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Unravelling the persistent problem of unhealthy diets: A system analysis of the Dutch food retail system

Cédric N.H. Middel[a,b,c,d], Joreintje D. Mackenbach[b,c,d], Tobias Kuijt[a], Lotte Levelt[e], Jacqueline E.W. Broerse[a], and Tjerk Jan Schuitmaker-Warnaar[a]

[a]*Athena Institute, Faculty of Science, Vrije Universiteit Amsterdam, Amsterdam, the Netherlands*
[b]*Department of Epidemiology and Data Science, Amsterdam University Medical Centers, Vrije Universiteit Amsterdam, the Netherlands*
[c]*Upstream Team, www.upstreamteam.nl, Amsterdam University Medical Centers, the Netherlands*
[d]*Amsterdam Public Health, Health Behaviors and Chronic Diseases, Amsterdam, The Netherlands*
[e]*Institute for Interdisciplinary Studies, Faculty of Science, University of Amsterdam, the Netherlands*
c.n.h.middel@amsterdamumc.nl; j.mackenbach@amsterdamumc.nl; tobiaskuijt@live.nl; l.levelt@nyenrode.nl; j.e.w.broerse@vu.nl; t.j.schuitmaker@uva.nl

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ABSTRACT

Unhealthy food retail environments are the result of systemic factors responsible for historical successes in food retail. Through historical literature and interviews with present-day stakeholders in the Dutch food retail system, four important dynamics were identified: The self-reinforcing consumer landscape that prioritises low prices and convenience; the prioritisation of commercial interests in the food retail regime and its perversion of health promotion efforts; the gridlocked food retail market maintained by neoliberal thinking; and the role of major food industry brands in creating consumer demand for and in-store availability of unhealthy products.

Keywords*: Food stores; supermarkets; food environment; obesity; cardiovascular diseases.*

1 Introduction

Unhealthy dietary behaviours (UDBs) are a major threat to public health, through their contributions to noncommunicable diseases such as type 2 diabetes, cardiovascular diseases, and multiple types of cancer (Afshin *et al.*, 2019; Swinburn *et al.*, 2019; Murray *et al.*, 2020). Such behaviours are not just individual choices, but driven by the unhealthy influences in modern food retail environments (Glanz *et al.*, 2005; Gustafson *et al.*, 2013; HLPE, 2017), predominantly food stores (e.g., supermarkets). As such, reducing the unhealthy influences in these environments could contribute positively to reducing the prevalence of UDBs.

Various studies have attempted to promote healthier dietary behaviours through interventions in food retail environments (Gittelsohn, Rowan and Gadhoke, 2012; Mah *et al.*, 2019; Stuber *et al.*, 2024). However, these studies often focus on the symptom of unhealthy influences in food retail environments, and neglect the underlying causes that created this environment. As a result, these interventions often encounter implementation and sustainability barriers, which limit their reach and impact (Gupta *et al.*, 2022).

Previous research linked unhealthy food retail environments to systemic factors, from the ways of thinking and doing in individual food retail organisations (Middel, 2023), up to (super)national influences such as commercial interests (Brownell and Warner, 2009), and dominant ideologies (Sainsbury *et al.*, 2020; Barlow and Thow, 2021). These examples illustrate how the goal of healthier food retail environments is directly at odds with how food retail systems are organised and operate. Systems innovation literature refers to such systemically embedded problems as persistent problems; problems in which the system reproduces itself, hampering innovation and change (Schuitmaker, 2012).

Characteristic of persistent problems is that the factors that create them are intrinsically linked to factors that underlie the historically grown success of the system, but since then come to create negative and unintended side-effects (Schuitmaker, 2012), for example the development of highly palatable and cheap foods leading to greater sales, but also overconsumption. Because of this historical tie of the problematic factors with success, efforts to address or change these factors often are generally met with resistance (Rotmans and Loorbach, 2010), leading to the aforementioned implementation and sustainability barriers of health interventions in food retail environments (Gupta *et al.*, 2022). A persistent problems-based perspective in which the mechanisms of these barriers are unravelled could be valuable for addressing them, but is lacking in the current literature.

This paper addresses this gap by answering the following question: “Which systemic factors contribute to the current unhealthy food retail environments and how are these historically embedded in the system?” Due to the context-specific nature of this question, it was addressed through a case study of the Dutch food retail system.

2 Theoretical Framework

Our framework, described in more detail elsewhere (Middel, 2023, pp. 22–31) integrates various frameworks and concepts from transition theory. Systems are characterised by regimes, representing the dominant ways of thinking and doing (e.g., the retail regime, the focus of this study, or the regime of food brands) (Geels and Schot, 2010). These regimes operate against a backdrop of broad natural, social, political and economic factors, called the landscape, which can pressure the regime to change (e.g., economic crisis, social trends) (Geels and Schot, 2010). Within a regime, people perform routine activities (practices) to contribute to the goal of the system (e.g., selling food) (Van Raak, 2010). These practices are guided by beliefs and values (the culture) (e.g., what is believed to make products profitable), and enabled or constrained by resources, rules, and boundaries (the structures) (e.g., laws, metrics, physical space) (Van Raak, 2010).

When a practice is successful (in terms of contributing to the goal of the regime) this provides legitimacy to the underlying culture and structure, which as a result become increasingly embedded in the system through increased structuration (Van Raak, 2010). This culture and structure will then reproduce similar practices in the future, starting the cycle anew (Van Raak, 2010). For example, when offering discounts succeeds in drawing consumers, the underlying assumption (discounts draw consumers) becomes a widely accepted belief, and discounts are taken up in the organisational strategy. This will naturally lead to more use of discounts in the future. As such, the factors embedded in a regime are generally associated with historical successes (Schuitmaker, 2012).

In the case of a persistent problem, certain regime factors produce practices that cause unintended problems (e.g., discounts on products promote overconsumption) (Schuitmaker, 2012). To address these side-effects, the responsible regime factors need to be changed (discounts as part of organisational strategy). This is directly at odds with regime-perspective on these factors as contributing to historical successes (e.g., offering discounts draws customers), and results in resistance to changing these factors (e.g., no more discounts means losing customers), thus making the problem persistent (Schuitmaker, 2012). In order to fully understand the causes of a persistent problem, we therefore

need to consider both the current factors at play, as well as the historical developments which originally led to these factors. The persistent problem in this study is the promotion of UDBs in the Dutch food retail system.

3 Methods

The following sections describe the context, study design, participants, data collection, processing and analysis, ethics, and validity.

3.1 Context

This study examined the Dutch food retail system as a case study. This system can be defined as a network of interacting actors and factors, that has the collective goal to retail food for profit. It is dominated by a small number of national supermarkets chains, in a highly saturated market (Distrifood, 2019), where pricing is the main competitive strategy. More context is provided as part of the results.

3.2 Study Design

The study followed a validated approach for unravelling persistent problems, combining an integrated analysis of historical literature and interviews with present-day system stakeholders (Schuitmaker, 2012; Schuitmaker and ter Haar-van Twillert, 2017). This approach was applied as a two-part methodology, where both parts iterate on each other. The first part explores how the present-day regime, and the general perceptions regarding how the system relates to the persistent problem, came to be. This was done through a historically informed analysis (Schuitmaker and ter Haar-van Twillert, 2017) involving an explorative search of grey and white literature on the development of the Dutch food retail system, and the problem of UDBs in relation to this system.

The second part explores how, in the present, the Dutch food retail system contributes to the problem of UDBs, and what systemic factors prevent this problem from being resolved (i.e. make it persistent). For this purpose, an actor-driven analysis was conducted (Schuitmaker and ter Haar-van Twillert, 2017), which gathered the perspectives of relevant stakeholders in the food retail system (e.g., retailers, consumer organisations) in addressing the problem (e.g., health organisations), using semi-structure interviews.

Both parts were conducted in parallel and iteratively: the outcomes of each inform the other. To determine which historical developments were relevant to the study, we explored whether they could be linked to present-day factors and dynamics identified in the actor-driven analysis. For example, the historical developments in pricing could be linked to the present dominance of price in determining consumer demand. Vice versa, we would specifically search for historical developments related to factors identified as important in the actor-driven analysis. For example, neoliberalism and the lack of market regulation were frequently mentioned factors, leading us to explore historical developments leading to this paradigm. Through this iteration, our findings provide integrated perspectives on the problem of UDBs, and its embedding in the Dutch food retail system.

3.3 Historically-informed analysis

3.31 Data collection

Initially, unstructured literature explorations were conducted to gain an impression of important events, sources, and terminology, and demarcate a time period to focus on. The year 1950 was chosen as the starting point, as this was when the self-service retail format first appeared, which defines modern-day retail. Impressions of these searches, alongside preliminary outcomes from the actor-driven analysis, were used to define search terms related to 1) the food retail system, and 2) the problem of UDBs.

Between May and July 2022, these search terms (Supplementary File A) were used to perform searches for both topics in Google, Google Scholar, repositories of Dutch governmental websites and the Dutch National Archives. We included sources that covered the Dutch context and were written in Dutch or English. Grey and white literature were both included. Subsequently, specific searches and backwards snowballing (Wohlin, 2014) were used to find literature on time periods or events that were not adequately covered (e.g., economic crisis), and related to factors identified as important by the actor-driven analysis.

3.32 Data processing and analysis

Sources were analysed following a content analysis approach (Elo and Kyngäs, 2008). Sources on 1) the food retail system, and 2) the problem of UDBs, were analysed separately. In both analyses, sources were scanned, and relevant sections marked. Next, we went through the marked sections of each source and extracted all relevant events, including an estimated date (generally the year), which were ordered on a chronological list, creating a rough time-line. Relevancy

was determined based on iterative insights from the actor-driven analysis (see below). Apparent gaps in the time-lines were addressed by focused searches, as discussed under data collection. After both analyses were completed, we conducted axial coding to identify connections between the two (Allen, 2017), e.g., related developments. Finally, both time-lines were integrated and synthesized into one chronological narrative. Based on major trends and developments, this narrative was divided into chronological periods.

3.4 Actor-Driven Analysis

3.41 Participants

The participants of the actor-driven analysis were purposefully sampled from relevant stakeholder groups, following Mierlo *et al.* (2010)s suggestions for system analysis: 1) knowledge institutions (academia; n=4), chain partners (food brands; n=5), businesses (supermarkets; n=4), governmental bodies (n=4), consumers (consumer organisations; n=3), and interest groups (health foundations; n=1). Participants were identified through professional connections, documents on health-promotion projects, previous participants, and LinkedIn. They were contacted via email, social media, or telephone, and received an explanation of the study, before being asked to participate.

3.42 Ethics

This study complied with the code of ethics of the VU University Faculty of Science, and required no further ethical review (Research Ethics Review Committee, 2018). Participants were informed in advance of the goals and design of the study and their right to refuse participation and withhold sensitive information. Verbal and written consent for the recording and use of data for academic publications was obtained in advance, to which all participants agreed.

3.43 Data Collection

We interviewed 17 participants, between December 2020 and June 2021. Interviews took place via video-call, lasted around 60 minutes, were conducted by two researchers, and were audio-recorded. In preparation, participants received information on the study, and could ask questions before providing consent.

The interviews were semi-structured (Supplementary File B). Participants would introduce themselves, and were asked to share their perspectives on pre-defined discussion topics. The researchers would ask deepening questions until sufficient depth had been reached, the knowledge of the participant had been exhausted, or the conversation became repetitive. Next, the researcher would ask whether there were any other perspectives on the topic that the participant wanted to share, and otherwise move on to the next topic. The topics were 1) the problem of UDBs and their promotion by the Dutch food retail system, 2) what factors cause this, and need to change, and 3) what factors prevent such changes. Finally, the researchers could inquire after (not yet discussed) topics from the historically-informed analysis or preceding interviews. Insights from these interviews were used to iterate upon the historically informed analysis (see above), by indicating which factors and their development should be considered relevant.

3.44 Data processing and analysis

Interview recordings were transcribed verbatim. Transcripts were anonymized by removing identifying information (e.g., names, titles, organisations). Recordings were deleted, and transcripts and identification keys were encrypted and stored on a secure server.

Transcripts were coded in Atlas.ti (Hwang, 2008), using a combination of inductive and deductive coding (Gibbs, 2007). First, we marked passages that discussed factors that contribute to the systemic (re)production of practices that promote UDBs in food retail environments. These passages were labelled with codes that summarized these factors, reusing the same codes for the same factors. Codes were occasionally reviewed to integrate similar ones, or split codes that were too broad in scope. All codes were organised in a network, and relationships between codes, based on how they were discussed in relevant passages, were represented in this network as connections. Codes were categorised under the associated concepts of our theoretical framework (landscape, regime, culture, structure, practice, persistent problem) (Gibbs, 2007; van Mierlo *et al.*, 2010). Based on the connections in this network and passages related to each code, narratives were constructed, which were organised into overarching themes.

3.45 Validity

The interview guide was reviewed by three researchers, and revised after two interviews, to improve its clarity. Furthermore, we conducted member checks with all participants, through summaries of the important information provided in their interview. Coding of the interviews was performed by the third author and reviewed independently by the first author.

4 Results

In this section, we first present a chronological narrative based on the historically informed analysis, to set the contextual stage, followed by a thematic overview of the major factors at play in this context based on the actor-driven analysis. The mechanisms of reproduction of the problem of the persistent UDBs in which both analyses come together is covered in our discussion. The outcomes of these methodologies present historical and current perspectives on the same problem and system, and should therefore be understood in combination.

4.1 Historically-informed Analysis

The historically-informed analysis included a total of 30 sources (5 white/25 grey) covering several periods in the development of the Dutch food retail system, and 33 sources regarding UDBs (8 white/25 grey). We identified four periods in which different themes in retail and the perception of the problem of UDBs dominated the development of the current-day system. Figure 1 provides an overview of these periods and the major key events within them. More details are provided in the following sections.

4.11 1945-1955: Rise of Self-service and Knowledge Deficiency

Following World War II, Dutch food retail knew a mixture of business formats: independents, affiliates, chains, and various cooperatives (Muiswinkel, 1957). Retail was service based, and staff would advise and promote products directly to customers (Rutte and Koning, 1998; Sluijter, 2007). During these years, staff shortages and governmental price-control policies decreased profit-margins (Schouten, 1957; Rutte and Koning, 1998). From 1947 onward several retailers adopted the experimental self-service model, which required less staff and was believed to make customers spend more (Rutte and Koning, 1998; Sluijter, 2007). These self-service stores were revolutionary in design: organised into a walking route along mass displays with price tags, ending at a counter (Sluijter, 2007). To remedy the lack of direct interaction with customers, retailers used new marketing tools, e.g., advertisements, and discounts (Rutte and Koning, 1998; Sluijter, 2007). Retailers also shifted towards cheaper brands or private labels, focusing on a profitable product range and efficient stocking through collective buying-power (Rutte and Koning, 1998; Sluijter, 2007). Going into the 50s, the economy improved (Hondelink, 1993; CBS, 2014), creating a demand for luxury products (Rutte and Koning, 1998; Sluijter, 2007).

Throughout this period, UDBs were characterised as lacking important nutrients, although overconsumption of fats was (also) a known health issue (Food Information Office, 1951, 1971, 1977). UDBs were believed to be caused by knowledge deficiency, and solvable through education (Swaak, 1968; Food Information Office, 1977; Blokker, 1979), which was mainly organised by the Dutch Food Information Office (Food Information Office, 1951; Otterloo, 1990; Verriet, 2013). Food retailers were deemed inconsequential (Food Information Office, 1977).

4.12 1955-1973: Professionalization, Upscaling and Growing Health Concerns

This period, self-service grew in popularity (Rutte and Koning, 1998; Sluijter, 2007), but labour costs grew, leading retailers to abolish costly services, reduce staff further, and move towards pre-packaged products (Rutte and Koning, 1998; Sluijter, 2007). Marketing and store lay-out were improved to better target customers needs and in-store experiences (Storm, 1969; Sluijter, 2007). Product pricing became a popular tool to differentiate from competitors, enabled by increasingly efficient and professionalised organisation (Missets Weekblad, 1955, as cited in Sluijter, 2007; EIM, 1957, 1960), exemplified by rise discounters, which specialised in a limited product range at relatively low prices (Niepoth, 1991; Rutte and Koning, 1998; Sluijter, 2007).

Other retailers, especially chains, expanded their product ranges with food and non-food options, leading to the first supermarkets in 1955 (Rutte and Koning, 1998; Sluijter, 2007), which became popular one-stop shops (De Jager, 1995; Rutte and Koning, 1998; Sluijter, 2007). As logistics improved, supermarkets became highly efficient and profitable, taking over a quarter of the market by 1967 (Niepoth, 1991; De Jager, 1995; Rutte and Koning, 1998).

To stand out among the growing product ranges, brands employed recognizable packaging, in-store marketing, and offering attractive prices to retailers in return for favourable shelf-placement (Bouwens, 1960; Sluijter, 2007). At the time, brands dictated the in-store prices for their products (vertical price-binding), and blacklisted non-compliers from their popular products (Govers, 1969; Rutte and Koning, 1998; Sluijter, 2007, 2007). This caused friction with the retailers, who wanted to offer lower prices than their competitors (Rutte and Koning, 1998; Sluijter, 2007).

This same period, overconsumption of fats and sugars first became a major concern for the Food Information Office, and a priority from 1955 onward (Food Information Office, 1961, 1971, 1977, 1977). Around 1970, marketing campaigns had become a common health promotion tool (Food Information Office, 1977). The public remained less concerned with UDBs, as illustrated by negative reactions to the substitution of candy with fruit at the 1971 Sinterklaas celebration (Nieuwsblad van Het Noorden, 1971)

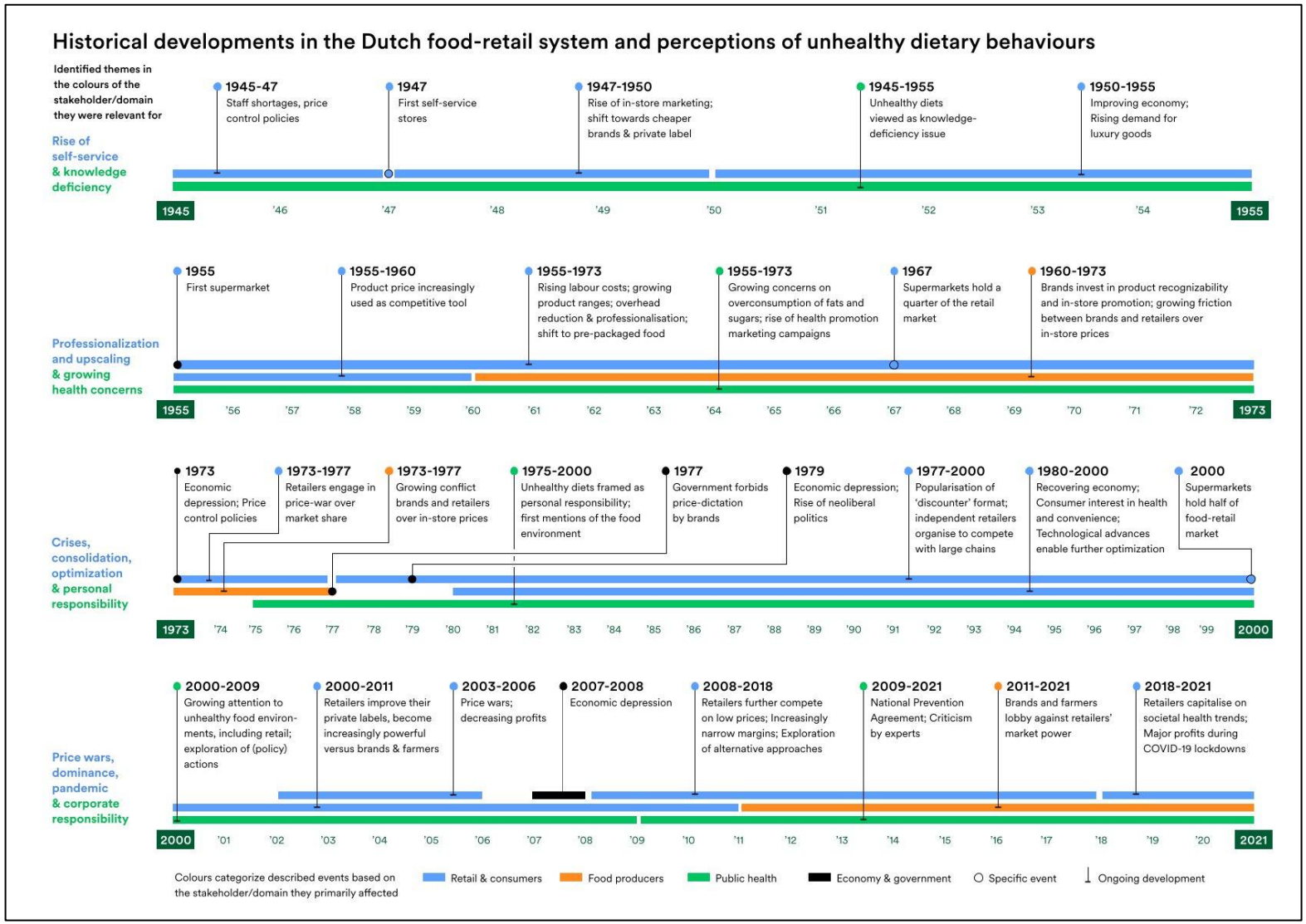

Figure 1. Historical developments in the Dutch food-retail system and perceptions of unhealthy dietary behaviours**.** Shown is a time-line of the historical developments in the shape of the Dutch food-retail system and perceptions of unhealthy dietary behaviours as a problem. Each section corresponds with one of the subheadings below.

4.13 1973-2000: Crises, Consolidation, Optimization and Personal Responsibility

In the 1970s, the Netherlands experienced major economic crises: The 1973 oil crisis led to major inflation, eliciting price-control policies from the government (Panikar, 1991; Rutte and Koning, 1998; Janssen, 2020). To secure a profitable market share, retailers engaged in a price-war, leading to frequent conflicts with brands over product prices (Rutte and Koning, 1998). By 1977, a governmental policy officially forbade brands from dictating in-store prices, to the benefit of retailers (Lubbers, 1977; Rutte and Koning, 1998; Sluijter, 2007).

By 1979 a second economic depression caused unemployment, poverty, and increasingly price-critical consumers, and consumer associations began to publish price-comparisons between retailers (CBS, no date; Panikar, 1991; Rutte and Koning, 1998; Langenberg and Nauta, 2007). This mostly benefitted discounters, and supermarket chains copied their low-pricing approach (Rutte and Koning, 1998). To compete with these larger, efficient, organisations, independent retailers consolidated under formulas and cooperatives (Rutte and Koning, 1998). An important consequence of the economic crises was a loss of trust in the Keynesian economic model, leading to the rise of the neoliberal political paradigm, emphasizing privatisation and market deregulation (Walraven, 2022).

From the 1980s onward, technological advancements enabled the collection and analysis of various kinds of data, which was used to optimise processes, spatial planning, and respond to consumer (Levensmiddelenmarkt, 1979a, 1979b, 1981, as cited in Sluijter, 2007; Rutte and Koning, 1998). Larger organisations such as formulas and chains used these advancements to professionalise substantially (Rutte and Koning, 1998). Technology (e.g., mobile fridges) also made store lay-out more flexible, enabling overarching corporations to dictate a coherent store lay-out strategy (Rutte and Koning, 1998). As welfare improved in the mid-1980s, consumer interest in health grew, leading retailers to offer light, no-additives, and similar products (Missets Distrifood, 1988, as cited in Sluijter, 2007). Furthermore, tasty ready-to-eat foods were increasingly stocked to capitalise the growing youth segment (Van Otterloo and Sluijter, 2000). By 2000, supermarket chains held more than half of the market (Erkens, 2002).

In line with the rise of individualistic neoliberal ideology, UDBs increasingly came to be perceived as a personal responsibility (Westmaas-Jes, 1975; Blokker, 1979; Walraven, 2022). This induced the development of interventions like tools for tracking dietary intake (Food Information Office, 1991), and direct information campaigns (Food Information Office, 1986; Hiddink, 2000). Discussions on the role of environmental factors in UDBs, such as marketing by the food industry and socioeconomic differences, slowly emerged (Haes, Schuurman and Sturmans, 1976; van den Ban, 1981; Hospers *et al.*, 1992), leading the Food Information Office to lobby for a marketing-code regarding health claims on food (Voedingscentrum, 1999). Despite broader collaborations with societal stakeholders, food retailers evaded the spotlights in discussions regarding UDBs (Food Information Office, 1996).

4.14 2000-2021: Price Wars, Dominance, Pandemic and Corporate Responsibility

Into the 21st century, retailers continued competing on prices, culminating in multiple price wars between 2003-2006 (Stikkelorum, 2017), which severely reduced profit margins (CBL, 2006). Retailers had continued to develop their private labels as a way to be less dependent on brands, which by 2011 represented over 27% of the market (CBL, 2012). Brands and farmers feared that retailers were becoming too dominant, and lobbied for sector-wide fair practices code, eventually established in 2021 (Schouten, Knops and Grapperhaus, 2021). The 2007-2008 financial crisis (Kalse, 2008) made Dutch consumers more frugal (CBL, 2012), again leading to further price reductions and lower profit margins among retailers. In following years, retail organisations shifted strategies to capitalise the growing interest in health (Coop Supermarkten, 2018; Jumbo, 2018). The COVID-19 pandemic was a blessing in disguise for retailers: As one of the few essential businesses permitted to remain open during month-long lockdowns (Ministerie van Justitie en Veiligheid, no date) the sector grew substantially (Ahold Delhaize, 2021). Meanwhile, consolidation had continued, the number of organisations had shrunk from 46 in 2000 to 18 in 2021 (Distrifood, 2022).

After 2000, food retail environments were increasingly framed as being obesogenic, and marketing and low pricing of unhealthy products became perceived as problematic in public health circles (Brug and van Lenthe, 2006; Dagevos and Munnichs, 2007; Klein *et al.*, 2007; Van der Klaauw and Poelman, 2018). Retailers could no longer avoid involvement, as researchers and public servants explored ways to make food retail environments healthier (Steenhuis and van Assema, 2004; Zondervan, Aramyan and Bakker, 2009). In response to these developments, the retail sector promised to help address obesity, by signing the Obesity Covenant, set up by the Ministry of Health, (VWS, 2005; CBL, 2006, 2012). The covenant led to sponsored sports activities, healthy school lunches, and a food-choice logo, introduced in 2012(CBL, 2006, 2012; Verhagen *et al.*, 2015). Notably, this logo was abolished only five years later, due to distrust from consumers, and criticism from consumer organisations and academics (Consumentenbond, no date; de Wolf *et al.*, 2013; Grimbergen, 2016).

By 2009, little progress had been made (Zondervan, Aramyan and Bakker, 2009), and the Ministry of Health organised a more ambitious National Prevention Agreement. Disappointingly, this only resulted in more promises of self-regulation and unambitious targets (RIVM, 2018; Lelieveldt, 2023). Despite the COVID-19 pandemic re-emphasized the

importance of general public health (de Ree, 2021), and promises from the government to explore policy measures such as a sugar tax (VVD et al., 2021), substantial steps had yet to be made by 2023.

4.2 Actor-Driven Analysis

The historical context that has emerged contextualises how stakeholders perceive the barriers for addressing UDBs in the Dutch supermarket regime and what they identify as underlying regime factors. We identified four major themes, visualised in figure 2.

4.21 Citizen-Consumer Paradox

The first major theme is that food retailers operate in a landscape where demand for unhealthy products is substantially higher than that for healthy alternatives. Although societal interest in eating healthier is perceived to be growing, this does not to translate to healthier shopping behaviours, as unhealthy products remain more popular and therefore profitable. This citizen-consumer paradox is perceived to be the result of the result of several factors. First, Dutch consumers, especially at lower socio-economic positions, generally buy inexpensive, tasty, and convenient food products, which are often unhealthy. Furthermore, these consumers are perceived to stick to a limited range of familiar products (often marketed heavily, and unhealthy), and rarely explore alternatives. This is likely exacerbated by the major cognitive burdens that are prevalent among lower socioeconomic groups (e.g., debts, housing), which limit the cognitive space to think and learn about healthier foods, and instead drive habitual and impulsive choices, which emphasize cost, taste, and convenience, leading to unhealthy choices.

4.22 Commercial Interests and Health Promotion

An important theme is that food retailers, being commercial entities, have a culture in which commercial success is the top priority. As a result, everything is organised to pursue this goal as best as possible with the available resources, by promoting and selling popular and profitable products. In the aforementioned consumer landscape, these are generally the (unhealthy) convenient, cheap, and tasty options.

There are several underlying factors. First, due Dutch consumers expectation of competitive prices, retailers are forced to operate on relatively tight profit margins, which require them to emphasize efficient use of resources (e.g., space, manhours) and high volumes of sales. As a result, there is little space for promotions and products that are not profitable, and little margin for risks. Second, to maximize sales volume, retailers aim to attract to the broadest possible audience, and thus rely on remaining neutral on polarized issues. Furthermore, several high-impact health-promotion strategies (e.g., price increases, removing products) are perceived as potentially antagonizing, and therefore a risk to commercial goals. Third, retailers often perceive health promotion efforts as ineffective in increasing the sales of healthier products, to make them more profitable. Retail participants cited negative previous experiences with health promotion experiments and examples from competitors as cautionary tales.

Strikingly, retailers and brands are perceived to increasingly use health as a marketing tool, capitalising on the rising consumer interest in this topic. This is likely motivated by increasingly tight profit margins, which make price-lowering unsustainable. Although attention for health seems to be rising among retailers, multiple participants warned that such commercially motivated health-promotion is often little more than window dressing with disappointing impact.

4.23 Competition and Regulation

Under the current consumer landscape, effective health promotion is perceived as commercially detrimental for retailers, as customers can switch to competitors. The common perception is that impactful changes can only be realized if the entire sector implements them collectively, thus limiting commercial risk. However, without policy measures to back such actions up, it is unlikely that all competitors will cooperate. As a solution, all participants argued that the Dutch government needs to step in to enforce a level playing field, in which health can be promoted with limited commercial risk. Unfortunately, governmental action seems as unlikely under the neoliberal political paradigm that dominates Dutch politics. This paradigm emphasizes individualism and personal responsibility, which extends to UDBs, which are considered a personal failure and not a governmental responsibility.

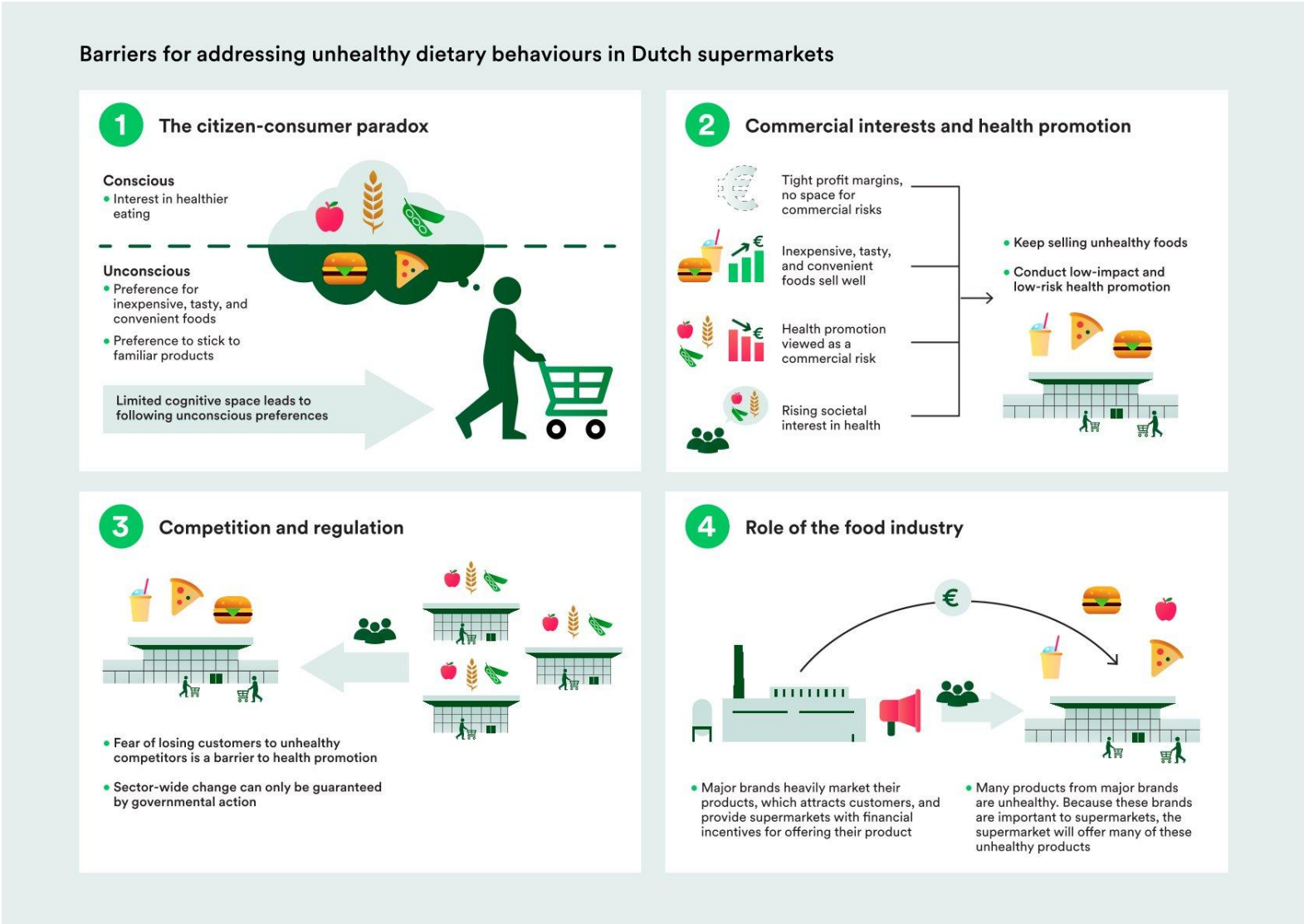

Figure 2. Barriers for addressing unhealthy dietary behaviours in Dutch supermarkets. Shown are the main barriers perceived by system stakeholders for addressing unhealthy dietary behaviours in Dutch supermarkets. Each section corresponds with one of the subheadings below.

4.24 Role of the Food Industry

The final theme is the influence of the food industry on the retail regime. Retailers are dependent on brands, whose products are often crowd-pullers fuelled by strong marketing campaigns. Meanwhile brands directly and indirectly finance retailers in exchange for the promotion of their products. This gives brands leverage to have retailers promote their products. Although brands are in a position to develop and market healthier products, the common perception is that the production and marketing of cheap and highly palatable unhealthy products is more profitable. As such, the influence of these brands is generally perceived as another driver of unhealthy food retail environments.

5 Discussion

This study addressed the two-part question Which systemic factors contribute to the current unhealthy food retail environments, how are these historically embedded in the system? These parts have been addressed, respectively (but in reversed order), by the findings of the actor-driven and historically-informed analyses. The following sections integrate these findings, link them to the broader literature, and discuss the way forward, based on these insights. Finally, the generalizability and strengths and limitations of the study are discussed.

5.1 The unhealthy consumer landscape

Our findings illustrate how decision-making in the Dutch consumer landscape has become dominated by product characteristics that favour unhealthy products, such as price and convenience (Del Giudice, Cavallo and Vecchio, 2018; Headey and Alderman, 2019; Bennett *et al.*, 2020), and in turn reinforce these same decisions, despite the fact that health is also reported to play a role (Del Giudice, Cavallo and Vecchio, 2018; Gustavsen, 2020). First, Dutch retailers started competing on price during times of economic hardship, acting on the needs of the public at the time. Such practices were rewarded (e.g., the success of price-fighters) and became standard practice, exacerbated by consumer organisations published price-comparisons. Over time these factors likely conditioned consumers to prioritise price in their decision-making, thus reinforcing the emphasis on pricing practices. Second, brands historically differentiated themselves through recognizable (e.g. highly processed, pre-packaged) products, which were often less healthy, and more convenient. Driven by marketing campaigns and decreasing food skills (Jabs and Devine, 2006), consumers became increasingly familiar with and dependent on these convenience products (Soliah, Walter and Jones, 2012; Hartmann, Dohle and Siegrist, 2013), which in turn made these products increasingly important for brands and retailers. These and similar self-reinforcing dynamics maintain a consumer landscape in which unhealthy products are commercially attractive to make and sell.

5.2 Commercial interest, driver or perverter

Intertwined with the demand for unhealthy products in the consumer landscape is the retailers drive for commercial success. As discussed above, price has become the main competition tool of, and preferred strategy by, Dutch retailers. While internal optimisation and professionalisation could have supported price-based competition for decades, retailers have gotten stuck in a race to the bottom where they are forced to offer lower prices to keep up with competitors and consumer expectations, while operating on increasingly narrow margins. Under increasing scrutiny for their role in promoting UDBs, retailers sought ways to capitalise on health promotion, while avoiding actual regulation (Piacentini, MacFadyen and Eadie, 2000; Jones, Comfort and Hillier, 2007a; Cuevas *et al.*, 2021), through the discourse of corporate social responsibility. Because health promotion is not the primary motivator, such strategies can easily turn into window-dressing or greenwashing, as observed in the literature, where commercial value is often prioritised over impact (Jones, Comfort and Hillier, 2007b; Cuevas *et al.*, 2021), self-regulations have low impact (Ronit and Jensen, 2014) and responsibility is shifted towards the individual (Magnusson, 2010) through information provision in overly complex or unclear ways (Scrinis and Parker, 2016; Del Giudice, Cavallo and Vecchio, 2018). The public also seems to notice this prioritisation of commercial interests and distrusts in-store health interventions (Mitra *et al.*, 2019; Harbers *et al.*, 2021), which harms their impact (Charlebois *et al.*, 2016; Nuttavuthisit and Thøgersen, 2017). In conclusion, retailers have little commercial incentive to effectively promote healthy choices, and instead often (mis)use it for merely commercial purposes.

5.3 The gridlocked market

These interlocked mechanisms have created a gridlocked regime (Rotmans and Loorbach, 2010; Van Raak, 2010). Dutch food retail has historically been a saturated and competitive market, which disincentivised commercial risks, and promoted consolidation. As a result, retailers generally refrained being the first to take action, to avoid losing customers to their competitors, similar to other contexts (Esbjerg *et al.*, 2016; Middel *et al.*, 2019). Our participants proposed that the government could break this gridlock by enforcing a level playing field for health promotion

activities through regulating current unhealthy practices, thus creating space for new (healthier) ways of food retailing to emerge by destabilising the current regime (van Oers *et al.*, 2021).

Unfortunately, this idea is at odds with the dominant Dutch political paradigm: Since the rise of the neoliberal thinking in the 80s, Dutch governments have preferred to let commercial actors self-regulate on the issue of UDBs. This is also motivated by the neoliberal view that UDBs are an individual problem and responsibility, as illustrated in our results. This directly illustrates the broader issue of neoliberal thinking presenting a barrier to addressing the systemic causes of UDBs, as has been discussed elsewhere (Lencucha and Thow, 2019; Barlow and Thow, 2021). This neoliberal perspective has been challenged in the past decades by emerging scientific evidence on the role of the environment (Brug and van Lenthe, 2006; Dagevos and Munnichs, 2007; Van der Klaauw and Poelman, 2018), lack of substantial self-regulations (Zondervan, Aramyan and Bakker, 2009), and persistence of UDBs among the Dutch population (van Rossum *et al.*, 2011). Nevertheless, it retains its dominance.

5.4 The power of brands

The historical perspective illustrates a long-standing relationship of power-struggles and co-dependency between retailers and premium brands. Although retailers sell a broad range of products, their offer is partially shaped by consumer demand, which in turn is driven by the marketing campaigns of major brands (Dhurup, Schalkwyk and Tsautse, 2018). As a result, retailers are indirectly stimulated by brands to market and stock (often unhealthy (Monteiro *et al.*, 2013; Neal *et al.*, 2013)) brand-products (Charlton *et al.*, 2015; Ravensbergen *et al.*, 2015). Clearly, the issue of UDBs is the result of a complex interplay of stakeholders.

5.6 The way forward

Our integrated findings illustrate a food retail system that is thoroughly gridlocked through self-reinforcing dynamics and power imbalances in a landscape which enables and rewards unhealthy food retail practices. Nevertheless, there are clear leverage points in this case. The self-reinforcing cycles of consumer behaviours in the Dutch landscape are prime targets for intervention, such as taxation policies that favour healthy products (Thow, Downs and Jan, 2014), or programs to improve food skills (McGowan *et al.*, 2017) and reduce dependency on convenience foods. Whereas educational programs seem feasible, regulatory actions such as taxes are contentious in the Dutch political paradigm, indicating that the problem of UDB has not yet destabilised the system sufficiently for radical changes (de Haan, 2010). Future shocks to the system (e.g., pandemics, economic crises) can provide a window of opportunity for change, and health researchers and advocates should be prepared to capitalise on such events. Finally, in the absence of governmental interference, the retailers themselves can play a pivotal role in coordinating change as gatekeepers between consumers and producers (Lemos and de Paula Castro, 2021). Doing so can be commercially beneficial for retailers, as their private label products are often healthier than those of brands (Beacom et al., 2022), while also improving customer loyalty and reducing dependence on brands.

To act on these leverage points, we recommend health researchers and professionals to: 1) further strengthen the evidence base for regulatory interventions that can break the cycles of unhealthy consumer behaviours, and prepare strong narratives to capitalise on system shocks, 2) explore ways to increase food skills on a societal level, 3) generating evidence on how systemic issues feed into these shocks, and 4) explore ways to leverage the power struggles between retailers and brands to reduce the ability of brands to push their unhealthy products to consumers, possibly through strategies involving healthier private label products.

5.7 Generalizability

Although this study was set up as an in-depth case study, its findings can be relevant for a broader context. The factors identified in the actor-driven analysis align closely with the observations of a systematic review on health promotion in various contexts (Middel *et al.*, 2019). Although the historical context between countries differs, the Dutch case provides in-depth examples of how relatively translatable dynamics (self-reinforcing consumer demand, the commercialization of health, neoliberal ideology, the role of major brands) can develop, and drive UDBs.

5.8 Strengths and Limitations

Strengths of this study are: 1) the combination of literature and interviews enabled cross-validation for identified factors of importance, and 2) the use of member checks and multiple researchers examining the coding of interviews strengthened internal validity.

We also observed some weaknesses. Firstly, there was relatively little white literature on the subjects of the historically-informed analysis, which could have limited the information-density of the analysis. This is arguably an inherent limitation of applying this methodology on a relatively niche subject and context. Secondly, the study prioritized the perspective of regime actors, which may be biased by the predominant ways of thinking in the regime regarding the

problem of UDBs. By including actors from interest groups and knowledge institutions, outside perspectives were included, but the perspectives of niche actors (e.g., healthy food retailers) would be valuable.

6 Conclusion

This study performed a system analysis on the emergence and modern-day role of systemic factors that contribute to unhealthy food retail environments in Dutch supermarkets. Four major themes were identified: the self-reinforcing consumer landscape that prioritises low prices and convenience; the prioritisation of commercial interests in the food retail regime and its perversion of health promotion efforts; the gridlocked food retail market and the role of neoliberal thinking in maintaining this situation; and the role of major food industry brands in creating consumer demand for and in-store availability of unhealthy products. These findings provide in-depth understanding on the emergence and dynamics of frequently observed systemic factors, which can inform future efforts to address these factors, or explore how these are historically embedded in other contexts.

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