup>.’ A key limitation of the current study was that there are few global examples of regulatory uptake for reference (essentially, only Chile). In addition, the global marketing and advertising landscape is rapidly changing (e.g. although the ‘old’ platforms are not well dealt with, there are new social media platforms constantly appearing), so it can be difficult to keep up with the implications and interactions with the (also dynamic) trade/investment space. Lastly, our exclusion of expert stakeholders from the food and beverage industry means that we may be missing

additional perspectives, though the interviewed experts were asked how they expected industry stakeholders might respond to each scenario. Nevertheless, this series of interviews goes well beyond the limited literature in this area, adding to collective knowledge on policy space for mandatory restriction of unhealthy food and beverage marketing to children.

**Conclusions**

Our study suggests that regulatory marketing restrictions do run the risk of incurring challenges under WTO agreements and other FTIA. However, participants indicated a low likelihood of substantive legal challenges for most of the policy scenarios presented. Concerned policymakers should be aware of the difference between theoretical risk, threat of a challenge and realistic risk of initiation and/or loss of a formal dispute and design regulations accordingly. We recommend a bold and comprehensive approach to regulating food and beverage marketing environments, as risks can be reduced through strategic policy design. More inter-disciplinary work is needed exploring the intersection between food marketing regulations and international economic policy to address the uncertainties that may contribute to policy inertia.

**Acknowledgements**

*Acknowledgements:* The authors wish to acknowledge the contribution to study design and analysis of responses provided by Jane Kelsey and comments on draft versions provided by Amandine Garde and Fiona Sing. We also wish to thank each of the expert interview participants for contributing their valuable knowledge and perspectives to the current study. *Financial support:* The research was supported by a University of Auckland doctoral scholarship awarded to KG. The preparation of this manuscript was supported by a grant from the University of Auckland’s Performance Based Research Fund. *Conflict of interest:* There are no conflicts of interest. *Authorship:* All three authors collaborated in formulating the research questions and designing the study. KG carried out data collection. KG performed data analysis, with supervision from AMT and BS. KG drafted the manuscript, with BS and AMT providing substantial commentary. *Ethics of human subject participation:* The current study was conducted according to the guidelines laid down in the Declaration of Helsinki, and all procedures involving research study participants were approved by the University of Auckland Human Participants Ethics Committee on 11 December 2017 for three years [reference number 020495]. Written informed consent was obtained from all subjects.





## Supplementary material

For supplementary material accompanying this paper visit <https://doi.org/10.1017/S1368980021001993>

## References

1. Smits T, Vandebosch H, Neyens E *et al.* (2015) The persuasiveness of child-targeted endorsement strategies: a systematic review. *Ann Int Commun Assoc* **39**, 311–337.
2. Kraak V & Story M (2015) Influence of food companies' brand mascots and entertainment companies' cartoon media characters on children's diet and health: a systematic review and research needs. *Obes Rev* **16**, 107–126.
3. Sadeghirad B, Duhaney T, Motaghipisheh S *et al.* (2016) Influence of unhealthy food and beverage marketing on children's dietary intake and preference: a systematic review and meta-analysis of randomized trials. *Obes Rev* **17**, 945–959.
4. Boyland E, Nolan S, Kelly B *et al.* (2016) Advertising as a cue to consume: a systematic review and meta-analysis of the effects of acute exposure to unhealthy food and nonalcoholic beverage advertising on intake in children and adults. *Am J Clin Nutr* **103**, 519–533.
5. Smith R, Kelly B, Yeatman H *et al.* (2019) Food marketing influences children's attitudes, preferences and consumption: a systematic critical review. *Nutrients* **11**, 875.
6. Boyland E & Tatlow-Golden M (2017) Exposure, power and impact of food marketing on children: evidence supports strong restrictions. *Eur J Risk Regul* **8**, 224–236.
7. Elliott C & Truman E (2019) Measuring the power of food marketing to children: a review of recent literature. *Curr Nutr Rep* **8**, 323–332.
8. NCD Risk Factor Collaboration (NCD-RisC) (2017) Worldwide trends in body-mass index, underweight, overweight, and obesity from 1975 to 2016: a pooled analysis of 2416 population-based measurement studies in 128.9 million children, adolescents, and adults. *Lancet* **390**, 2627–2642.
9. Garde A, Byrne S, Gokani N *et al.* (2018) *A Child Rights-Based Approach to Food Marketing: A Guide for Policy Makers*. Geneva: United Nations Children's Fund (UNICEF).
10. Boyland E, Garde A, Jewell J *et al.* (2018) *Evaluating Implementation of the WHO Set of Recommendations on the Marketing of Foods and Non-Alcoholic Beverages to Children: Progress, Challenges and Guidance for Next Steps in the WHO European Region*. Copenhagen: World Health Organization.
11. United Nations Children's Fund (UNICEF) (2019) *The State of the World's Children 2019. Children, Food and Nutrition: Growing Well in a Changing World*. New York: United Nations Children's Fund (UNICEF).
12. United Nations Children's Fund (UNICEF) (2019) *United Nations Special Rapporteur on the Right to Food. Protecting Children's Right to a Healthy Food Environment*. Geneva: UNICEF and United Nations Human Rights Council.
13. Tatlow-Golden M & Garde A (2020) Digital food marketing to children: exploitation, surveillance and rights violations. *Food Secur* **27**, 100423.
14. World Health Organization (2010) *Set of Recommendations on the Marketing of Foods and Non-Alcoholic Beverages to Children*. Geneva: World Health Organization.
15. Pan American Health Organization (2014) *Plan of Action for the Prevention of Obesity in Children and Adolescents*. Washington, DC: Pan American Health Organization.
16. World Health Organization (2016) *Report of the Commission on Ending Childhood Obesity*. Geneva: World Health Organization.
17. World Health Organization Regional Office for Europe (2018) *Evaluating Implementation of the WHO Set of Recommendations on the Marketing of Foods and Non-Alcoholic Beverages to Children: Progress, Challenges and Guidance for Next Steps in the WHO European Region*. Copenhagen: WHO Regional Office for Europe.
18. Potvin-Kent M, Pauzé E, Roy E-A *et al.* (2019) Children and adolescents' exposure to food and beverage marketing in social media apps. *Pediatr Obes* **14**, e12508.
19. World Cancer Research Fund International (2020) NOURISHING Database. World Cancer Research Fund International. [https://policydatabase.wcrf.org/level\\_one?page=nourishing-level-one](https://policydatabase.wcrf.org/level_one?page=nourishing-level-one) (accessed February 2021).
20. Galbraith-Emami S & Lobstein T (2013) The impact of initiatives to limit the advertising of food and beverage products to children: a systematic review. *Public Health* **14**, 960–974.
21. Kunkel D, Castonguay JS & Filer CR (2015) Evaluating industry self-regulation of food marketing to children. *Am J Prev Med* **49**, 181–187.
22. Chambers S, Freeman R, Anderson A *et al.* (2015) Reducing the volume, exposure and negative impacts of advertising for foods high in fat, sugar and salt to children: a systematic review of the evidence from statutory and self-regulatory actions and educational measures. *Prev Med* **75**, 32–43.
23. Vaale-Hallberg M (2012) Norway: fighting non-communicable diseases: possible comprehensive ban on the marketing of unhealthy food and beverages to children. *Eur Food Feed Law Rev* **7**, 213–215.
24. Vaale-Hallberg M (2013) Norway: self-regulatory institute instead of a regulatory regime: reducing marketing pressure of unhealthy food to children. *Eur Food Feed Law Rev* **8**, 277.
25. Vaale-Hallberg M (2016) Norway: self-regulatory regime: experiences so far. *Eur Food Feed Law Rev* **10**, 57–58.
26. León-Flández K, Rico-Gómez A, Moya-Geromin M *et al.* (2017) Evaluation of compliance with the Spanish Code of self-regulation of food, drinks advertising directed at children under the age of 12 years in Spain, 2012. *Public Health* **150**, 121–129.
27. Potvin Kent M & Pauzé E (2018) The effectiveness of self-regulation in limiting the advertising of unhealthy foods and beverages on children's preferred websites in Canada. *Public Health Nutr* **21**, 1608–1617.
28. Thow AM, Waqa G, Browne J *et al.* (2020) The political economy of restricting marketing to address the double burden of malnutrition: two case studies from Fiji. *Public Health Nutr* **24**, 1–10.
29. Garton K, Thow AM & Swinburn B (2020) International trade and investment agreements as barriers to food environment regulation for public health nutrition: a realist review. *Int J Health Policy Manag*. Published online: 09 October 2020. doi: 10.34172/ijhpm.2020.189.
30. Friel S, Gleeson D, Thow A-M *et al.* (2013) A new generation of trade policy: potential risks to diet-related health from the trans pacific partnership agreement. *Glob Health* **9**, 46.
31. Thow AM, Snowdon W, Labonte R *et al.* (2015) Will the next generation of preferential trade and investment agreements undermine prevention of noncommunicable diseases? A prospective policy analysis of the Trans Pacific Partnership. *Health Policy* **119**, 88–96.
32. Koivusalo M, Schrecker T & Labonte R (2009) *Globalization and Policy Space for Health and Social Determinants of Health. Globalization and Health: Pathways, Evidence and Policy*. New York: Routledge.
33. Government of Chile (2015) Chile: Law No. 20.606 on Nutritional Composition of Food and Food Advertising (as amended by Law No. 20.869 on Food Advertising)





- [Internet]. WIPO Lex. <https://wipolex.wipo.int/en/legislation/details/16343> (accessed November 2015).
34. Tulli E (2018) LA TENSION ENTRE PROPIEDAD INTELECTUAL Y EL DERECHO A LA SALUD Y A LA INFORMACION EN EL ETIQUETADO FRONTAL DE ALIMENTOS [Internet] [Master's Thesis]. [Buenos Aires, Argentina]: Facultad Latinoamericana de Ciencias Sociales (FLACSO), Sede Argentina. [cited 2021 Feb 23]. <https://repositorio.flacsoandes.edu.ec/bitstream/10469/15540/2/TFLACSO-2019ET.pdf> (accessed February 2021).
  35. Carreno I (2015) Chile's black STOP signs for foods high in fat, salt or sugar. *Eur J Risk Regul* **4**, 622–628.
  36. Carreno I & Dolle T (2017) The relationship between public health and IP rights: Chile prosecutes Kellogg's, Nestle and Masterfoods for using cartoons aimed at attracting children. *Eur J Risk Regul* **8**, 170–177.
  37. Dorlach T & Mertenskotter P (2020) Interpreters of international economic law: corporations and bureaucrats in contest over Chile's nutrition label. *Law Soc Rev* **54**, 571–606.
  38. World Cancer Research Fund International (2020) *Building Momentum: Lessons on Implementing Robust Restrictions of Food and Non-Alcoholic Beverage Marketing to Children*. London: World Cancer Research Fund International.
  39. Potočník M (2019) *Chapter 1. Trade Mark Investment Disputes: Case Studies. Arbitrating Brands: International Investment Treaties and Trademarks*. Northampton: Edward Elgar Publishing.
  40. Fidler D (2010) (2010) *The Impact of International Trade and Investment Rules on the Ability of Governments to Implement Interventions to Address Obesity: A Case Study of the European Charter on Counteracting Obesity. Trade Food, Diet and Health Perspectives and Policy Options*. Chichester: WileyBlackwell.
  41. McGrady B (2011) *Freedom to Use Taxes, Subsidies, and Restrictions on Marketing. In: Trade and Public Health: The WTO, Tobacco, Alcohol, and Diet*. Cambridge, MA: Cambridge University Press.
  42. Garde A, Curtis J & De Schutter O (2020) *Ending Childhood Obesity: A Challenge at the Crossroads of International Economic and Human Rights Law*. Cheltenham: Edward Elgar Publishing.
  43. Sattorova M (2020) *Investment Protection Agreements, Regulatory Chill, and National Measures on Childhood Obesity Prevention. Ending Childhood Obesity a Challenge at the Crossroads of International Economic and Human Rights Law*. Cheltenham: Edward Elgar.
  44. Boza S, Polanco R & Espinoza M (2019) Nutritional regulation and international trade in APEC economies: the new Chilean food labeling law. *Asian J WTO Int Health Law Policy* **14**, 73–114.
  45. Campbell M (2020) NCD prevention and international investment law in Latin America: Chile's experience in preventing obesity and unhealthy diets. *J World Invest Trade* **21**, 781–808.
  46. Thow A, Kadiyala S, Khandelwal S *et al.* (2016) Toward food policy for the dual burden of malnutrition: an exploratory policy space analysis in India. *Food Nutr Bull* **37**, 261–274.
  47. Balarajan Y & Reich M (2016) Political economy challenges in nutrition. *Glob Health* **12**, 70.
  48. Reich M & Balarajan Y (2012) *Political Economy Analysis for Food and Nutrition Security*. Washington, DC: The World Bank.
  49. Walt G & Gilson L (1994) Reforming the health sector in developing countries: the central role of policy analysis. *Health Policy Plan* **9**, 353–370.
  50. Grindle M & Thomas J (1991) *Public Choices and Policy Change: The Political Economy of Reform in Developing Countries*. Baltimore, MD: The Johns Hopkins University Press.
  51. Crichton J (2008) Changing fortunes: analysis of fluctuating policy space for family planning in Kenya. *Health Policy Plan* **23**, 339–350.
  52. Fidler D, Aginam C & Correa O (2006) *Legal Review of the General Agreement on Trade in Services (GATS) from a Health Policy Perspective*. Geneva: World Health Organization.
  53. Hall P (1993) Policy paradigms, social learning, and the State: the case of economic policymaking in Britain. *Comp Polit* **25**, 275–296.
  54. Fletcher A (2017) Applying critical realism in qualitative research: methodology meets method. *Int J Soc Res Methodol* **20**, 181–194.
  55. Swart R, Raskin P & Robinson J (2004) The problem of the future: sustainability science and scenario analysis. *Glob Environ Change* **14**, 137–146.
  56. Hughes R (1998) Considering the vignette technique and its application to a study of drug injecting and HIV risk and safer behaviour. *Sociol Health Illn* **20**, 381–400.
  57. QSR International Pty Ltd (2021) NVivo qualitative data analysis software. <https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home> (accessed May 2021).
  58. Halperin S & Heath O (2012) *Political Research: Methods and Practical Skills*. New York: Oxford University Press.
  59. Salazar ARV (2010) NAFTA Chapter 11, regulatory expropriation, and domestic counter-advertising law. *Ariz J Int Comp Law* **27**, 31–82.
  60. Halabi SF (2012) International trademark protection and global public health: a just-compensation regime for expropriations and regulatory takings. *Catbol Univ Law Rev* **61**, 325–380.
  61. Thow AM & McGrady B (2014) Protecting policy space for public health nutrition in an era of international investment agreements. *Bull World Health Organ* **92**, 139–145.
  62. Kelsey J (2020) How might digital trade agreements constrain regulatory autonomy: the case of regulating alcohol marketing in the digital age. *N Z Univ Law Rev* **29**, 153–179.
  63. Labonté M-È, Poon T, Mulligan C *et al.* (2017) Comparison of global nutrient profiling systems for restricting the commercial marketing of foods and beverages of low nutritional quality to children in Canada. *Am J Clin Nutr* **106**, 1471–1481.
  64. Wicks M, Wright H & Wentzel-Viljoen E (2016) Restricting the marketing of foods and non-alcoholic beverages to children in South Africa: are all nutrient profiling models the same? *Br J Nutr* **116**, 2150–2159.
  65. Labonté M-È, Poon T, Gladanac B *et al.* (2018) Nutrient profile models with applications in government-led nutrition policies aimed at health promotion and noncommunicable disease prevention: a systematic review. *Adv Nutr* **9**, 741–788.
  66. Vandevijvere S, Soupen A & Swinburn B (2017) Unhealthy food advertising directed to children on New Zealand television: extent, nature, impact and policy implications. *Public Health Nutr* **20**, 3029–3040.
  67. Correa T, Reyes M, Smith Taillie L *et al.* (2019) The prevalence and audience reach of food and beverage advertising on Chilean television according to marketing tactics and nutritional quality of products. *Public Health Nutr* **22**, 1113–1124.
  68. Kelly B, Vandevijvere S, Ng S *et al.* (2019) Global benchmarking of children's exposure to television advertising of unhealthy foods and beverages across 22 countries. *Obes Rev* **20**, 116–128.
  69. Mytton O, Boyland E, Adams J *et al.* (2020) The potential health impact of restricting less-healthy food and beverage



- advertising on UK television between 05.30 and 21.00 h: a modelling study. *PLoS Med* **17**, e1003212.
70. Krizanovic P (2016) Ferrero faces Kinder Surprise ban in Chile [Internet]. just-food.com. [cited 2020 Sep 1]. Available from: [https://www.just-food.com/news/ferrero-faces-kinder-surprise-ban-in-chile\\_id133574.aspx](https://www.just-food.com/news/ferrero-faces-kinder-surprise-ban-in-chile_id133574.aspx) (accessed May 2021).
  71. Corvalan C, Reyes M, Garmendia ML *et al.* (2019) Structural responses to the obesity and non-communicable diseases epidemic: update on the Chilean law of food labelling and advertising. *Obes Rev* **20**, 367–374.
  72. Kelly B, Freeman B, King L *et al.* (2016) The normative power of food promotions: Australian children's attachments to unhealthy food brands. *Public Health Nutr* **19**, 2940–2948.
  73. Harrison K, Moorman J, Peralta M *et al.* (2017) Food brand recognition and BMI in preschoolers. *Appetite* **114**, 329–337.
  74. Borzekowski D & Pires P (2018) A six country study of young children's media exposure, logo recognition, and dietary preferences. *J Child Media* **12**, 143–158.
  75. Bragg M, Roberto C, Harris J *et al.* (2018) Marketing food and beverages to youth through sports. *J Adolesc Health* **62**, 5–13.
  76. Bragg M, Miller A, Roberto C *et al.* (2018) Sports sponsorships of food and nonalcoholic beverages. *Pediatrics* **141**, e20172822.
  77. Saffer H & Chaloupka F (2000) The effect of tobacco advertising bans on tobacco consumption. *J Health Econ* **19**, 1117–1137.
  78. Burton S, Hoek J, Nesbit P *et al.* (2015) 'Smoking is bad, it's not cool . . . yet I'm still doing it': cues for tobacco consumption in a 'dark' market. *J Bus Res* **68**, 2067–2074.
  79. Friel S, Schram A & Townsend B (2020) The nexus between international trade, food systems, malnutrition and climate change. *Nat Food* **1**, 51–58.
  80. Dillman Carpentier F, Correa T, Reyes M *et al.* (2020) Evaluating the impact of Chile's marketing regulation of unhealthy foods and beverages: pre-school and adolescent children's changes in exposure to food advertising on television. *Public Health Nutr* **23**, 747–755.
  81. Mediano Stoltze F, Reyes M, Smith Taillie L *et al.* (2019) Prevalence of child-directed marketing on breakfast cereal packages before and after Chile's Food Marketing Law: a pre- and post- quantitative content analysis. *Int J Environ Res Public Health* **16**, 4501.
  82. Smith Taillie L, Reyes M, Colchero M *et al.* (2020) An evaluation of Chile's Law of Food Labeling, Advertising on sugar-sweetened beverage purchases from 2015 to 2017: a before-and-after study. *PLoS Med* **17**, e1003015.
  83. Garde A & Zrilić J (2020) International investment law and non-communicable diseases prevention. An introduction. *J World Invest Trade* **21**, 649–673.