

Short Communication

Voluntary industry initiatives to promote healthy diets: a case study on a major European food retailer

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Abstract

Objective: To analyse the scope and content of the nutrition pledge announced by Lidl.

Design: We applied the approach recommended by the private-sector module of the INFORMAS (International Network for Food and Obesity Research, Monitoring and Action Support) food environment monitoring framework and qualitative content analysis to Lidl's nutrition pledge.

Setting: Global.

Subjects: The nutrition pledge of Lidl, Europe's largest food retailer.

Results: Lidl pledges to reduce the average sales-weighted content of added sugar and added salt in its own-brand products by 20% until 2025, using 2015 as a baseline, starting in Germany. Moreover, it vows to reduce the saturated and *trans*-fatty acid contents of its own-brand products, without specifying targets or timelines. To achieve these targets, it pledges to apply a number of approaches, including reformulation, promotion of healthier products, reduction of package and portion sizes, and provision of nutrition information and education. Strengths of Lidl's pledge are its extensive scope, the quantification of some targets, and its partially evidence-based approach to the selection of targets and interventions. Key limitations include the vagueness of many targets, a lack of transparency and the absence of independent monitoring and evaluation.

Conclusions: Lidl's pledge, while commendable for its scope, does not meet current best practice guidelines. Given their current limitations, industry initiatives of this kind are likely to fall short of what is needed to improve population-level nutrition.

Keywords
Food retailing
Industry self-regulation
Food environments
INFORMAS
Germany

Voluntary initiatives by the food and beverage industry have been proposed by policy makers and industry stakeholders as one strategy for improving population-level nutrition^(1–5). From a public health perspective, voluntary industry initiatives may be attractive for several reasons. They may be more achievable than government measures, which can be hampered by pressure from interest groups, political gridlock and bureaucratic inertia, and may allow to achieve public health objectives quicker, more efficiently and less intrusively than governmental

regulation⁽⁶⁾. From an industry perspective, a number of motives for engaging in such initiatives may exist, including: contributing to socially desirable ends; creating publicity for the brand and goodwill among stakeholders; framing the public debate to align it with company goals; creating tactical disagreements among potential critics; and preventing binding government regulation and fiscal measures, among others^(3–5,7,8).

Against this background, several large European food retailing chains have announced voluntary nutrition

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initiatives^(9–11). Food retailing chains play an important role in population-level nutrition. In most high-income countries they are the most important source of foods and beverages consumed by the population, and can influence consumption through decisions on stocking, pricing and promotions^(12–14). Moreover, with their bargaining power over manufacturers and their range of own-brand products they can impact the upstream food production system^(12,14).

For the present case study, we selected a major European food retailer with a relatively comprehensive publicly available nutrition strategy and used the approach recommended by the private-sector module of the INFORMAS (International Network for Food and Obesity Research, Monitoring and Action Support) food environment monitoring framework to analyse its scope and content^(15–17).

Methods

Analytical framework

A number of frameworks have been proposed for the analysis of food industry initiatives in the field of nutrition and health^(5,8,18–23). We used the INFORMAS food environment monitoring framework⁽²⁴⁾. The INFORMAS framework has been developed by an international expert group based on reviews of the available evidence and is, to our knowledge, the most comprehensive and widely accepted framework of its kind^(25,26). It comprises twelve modules and three steps of data collection and analysis, namely minimal (step 1), expanded (step 2) and optimal (step 3)^(24,25). Here, we applied the approach recommended by the module on private-sector policies and practices, and conducted a step 1 analysis which comprises the collection and analysis of an organization's publicly available policies and commitments sourced from organization websites, reports, the media and the organization directly⁽²⁴⁾. Following the framework, we focused on policies regarding product composition with respect to salt, added sugar, saturated fat, *trans*-fatty acids and energy density, as well as on policies regarding marketing and promotion, product availability, portion and package sizes, pricing, and nutrition information and education⁽²⁴⁾. Further details are provided in the online supplementary material, Supplemental File 1.

Case selection

Our case selection was informed by two criteria: company size, namely being among the ten largest European food retailers by annual sales in 2016; and existence of a publicly available nutrition strategy with quantitative targets covering the whole own-brand product range. We chose the first criterion because, in the context of our analysis, company size by sales can be considered a workable proxy for the company's potential impact on population-

level nutrition. The rationale for the second criterion was that we were seeking to identify a company with relatively more comprehensive publicly available nutrition commitments and policies rather than a typical case representative of the food retailing industry in general. To select a case we did a scoping assessment of the companies meeting the first criterion, namely the Schwarz Group, Tesco, Carrefour, Rewe, Metro, Edeka, Aldi, E.Leclerc, ITM and Auchan⁽¹⁷⁾. Methods and results of this assessment are reported in detail in the online supplementary material, Supplemental File 2. In short, we reviewed company websites, contacted companies by email and collated statements relating to topics covered by our analytical framework. We found that most companies are involved in nutrition education activities, often in partnership with non-profit organizations. Moreover, some companies have committed themselves to non-specific reduction targets. However, based on the information reported on the company websites or provided to us by the companies, we found that Lidl is the only retailer among those we have assessed which has issued a comprehensive nutrition pledge including quantitative targets with timelines for its whole own-brand product range.

Geographic scope

To determine the geographic scope of our analysis we undertook an assessment of Lidl's international operations. Methods and results of this assessment are presented in detail in the online supplementary material, Supplemental File 1. In short, we reviewed the websites of Lidl International, as well as of Lidl's national operations in the USA, Germany, France, Great Britain, Spain, Ireland, Northern Ireland, Austria, Switzerland, Luxemburg and Hong Kong, and collated statements made by Lidl regarding the issues covered by our analytical framework. Among the countries assessed, we found that Germany is the only one for which Lidl has outlined a comprehensive nutrition strategy including quantitative targets. In our main analysis we therefore focused on Germany, where Lidl generates about one-third of its revenue⁽¹⁵⁾.

Identification and retrieval of primary sources

We used Lidl's 'Position Paper Healthy Nutrition', a forty-page document outlining Lidl's pledge, published on 25 January 2017 by Lidl Germany, as our key source of primary data⁽⁹⁾. We identified further sources of primary data by searching the websites of Lidl and organizations mentioned on Lidl's website, including charitable and advocacy organizations supported by Lidl, and by conducting Internet searches and retrieving documents cited in Lidl's position paper. Moreover, we contacted Lidl asking for any information it might be able to share with us regarding its nutrition strategy. We included all documents discussing Lidl's pledge or other activities by Lidl regarding issues covered by our analytical framework. The full list of

documents retrieved and analysed is provided in the online supplementary material, Supplemental File 1.

Data analysis and synthesis

We used qualitative content analysis methods to extract and synthesize relevant information from our primary sources, using a mixed deductive–inductive approach⁽²⁷⁾. We used the qualitative content analysis software MAXQDA (Verbi GmbH, Berlin, Germany) for coding. In a first step, two authors (P.v.P. and J.M.S.) independently coded all primary sources, inductively creating and applying codes. These codes were then compared, combined and systematized in a structured code tree consistent with the categories used by the INFORMAS framework. In a second step, two authors (P.v.P. and J.M.S.) used these codes to independently code all primary sources. The coded data were then extracted, compared and synthesized narratively and with tables by the same two authors. A third author (T.L.H.) checked the results for correctness, plausibility and clarity. Further details are provided in the online supplementary material, Supplemental File 1.

Results

Scope and content of Lidl's nutrient and food group targets

Lidl's pledges regarding the nutrient content of its own-brand products sold in Germany are outlined in Table 1, and its pledges regarding marketing and promotion, product availability, pricing, portion and package sizes, and nutrition information and education are shown in Table 2. In short, Lidl promises to improve the nutritional profile of its own-brand products – constituting about 75 % of its overall sales in Germany⁽²⁸⁾ – by reducing the content of sugar, salt, saturated fat and *trans*-fatty acids, and to reduce their energy density. With regard to monitoring and evaluation, Lidl states that it will 'continually compare [its] declared goals with actual achievements'. For its sugar and salt reduction targets this is described in greater detail: to measure its progress towards these targets, it will calculate annually the average, sales-weighted content of added sugar and added salt in its own-brand products, and compare results with those of the previous year⁽⁹⁾. Concerning transparency Lidl states that revisions to its targets and its continuous comparisons of goals with achievements will be 'made transparent to the public'⁽⁹⁾. No details are provided on how, when and by whom this will be done⁽⁹⁾.

Discussion

Lidl's nutrient and food group targets

Strengths and limitations regarding Lidl's nutrient and food group targets are summarized in Table 3. In short, key

strengths are that the pledge covers a range of relevant nutrients, food groups and intervention areas; that it includes a number of quantitative targets with clear time-lines; and that it applies to the complete range of Lidl's own-brand products sold in Germany. Key weaknesses are the omission of some important intervention areas, such as pricing and labelling, as well as the vagueness of most targets and the lack of independent monitoring and evaluation. The latter shortcomings are of particular concern. A recent review of accountability frameworks to promote healthy food environments through voluntary partnerships between government and the food industry identified a number of criteria that should guide such initiatives⁽⁸⁾. These criteria include clearly defined benchmarks, as well as independent monitoring and evaluation and public disclosure of relevant information – criteria on which Lidl's pledge falls short.

A number of further issues are worth mentioning. First, the pledge contains extensive references to national and international policy documents as well as nutrition guidelines and recommendations by expert institutions and scientific societies⁽⁹⁾. Moreover, it explicitly states that Lidl will refrain from fortifying foods and beverages with micronutrients, except for a few cases in which this is generally considered justified, such as the fortification of soya milk with calcium⁽⁹⁾. This is remarkable since the food industry has in the past been criticized for using fortification as a strategy to create an appearance of healthfulness in products which are not healthy⁽²⁹⁾. Moreover, the pledge does not mention Lidl's healthy checkout initiative, which was first introduced in its UK stores in 2014, and later in several other countries including Austria, Switzerland and Luxemburg^(30,31). This inconsistency might be due to the limited attention this issue has received so far among advocacy groups in Germany as compared with the UK, where a major national advocacy campaign preceded Lidl's initiative⁽³²⁾.

Moreover, Lidl's position paper devotes considerable space to issues not covered by our analytical framework, particularly regarding chemical residues from food production and processing and food additives. It specifies numerous quantitative targets regarding them, many of which go beyond the safety thresholds set by German and international food safety authorities⁽⁹⁾. The focus on these issues might be due to the well-documented phenomenon that the German public is more worried about chemical residues in food than about energy-dense, nutrient-poor dietary patterns rich in ultra-processed foods and beverages⁽³³⁾.

Comparison with other recent evaluations of food retailing nutrition initiatives

A recent study using a revised and expanded version of the INFORMAS framework examined the nutrition policies and commitments of the four largest Australian

Table 1 Pledges on key nutrient and food groups and on energy density of own-brand products made by Lidl

	Targets (including non-specific and quantitative targets and respective timelines)	Baseline	Food groups specifically targeted	Evidence base and reference documents
Sugar	To reduce the average, sales volume-weighted content of added sugar by 20 % until 01/01/2025, with 01/01/2015 as baseline Specific targets for breakfast cereals (max. 18.5 g sugar/100 g on average, and max. 25 g sugar/100 g for any individual product by the end of 2018, except for puffed rice cereal)	Baseline reported for breakfast cereals only (at 23 g sugar/100 g on average as of January 2017, down from 30 g sugar/100 g on average in 2008)	Breakfast cereals; desserts; beverages; yoghurt and yoghurt drinks; candy; ice cream; pastry; sweet spreads; ketchup and other sauces; convenience foods	UK Childhood Obesity Action Plan ⁽³⁵⁾ and the Dutch Agreement to Improve Product Composition ⁽²⁾ as background references WHO Healthy Diet Factsheet no. 394 ⁽³⁶⁾ for the recommendation to limit sugar intake to a maximum of 10 % of daily total energy intake WHO Regional Office for Europe nutrient profile model ⁽³⁸⁾ and European Commission Working Document on the Setting of Nutrient Profiles ⁽³⁷⁾ for breakfast cereal targets
Salt	To reduce the average, sales volume-weighted content of added salt by 20 % until 01/01/2025, with 01/01/2015 as baseline Specific targets for frozen pizza (max. 1 g salt/100 g on average by the end of 2018)	Baseline reported for frozen pizza only (at 1.12 g salt/100 g on average as of January 2017, down from 1.37 g salt/100 g on average in 2008)	Frozen pizza; bread and other bakery goods; processed meat; prepared meals; sauces; soups; savoury snacks	UK Food Standards Agency Salt Targets ⁽³⁹⁾ and the Dutch Agreement to Improve Product Composition ⁽²⁾ as background references German Nutrition Society press release ⁽⁴⁰⁾ for the recommendation to limit daily intake of salt to 6 g WHO Regional Office for Europe nutrient profile model ⁽³⁸⁾ for frozen pizza targets
Saturated fat	No quantitative target specified, but general commitment to reduce the content of saturated fats	No baselines reported	Potato chips; sweet spreads; foods containing palm oil	Dutch Agreement to Improve Product Composition ⁽²⁾ as background reference WHO Healthy Diet Factsheet no. 394 ⁽³⁸⁾ and German Nutrition Society Fat Guideline ⁽⁴¹⁾ for the recommendation to limit saturated fat intake to a maximum of 10 % of daily total energy intake
<i>Trans</i> -fatty acids	To limit the content of artificial <i>trans</i> -fatty acids to 2 g per 100 g fat content as soon as possible (no timeline specified)	No baselines reported, but general statement that it already 'avoids hydrogenated fats wherever possible'	Potato chips; savoury and sweet snacks; pastry; sweet spreads	Danish legislation on industrially produced <i>trans</i> -fatty acids for the limit of a maximum of 2 g <i>trans</i> -fatty acids per 100 g fat content (no specific document referenced) Regulation on industrially produced <i>trans</i> -fatty acids in Austria, Hungary, Iceland, Norway, Latvia and Switzerland as background references (no specific documents referenced)
Energy density	No quantitative targets, but general commitment to 'keep an eye on energy density' while implementing its sugar, saturated fat and salt targets. Commitment to avoid substituting sugar with fat to ensure that efforts to reduce sugar content lead to decreases in energy density	No baselines reported	No food groups mentioned	Dutch Roadmap for Action on Food Product Improvement ⁽²⁾ as background reference

Table 2 Pledges made by Lidl on promotion and marketing, product availability, pricing, and nutrition information and education

	Pledges made by Lidl
Promotion and marketing	Commitment to promote sales of products low in sugar and salt, and to engage in activities to promote the consumption of fruit and vegetables, mainly in cooperation with charities ^(9,42)
Product availability	Commitment to continue offering a broad range of fresh fruits and vegetables, and to increase the range of products low in added sugar and added salt, including diet beverages and bottled water ⁽⁹⁾
Pricing	Pricing is not mentioned in any of the documents published by Lidl. By contrast, a press release published by diabetesDE (a diabetes advocacy organization listed as a civil society partner on Lidl's website) states in general terms that Lidl will offer healthy products inexpensively ⁽⁴³⁾ , a statement which has been picked up by subsequent press reports ⁽⁴⁴⁾
Package and portion sizes	Commitment to reduce portion and package sizes of energy-dense products and products high in sugar and salt, including, among others, chocolate bars ⁽⁹⁾
Nutrition information and education	Commitment to cooperate with sporting, youth and health organizations to promote nutrition education ^(9,42,43) . No information regarding labelling and health and nutrition content claims on foods and beverages is provided ⁽⁹⁾

supermarket chains⁽¹⁴⁾. It found large variations in the transparency, comprehensiveness and specificity of the companies' policies and commitments. Overall, its findings are in line with the results of our study. Three out of four companies discussed nutrition and health as part of their corporate reporting, and two reported efforts to reduce levels of salt, sugar and saturated fat in their own-brand products, as does Lidl. By contrast, none of the four companies had published formal policies to limit the marketing and promotion of unhealthy foods and beverages, which is also a weakness of Lidl's pledge. Going beyond Lidl's approach in Germany, the two largest Australian food retailers have committed to implementing a rating score nutrition labelling system and one of them has committed to introducing healthy checkouts⁽¹⁴⁾.

Strengths and weaknesses of the present analysis

Our analysis has various strengths. We use a systematic, evidence- and consensus-based analytical framework, as well as established methods of qualitative content analysis. All steps in the main analysis were carefully executed, with two researchers independently assessing the same documents and the whole research team interpreting overall findings. However, our study also has limitations. Within the INFORMAS framework, we conduct only a step 1 analysis based on information that is publicly available. Unlike the Australian study mentioned above we were unable to use the revised and refined framework, which was developed by INFORMAS specifically for the analysis of nutrition policies and commitments of supermarkets, as this was published after we had already begun our analysis^(14,23). While we contacted Lidl's press office and customer service, we were not successful in sourcing additional information from Lidl. We were also unable to clarify a number of ambiguous statements contained in Lidl's position paper; in response to our enquiry Lidl stated that it was unable to comment on our questions. Moreover, we purposefully selected a company with relatively more comprehensive publicly available nutrition policies

and commitments, implying that the findings of our case study are not likely to be representative of food retailers in general.

Conclusions

Lidl is, to our knowledge, the first major European food retailer committing itself to a comprehensive nutrition strategy which includes at least some quantitative targets with clear timelines covering its whole own-product range. Lidl's pledge covers a broad range of relevant nutrient and food groups and intervention areas. Furthermore, given Lidl's position as Europe's largest food retailer, even minor changes to the nutrient profile of Lidl's sales would likely be relevant on a population level. These strengths, however, contrast with several limitations. The lack of clarity in the definition of several of its key targets, the absence of information regarding baseline assessments for all but a few sub-targets, and the lack of independent monitoring and evaluation cast doubt on Lidl's confidence in its ability to achieve meaningful changes and will make any rigorous assessment of its achievements difficult. Moreover, important areas of concern with regard to diet and health, such as energy density, dietary fibre, red and processed meat, as well as pricing and labelling, are not covered systematically.

A number of options for strengthening Lidl's healthy nutrition strategy exist. It is a general management principle that objectives should be SMARTER, namely specific, measurable, achievable, relevant, time-bound, and (independently) evaluated and reviewed⁽³⁴⁾. The relevance of these principles for voluntary industry initiatives in the field of nutrition and health has been highlighted by a number of reviews of such initiatives and relevant frameworks^(5,8,19). If Lidl is serious about its pledge, it should therefore specify quantitative targets, baselines and timelines for all main objectives, using a sufficiently ambitious and comprehensive benchmark as point of reference; commit to use the available range of interventions more

Table 3 Strengths and limitations regarding the scope, quantification of targets and transparency of Lidl's pledge

	Strength	Limitation
Nutrient groups covered	Most of the nutrient groups highlighted by the WHO Regional Office for Europe nutrient profile model ⁽³⁸⁾ are covered, i.e. sugar, salt, saturated fat and <i>trans</i> -fatty acids. Potential trade-offs between sugar, saturated fat and salt reduction are discussed	Dietary fibre is not covered
Food groups covered	Fruits and vegetables and sugar-sweetened beverages are given special attention. General commitment to focus sugar reduction efforts on products regularly consumed by children, such as breakfast cereals, and to focus salt reduction efforts on products which are consumed regularly and contribute substantially to population-level salt intake, such as frozen pizza (for details on concrete examples see Table 1)	The pledge contains no general commitment to promote minimally and non-processed over highly and ultra-processed foods and beverages. Processed and red meat is covered only with regard to its salt and saturated fat content
Geographic coverage	The pledges refer to all 3200 Lidl stores in Germany, Lidl's largest market	No information is provided on whether Lidl plans to make similar pledges or to take equivalent action in its other markets in Europe and elsewhere
Product coverage	The pledge refers to all own-brand products sold by Lidl, making up approximately 75% of its foods and beverages sold in Germany ⁽²⁸⁾	No information is provided regarding the remaining product portfolio
Intervention areas	The pledge outlines a number of intervention areas for which there is evidence of effectiveness if properly implemented, including reformulation, reductions in package and portion sizes, increased stocking of healthier items and in-store marketing	Pricing is not mentioned. Price promotion is not mentioned explicitly. Stocking, labelling and marketing are discussed only as a means to increase sales of healthier items, and not with regard to less healthy items
Quantification of targets and specification of timelines	For two nutrient groups – added sugar and added salt – the pledge gives quantitative targets with clear timelines	For added sugar and added salt, the overall target is relative (i.e. a 20% reduction from an unknown baseline) and absolute targets are given only for breakfast cereals and frozen pizza. For <i>trans</i> -fatty acids a quantitative target is given, but without a clear timeline. For all remaining nutrient and food groups, no quantitative targets are provided. For the targets on added sugar, added salt and <i>trans</i> -fatty acids, important information on how they will be measured and assessed is missing, including details on whether the sales volume-weighting will be done by the financial value or the physical volume of sales. No quantitative target for energy density is specified
Baseline assessment	For two food groups – breakfast cereals and frozen pizza – baseline values regarding their sugar and salt content are reported	For all other nutrient and food groups, no baseline values are reported
Level of targets relative to the WHO Regional Office for Europe nutrient profile model ⁽³⁸⁾	For the salt content of frozen pizza, the pledge aims to achieve the recommendations of the WHO nutrient profile model by 2018	For the added sugar content of breakfast cereals, Lidl's target falls short of the recommendation by the WHO nutrient profile model. For all remaining targets, the level cannot be assessed due to a lack of quantification or the reporting of relative targets with unknown baselines
Transparency, monitoring and evaluation	Lidl promises to continually compare its declared goals with actual achievements and to make the results transparent to the public	No details are given on how the results will be made public. No information regarding independent, external monitoring and evaluation is provided, and Lidl has so far declined to cooperate for this purpose with external partners, such as a university or a research group (personal communication, diabetesDE)

consistently; strive to achieve a healthier composition of all products sold, including products not part of its own-brand range; broaden the geographic scope of its pledge; ensure systematic monitoring, evaluation and review, preferably through an independent research institute; set up a mechanism for staying up to date on research and societal developments, for example through

establishing a scientific advisory board; and increase transparency, for example through comprehensive progress reports published on a regular basis. Other food retailers, which have not yet developed comprehensive healthy nutrition strategies, should learn from the strengths and limitations of Lidl's pledge, and account for these from the start.

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Supplementary material

To view supplementary material for this article, please visit <https://doi.org/10.1017/S1368980018002744>

References

1. Dutch EU Presidency (2016) Roadmap for Action on Food Product Improvement. <https://www.rijksoverheid.nl/documenten/formulieren/2016/02/22/roadmap-for-action-on-food-product-improvement> (accessed April 2017).
2. Dutch Ministry of Health Welfare and Sport (2016) Agreement to Improve Product Composition 2014–2020. http://www.rivm.nl/en/Topics/F/Food_Reformulation/Dutch_Agreement_to_Improve_Product_Composition_2014_2020 (accessed April 2017).
3. Koplan JP & Brownell KD (2010) Response of the food and beverage industry to the obesity threat. *JAMA* **304**, 1487–1488.
4. Scott C, Hawkins B & Knai C (2017) Food and beverage product reformulation as a corporate political strategy. *Soc Sci Med* **172**, 37–45.
5. Kraak VI & Story M (2015) Guiding principles and a decision-making framework for stakeholders pursuing healthy food environments. *Health Aff (Millwood)* **34**, 1972–1978.
6. Yach D (2014) Food industry: friend or foe? *Obes Rev* **15**, 2–5.
7. Nixon L, Mejia P, Cheyne A *et al.* (2015) 'We're part of the solution': evolution of the food and beverage industry's framing of obesity concerns between 2000 and 2012. *Am J Public Health* **105**, 2228–2236.
8. Kraak VI, Swinburn B, Lawrence M *et al.* (2014) An accountability framework to promote healthy food environments. *Public Health Nutr* **17**, 2467–2483.
9. Lidl Deutschland (2017) Positionspapier Bewusste Ernährung. http://www.lidl.de/de/asset/other/170125_Positionspapier_Bewusste_Ernaehrung.pdf (accessed April 2017).
10. Tesco (2016) An update on our Corporate Responsibility commitments – November 2016. http://www.tescopl.com/media/391787/corporate-responsibility-update_nov-2016-final.pdf (accessed April 2017).
11. Real (2017) Einkaufsleitlinie für Fett-, Zucker- und Salzreduzierte Produkte. http://shared.real.de/handeln_ausverantwortung/pdf/Einkaufsleitlinie-Reformulierung.pdf (accessed April 2017).
12. Taillie LS, Ng SW & Popkin BM (2016) Global growth of 'big box' stores and the potential impact on human health and nutrition. *Nutr Rev* **74**, 83–97.
13. Glanz K, Bader MD & Iyer S (2012) Retail grocery store marketing strategies and obesity: an integrative review. *Am J Prev Med* **42**, 503–512.
14. Sacks G, Robinson E, Cameron A *et al.* (2018) Inside our supermarkets: Australia 2018. Assessment of company policies and commitments related to obesity prevention and nutrition. <http://www.insideourfoodcompanies.com.au/supermarkets> (accessed August 2018).
15. Deloitte (2017) Global Powers of Retailing 2017: The art and science of customers. <http://www2.deloitte.com/content/dam/Deloitte/global/Documents/consumer-industrial-products/gx-cip-2017-global-powers-of-retailing.pdf> (accessed April 2017).
16. Lidl International (2017) About Lidl. <http://www.info.lidl/en-gb/index.html> (accessed April 2017).
17. Retail-Index (2018) Rankings and Profiles of Food Retailers in Europe, America, Asia and Africa. <http://www.retail-index.com/Sectors/FoodRetailersinEuropeandworldwide.aspx> (accessed August 2018).
18. Dibb S (2004) Rating retailers for health. National Consumer Council 2014. http://www.sustainweb.org/publications/rating_retailers_for_health (accessed August 2018).
19. Sharma LL, Teret SP & Brownell KD (2010) The food industry and self-regulation: standards to promote success and to avoid public health failures. *Am J Public Health* **100**, 240–246.
20. Access to Nutrition Index (2018) Global Index 2018. <http://www.accessnutrition.org> (accessed August 2018).
21. Sacks G, Swinburn B, Kraak V *et al.* (2013) A proposed approach to monitor private-sector policies and practices related to food environments, obesity and non-communicable disease prevention. *Obes Rev* **14**, 38–48.

22. Mialon M, Swinburn B & Sacks G (2015) A proposed approach to systematically identify and monitor the corporate political activity of the food industry with respect to public health using publicly available information. *Obes Rev* **16**, 519–530.
23. Sacks G & Vanderlee L (2018) BIA-Obesity (Business Impact Assessment – Obesity and population nutrition) Tool Australia 2018. Methods v1.0 May 2018. <http://www.informas.org/bia-obesity> (accessed August 2018).
24. Sacks G, Swinburn B, Kraak V *et al.* (2013) A proposed approach to monitor private-sector policies and practices related to food environments, obesity and non-communicable disease prevention. *Obes Rev* **14**, 38–48.
25. Swinburn B, Sacks G, Vandevijvere S *et al.* (2013) INFORMAS (International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support): overview and key principles. *Obes Rev* **14**, 1–12.
26. INFORMAS (2018) INFORMAS Countries. <http://www.fmhs.auckland.ac.nz/en/soph/global-health/projects/informas/regions.html> org (accessed August 2018).
27. Hsieh H-F & Shannon SE (2005) Three approaches to qualitative content analysis. *Qual Health Res* **15**, 1277–1288.
28. Agriculture and Agri-Food Canada, Market Access Secretariat (2016) Private Label Trends: Packaged Food in Germany. <http://www.agr.gc.ca/resources/prod/Internet-Internet/MISB-DGSIM/ATS-SEA/PDF/6745-eng.pdf> (accessed April 2017).
29. Nestle M (2013) Go forth and fortify. In *Food Politics*, pp. 298–314 [M Nestle, editor]. Berkeley, CA: University of California Press.
30. Lidl UK (2017) Children's diets challenged by supermarket checkout chocolates. <http://www.lidl.co.uk/en/5028.htm> (accessed April 2017).
31. Lidl Switzerland (2017) Alternative Kasse. <http://www.verantwortung-lidl.ch/de/gesellschaft/ggesund-und-munter-mit-lidlschweiz/alternative-kasse/> (accessed April 2017).
32. British Dietetic Association (2017) Junk Free Checkouts Campaign. http://www.bda.uk.com/regionsgroups/groups/obesity/junk_free_checkouts (accessed April 2017).
33. Bundesamt für Risikobewertung (2016) BfR Verbrauchermonitor 2016. <http://www.bfr.bund.de/cm/350/bfr-verbrauchermonitor-2016.pdf> (accessed April 2017).
34. Yemm G (2012) *Financial Times Essential Guides: Leading Your Team. How to Set Goals, Measure Performance and Reward Talent*. Harlow: Pearson.
35. HM Government (2016) Guidance: Childhood obesity: a plan for action. <http://www.gov.uk/government/publications/childhood-obesity-a-plan-for-action> (accessed April 2017).
36. World Health Organization (2015) Healthy diet. Factsheet no. 394. <http://www.who.int/mediacentre/factsheets/fs394/en/> (accessed April 2017).
37. European Commission (2015) Evaluation of a) Regulation (EC) No 1924/2006 on nutrition and health claims made on food with regard to nutrient profiles and health claims made on plants and their preparations and of b) the general regulatory framework for their use in foods, http://ec.europa.eu/smart-regulation/roadmaps/docs/2015_sante_595_evaluation_health_claims_en.pdf (accessed April 2017).
38. World Health Organization (2015) WHO Regional Office for Europe nutrient profile model. http://www.euro.who.int/__data/assets/pdf_file/0005/270716/Europe-nutrient-profile-model-2015-en.pdf (accessed April 2017).
39. Food Standards Agency (2017) Salt targets. <http://www.food.gov.uk/northern-ireland/nutritionni/salt-ni/salt-targets> (accessed April 2017).
40. Deutsche Gesellschaft für Ernährung (2016) Speisesalzgehalt in Lebensmitteln senken. http://www.dge.de/uploads/media/DGE-Pressmeldung-aktuell-03-2016-Speisesalz_01.pdf (accessed April 2017).
41. Deutsche Gesellschaft für Ernährung (2015) Evidenzbasierte Leitlinie: Fettzufuhr und Prävention ausgewählter ernährungsmitbedingter Krankheiten. <http://www.dge.de/uploads/media/Gesamt-DGE-Leitlinie-Fett-2015.pdf> (accessed April 2017).
42. Lidl (2017) brotZeit e.V. <http://www.lidl.de/de/brotzeit-e-v/s7373717> (accessed April 2017).
43. diabetesDE (2017) Prävention fängt beim Einkauf an: Gesundes lohnt sich. <http://www.diabetesde.org/press-emitteilung/praevention-faengt-beim-einkauf-gesundes-lohnt> (accessed April 2017).
44. Deutsches Ärzteblatt (2017) Deutsche Diabetes-Hilfe und Lidl arbeiten bei Verbraucheraufklärung zusammen. <http://www.aerzteblatt.de/nachrichten/72728/Deutsche-Diabetes-Hilfe-und-Lidl-arbeiten-bei-Verbraucheraufklaerung-zusammen> (accessed April 2017).