

# Dietary Implications of Supermarket Development: A Global Perspective

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*Five decisions by supermarket operators have important dietary implications: the location of their outlets; the foods they sell; the prices they charge; the promotional strategies they use; and the nutrition-related activities they implement. These decisions influence food accessibility, availability, prices and desirability, which in turn influence the decisions consumers make about food. Based on a comprehensive literature review, this article finds that the dietary implications are both positive – supermarkets can make a more diverse diet available and accessible to more people – and negative – supermarkets can reduce the ability of marginalised populations to purchase a high-quality diet, and encourage the consumption of energy-dense, nutrient-poor highly-processed foods. Overall, the most universally applicable dietary implication is that supermarkets encourage consumers to eat more, whatever the food.*

**Key words:** supermarket, food retail, economic development, diet, food consumption, obesity, nutrition transition, food desert, sales promotions, food prices

## 1 Introduction

Supermarkets are a topic of the moment. In industrialised countries, their power in the food system is unprecedented (Vorley, 2003). In the UK, the top five supermarkets sold 69.3% of all groceries in 2007, up from 63.0% in 1999 and 29.4% in 1973 (Dawson 1995; Dobson et al., 2003; Competition Commission, 2008). In 1999, the top 10 food retailers in the EU-15 controlled 30.6% of the European grocery market, up from 24.5% in 1993 (Dobson et al., 2003). In the US, the largest five supermarkets controlled 48% of the market in 2005, up from 24% in 1997 (Hendrickson and Heffernan, 2007). In developing countries, supermarkets have been growing rapidly since the early 1990s, attracting consumers and transforming agrifood systems (Reardon et al., 2003). Worldwide, growth continues apace. The number of Wal-Mart outlets alone increased by 50% between 2001 and 2005 from 4,189 to 6,287 (Euromonitor, 2005a). But as

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consumers have flocked through their doors, many in civil society have voiced concern about the effects of supermarkets on small stores, suppliers, small farmers, the environment, labour standards, local economies and public health (for example, Raven et al., 1995; Blythman, 2004; Reardon and Berdegué, 2002; Food Ethics Council, 2007; Hearson and Eagleton, 2007; Dibb et al., 2008). Supermarkets are now responding to some of these concerns by formulating environmental and sustainable development programmes.

This article examines a hitherto under-researched aspect of supermarkets: what are their dietary implications? There is as yet no clear answer, but the question is becoming more pertinent as supermarkets become ever more important gatekeepers of the food supply, and as diet-related diseases and associated risk factors (heart disease, some cancers, obesity) become an ever-increasing burden on a global scale (World Health Organization, 2005). In developing countries, it has been suggested that the growth of supermarkets – and the processed foods they sell – is a driver of the ‘nutrition transition’ to diets high in high-calorie, nutrient-poor foods (Popkin, 2006). In Europe and North America, supermarket development has been blamed for ‘food deserts’ – the closure of small stores in the face of supermarket competition, leaving deprived areas with little access to healthy foods (Acheson, 1998). In the UK, supermarkets are now under scrutiny for their ability to deliver on health (Dibb, 2005, 2006; House of Commons Health Committee, 2004; Lang et al., 2006). Leading chains are now responding through initiatives such as front-of-pack nutrition labels, salt reduction in own-brand products, and promotion of fruit and vegetables (Dibb et al., 2008).

Supermarket development has been, and still is, in part a response to changes in the habits, demands and preferences of consumers. But, as argued in this article, it has also affected the decisions consumers make about food (Clarke, 2000). Following the ‘ecological’ model of understanding food choices and obesity, supermarkets are part of the physical and economic environment in which people make food choices, an environment that conditions, or at least reinforces, consumer food choices (Swinburn et al., 1999; Story et al., 2008). Supermarkets are, accordingly, in the words of Dawson (1995), ‘both reactive and proactive agents in the process of consumer choice’. Specifically:

Whilst the decisions on the product range, location of sales point and sales method of retailers reflect the perceived needs of consumers, they also reflect the strategies and policies of the food retailers as profit-seeking organizations ... Whilst retailers respond to the culture of consumers and provide goods which are expected in a way which is acceptable, nonetheless the retailers also extend the horizons of consumers by presenting them with new products sold in new ways ... The decisions by retailers on which products to sell circumscribe the choices which the consumer can make in respect of the what, where and how of food purchasing. A substantial part of the consumer’s food purchase experience is determined by the retailer. Retailers, therefore, are both reactive and proactive agents in the process of consumer choice. (Dawson, 1995: 77)

This article examines the dietary implications of supermarket development over the past 25 years. It builds on previous reviews that deal largely with access to

supermarkets (Cummins and McIntyre, 2006; White, 2007; Ford and Dzewaltowski, 2008) by taking a global, multidisciplinary perspective, bringing together a wide range of diverse literatures and considering a range of different pathways between potential cause and effect. To do so, the article identifies the major *strategic decisions* made by *supermarket operators* about their business operations that affect the decisions *consumers* make about food, and the *supply-side drivers* of those supermarket decisions. The article focuses on *decisions* as a means of emphasising the active agency of change, on *supply-side drivers* as a means of examining the role of supermarket decisions relative to consumer decisions and on *supermarket operators* (i.e. the corporate entity operating the supermarket) as a means of focusing on the decision-makers rather than just the physical outcome of their decisions (i.e. the supermarket outlets and their characteristics). This overall approach is taken because it is informative from a health policy perspective: it enables regulators, supermarket operators and consumers to identify the decisions they need to influence/change on the supply side in order for the food retailing sector as a whole to play a more effective role in promoting healthy diets.

The article focuses on the decisions made by larger, multinational supermarket chains rather than small, independent supermarkets, since it is the larger chains that are driving the development process. All these market leaders are headquartered in the US and Europe but have a strong global presence (Table 1). The article takes into account the different types of supermarket formats, particularly the distinction between traditional and ‘non-traditional’ outlets, so overcoming one of the limitations of much of the literature in this area, which tends to define ‘supermarkets’ rather generically as homogeneous entities, with little consideration of the role of different formats (Table 2). Though the article draws on literature from around the world, it draws most extensively on the contexts for which most information is available in the English language – the US and the UK.

**Table 1: Supermarkets: Top 10 global market leaders by sales, 2006**

Food retailers (country of origin)	Total sales, US\$ bn
Wal-Mart Stores (US)	312.4
Carrefour (France)	92.6
Tesco (UK)	69.6
Metro Group (Germany)	69.3
Kroger (US)	60.6
Ahold (The Netherlands)	55.3
Costco (US)	52.9
Rewe (Germany)	51.8
Schwarz Group (Germany)	45.8
Aldi (Germany)	45.0

Source: Hendrickson and Heffernan (2007).

**Table 2: Definition of supermarket and food retail formats**

Category	Type of food retailer	Description
<i>Supermarkets</i>		
Independent supermarkets	Conventional supermarket	Usually ranging in size from 400 to 2,500m <sup>2</sup> , carrying all major foods, household goods & some personal care products; different from chain supermarket because it is independently owned
	Traditional chain supermarkets	Usually ranging in size from 400 to 2,500m <sup>2</sup> , carrying all major foods, household goods & some personal care products; different from 'independent supermarket' because it is part of a big chain
Non-traditional supermarkets	Superstore	Very large, carrying more food items, in-store bakeries, meat, cheese & fish departments & a significant amount of general merchandise & other services
	Warehouse store	'No frills', with limited product variety & services with by-the-case shelving
	Hypermarket	Over 2,500m <sup>2</sup> with large product variety, in-store bakeries, etc., prepared foods & general merchandise & services; food & non-food grocery represent around 60% of sales; often an anchor store in out-of-town shopping centres
	Natural food supermarket	Focuses on high-value products associated with ecological & health benefits, such as organic produce, free-range poultry & packaged products high in fibre, low in salt, etc.
	Hard discount stores, also known as limited-line or limited-assortment discounters	Relatively small store typically 300-900m <sup>2</sup> , stocking less than 1,000 product lines, largely in packaged groceries. Tends to look austere, more frugal, with practical furnishing & lower prices. Merchandise may be displayed with the original manufacturer's packaging to reduce the cost of removing it. Goods are mainly private label or budget brands.
Soft discounters, also known as extended-range discounters	Slightly larger, but with the same more frugal characteristics. Typically stocks 1,500-4,000 product lines. As well as own-label & budget brands, commonly carries leading brands at discounted prices.	

**Table 2: Cont'd**

Category	Type of food retailer	Description
	Warehouse club stores	Membership-based wholesale-retail hybrid outlet serving both small businesses & individual consumers; includes food in larger & multi-pack sizes & general merchandise
	Supercentres	Large combination supermarket & discount general merchandise store (food & non-food grocery accounts for up to 40% of selling area)
<i>'Traditional' retailers</i>		
Small grocery stores	Independent store	Small store usually specialising in packaged foods
	Convenience store	Small store selling a limited variety of food & non-food products, open long hours
	Specialised foodstores	Small store specialising in one product or a limited range of specialty products, such as bread, meat, fish, vegetables & delicatessens; may be full- or self-service
	Kiosks/hawkers/peddlers	Small permanent or mobile stand with a small range of often fresh foods serving sidewalk traffic
Traditional markets	Farmers' markets	Usually open-air market selling fresh & some prepared foods direct from farmer to consumer
	Street markets/fairs	Mobile, open-air market focused on fresh foods that moves from place to place on a regular schedule
	Plaza markets	Open-air or covered market in town centres or neighbourhoods with rows of small retailers
Other non-traditional food retailers	Gas stations, liquor stores, & drugstores	Sells a limited variety of packaged & prepared foods
	Non-store retailers	Includes vending machines & direct door-to-door sales

Source: Adapted from Kaufman (1998; 2002); Reardon and Berdegué (2002); Euromonitor (2005c).

## 2 Methods

The review involved two components, which brought together literature from a wide range of disciplines from both developed and developing countries. The first review gathered evidence about the nature of supermarket development, focusing on the strategic decisions made by supermarket operators. Evidence was garnered from four different sources: (i) annual and financial reports published by the leading operators worldwide, predominantly the top three (Table 1). These were largely available from the operators' websites, and were available for a range of years; (ii) market research reports on strategies, including the retailing reports published by the market research firm Euromonitor between 2003 and 2006; (iii) academic literature on retailing strategies, largely from the disciplines of economics, business studies, geography, planning and marketing science. This literature was searched using the abstract term 'supermarket' in the databases ISI Web of Science, CAB Direct, Emerald and EconLit, for the years 1990-2007, plus the search engine for the Environment and Planning journals (<http://www.envplan.com/search.cgi>) using the term 'supermarket' and 'food retail'; (iv) reports from governments and non-governmental organisations (NGOs) on various aspects of supermarket retailing. The outcome was a large quantity of literature dealing with a wide range of countries.

The second review gathered evidence on the relationship between supermarkets, food access, availability, prices, diets and obesity. The search was conducted through a structured systematic review, involving a search of three electronic databases that cover the literature on health and social sciences: PubMed, ISI Web of Science, and CAB Direct (1980 through to June 2006).<sup>1</sup> The outcome was a small number of papers (22) largely pertaining to the relationship between supermarket outlets and food access. To identify the research published since 2006, a further search was conducted of PubMed in May 2008.

## 3 Core decisions with dietary implications

From the literature it emerged that five core decisions made by supermarket operators about their business operations have important implications for diet: the location and format of their outlets; the foods they sell; the prices they charge; the promotional strategies they use; and the nutrition-related activities they implement. The dietary implications of these decisions are summarised in Figure 1. All of the decisions seek to achieve the broad strategic aim of increasing profits. More specifically, they seek to increase in-store sales by: (i) attracting consumers away from rival stores; (ii) encouraging more frequent visits; and (iii) increasing the amount spent per customer transaction. These decisions – while often taken at a national or international level – are important because they affect consumers at the *local* level, the level at which decisions about food are made (Clarke, 2000). They affect decisions consumers make between and within stores (Clarke et al., 2006; Jackson et al. 2006).

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1. The methodology used for this review can be obtained from the author.

### 3.1 Supermarket location and format

#### Decisions and drivers

Location is a critically important decision for supermarket operators. 'The choice of a store's location is considered to be the single most important decision a retail organization has to make', say Clarkson et al. (1996: 22), 'and location is seen as a critical factor for success'. The decision is driven by factors of both supply and demand. On the supply side, factors such as access to transportation routes, cost of land, the presence of competitors and the regulatory (dis)incentives are important. On the demand side, the nature of the customer base in the catchment area – their demographic and socio-economic characteristics – is key (González-Benito and González-Benito, 2005). These decisions affect the location not only of the supermarket outlet, but also of their competitors, since they may subsequently be faced with a *delocation* decision (i.e. to close). Locational strategies may also involve buying out competitors to penetrate new locations.

A key aspect is not just *where* to locate, but *what format* of store to locate where. Traditionally, supermarket outlets ranged in size from 400 to 2,500m<sup>2</sup>. Now, there is a far wider range, including huge supercentres and warehouse formats, medium-sized 'discount' stores and smaller stores in locations like city centres and petrol stations (Table 2). Operators have developed these outlets as a means of increasing the flexibility of their location strategies. For example, realising that 'no single format can reach the whole market' and to increase their 'flexibility and responsiveness', leading operators Tesco and Carrefour have adopted a 'multi-format' strategy, with different 'non-traditional' formats targeted at different catchment areas (Tesco, 2006; Carrefour, 2004a).

Location decisions have changed over time. The most successful operators have outmanoeuvred their competitors by responding to changes in the key drivers and adapting their location strategies to changing market conditions. Over the past 25 years, they have made three core strategic decisions in response to changing drivers and conditions, albeit to differing degrees between different markets: locating out of town, relocating in town centres and at edge-of-town centres, and locating abroad.

The start of supermarket development in Western countries began with location in urban areas. This changed in the 1950s-60s in the US, when operators deliberately located in the new, wealthier suburbs, while also buying up independent supermarkets in urban areas. In Europe, the out-of-town trend began in the 1980s (Poole et al., 2002). In both continents, the decision was driven by major incentives: cheap land, easy delivery access, higher spend per store, economies of scale and wider catchment areas.

The out-of-town move was accompanied by the decision to expand store size, a trend that became more pronounced in the 1990s, particularly in the US. Wal-Mart led the way, successfully increasing its number of 'supercentre' formats in out-of-town locations between 1994 and 2001 from 68 to 888 (Wal-Mart, 1994; 2001). Overall the share of sales from traditional formats declined between 1998 and 2003, while that from supercentres, warehouse clubs and other non-traditional formats grew from 18% to 31% (Leibtag, 2005). A result of the move out of town and larger stores was a decline of smaller stores in urban areas and poorer neighbourhoods where larger chains closed the less profitable stores they had previously operated (Eisenhauer, 2001; Kaufman, 2002). The number of supermarkets in major metro areas declined by around 20% between

1980 and 1990, and by 1995 the poorest 20% of urban neighbourhoods had 44% less retail supermarket space than the richest 20% (Eisenhauer, 2001; Nayga and Weinberg, 1999). In the UK, as the number of out-of-town superstores grew from 21 to 719 between 1971 and 1992, over 100,000 retailers closed their doors, a trend echoed in many other (albeit not all) European countries (Dawson, 1995; Poole et al., 2002).

The second core decision was then to relocate in town and the edge-of-town centres. In the 1990s, European operators faced a series of external pressures. The market was close to saturation and planning legislation restricted the number of out-of-town locations available. Legislation to control out-of-town development in order to protect small stores was passed as early as the beginning of the 1970s in France and Italy, and most countries added or tightened restrictions throughout the 1990s (Poole et al., 2002). Analysis in the UK suggests that the total focus on out-of-town locations had also led to land overvaluation and asset depreciation (Wrigley, 1998). Operators in Europe responded by locating stores in city centres, taking advantage of the lower costs of reinvestment coupled with high sales densities (Euromonitor, 2005c; Wrigley, 1998). This usually took the form of opening smaller stores (for example, Tesco Metro in the UK), or purchasing convenience store chains with outlets in locations ranging from city centres to small villages (for example, 8 à Huit by Carrefour in France). Medium-sized 'discounters' such as Aldi and Lidl in Germany also grew fast during this period, often locating in edge-of-town centres. In some countries, leading operators responded by investing in their own 'discounters' close to the edge of towns (for example, Carrefour's 'Ed' brand). Supermarket operators also invested in stores in novel locations like petrol stations and motorway service stations.

The third decision, this time with global implications, was to locate abroad. The relatively limited opportunities for market growth in the 1990s in the US and Europe stimulated a search for new markets overseas. This decision was also a response to strong pull factors in many developing countries: the liberalisation of rules on foreign direct investment, rapid urbanisation, a growing middle class and ample room for market expansion. European and US operators invested in each others' markets (for example, US-based Wal-Mart purchased Asda in the UK, and Belgium-based Delhaize bought Food Lion and Hannafords in the US), but, more significantly, they poured investment into developing countries. This so-called 'supermarket revolution' took place in waves (Reardon et al., 2003). According to the typology of Reardon and Timmer (2007), 'first-wave' countries experienced supermarket-sector 'take-off' in the early to mid-1990s, including much of South America and East Asia. In these countries, the average share of supermarkets in food retail went from roughly 10-20% circa 1990 to 50-60% by the early 2000s (Reardon and Berdegué, 2002). The second-wave countries include Mexico, much of South-East Asia, Central America, and Southern-Central Europe. In these areas, the share went from circa 5-10% in 1990 to 30-50% by the early 2000s, with the take-off occurring in the mid to late 1990s. In the third-wave countries, such as several Eastern/Southern African countries, India and China, the take-off started only in the late 1990s or early 2000s, reaching 5-20% of national food retail today. In contrast to the gradual evolution of different store formats in the US and Western Europe, supermarket growth in developing countries has been much faster, and included the development of a wide range of formats at the same time (for example, traditional outlets, hypermarkets and discounters).

Once within developing countries, supermarket operators generally made the decision to locate in the more affluent, rapidly urbanising cities which provided access to dense concentrations of relatively affluent consumers amenable to large-scale formats, while also catering to consumers with lack of access to transportation and used to the tradition of frequent shopping trips. In China, for example, where most urban people shop for food by bicycle or on foot, Carrefour has successfully located in dense urban locations (which has proven more successful than Wal-Mart's out-of-town strategy) (Euromonitor, 2004a). As in developed countries, as development proceeded, operators adapted their location strategies to changing conditions. In Thailand, for example, they initially targeted prime urban locations but, facing high land values and congestion in central Bangkok, have now redirected efforts towards out-of-town locations (Euromonitor, 2004b).

Supermarket operators are now also expanding into less affluent locations in developing countries, a shift facilitated by their multi-format strategy. Take the case of Brazil. In 2001, Carrefour (the second largest operator in Brazil) opened 17 'Dia%' discount stores in São Paulo with 'remarkable' success, and has since opened many more (Carrefour, 2001; 2002; 2003; 2004b). Growth has been faster and produced more profit than traditional formats, which is attributed in part to their location in areas of dense traffic in city centres and on town fringes (Carrefour, 2004b).

As in developed countries, traditional small grocery stores in developing countries now face competitive pressures from the supermarket chains (Euromonitor, 2005c). Evidence from some countries suggests that this is leading to store closures (Table 3). Supermarket operators are also closing less profitable stores. Following Brazil's financial crisis in the early 2000s, operators took the decision to close less profitable stores to retain profitability: the number of chain supermarkets actually declined from 3,961 in 1996 to 2,962 in 2002 (Farina et al., 2005). In some countries, governments are responding with restrictions on large supermarket development. For example, in Argentina, Ley 12,573 regulates the opening of large supermarkets in the centre of Buenos Aires in order to protect small stores.

**Table 3: Examples of decline of traditional retail in developing and transitional countries**

Place	Estimates of decline	Reference
Thailand	In 2004, estimated that between 25,000 & 27,000 small retailers are closing their doors each year	Euromonitor (2004b)
Moscow	Food sales from street markets fell by 9% between 2001 & 2002, a year of particularly rapid retail expansion	Euromonitor (2004c)
Argentina	Share of total retail from traditional retailers fell from 56% to 19% between 1984 & 1999	Rodriguez et al. (2002)
Brazil	Percentage of retail sales from supermarkets & hypermarkets rose from 72.5-76.7% between 1999 & 2003, with share of small grocery stores falling from 16.8% to 14.4%	Euromonitor (2005b)

The net outcome of these decisions has been twofold. First, on a global scale, there are now more supermarket outlets with more formats in more places. Recent developments have advanced this trend even further: supermarkets, by virtue of the Internet, can now locate, as it were, inside people's homes. Second, there has been a decline of 'traditional retail', i.e. independently owned, often smaller, stores and markets.

### Dietary implications

In deciding where to shop, consumers are strongly influenced by how far they must travel (Clarke, 2000). Thus as more supermarket outlets have opened in more places and traditional stores have closed, consumers have switched to shopping at supermarket outlets. Indeed, data show a clear global convergence towards greater shopping at supermarket outlets (Regmi et al., 2008). The dietary implication is that these consumers are now affected by the foods supermarkets sell, the prices they charge, the promotional strategies they use, and the nutrition-related activities they implement, as discussed in Sections 3.2-3.5 below.

A second implication is that some consumers – often of lower socio-economic status and/or less mobile – may find that their decisions about where to shop are more constrained as a result of supermarket-location decisions. In the phenomenon known as 'food deserts', the decline of traditional retail and closure of supermarket outlets mean that people in certain neighbourhoods have inadequate access to stores selling food. In the US, robust, high quality studies show that people living in poor and/or African American neighbourhoods have less access to supermarket outlets compared with wealthier, white neighbourhoods (Baker et al., 2006; Block et al., 2004; Moore and Roux, 2006; Morland et al., 2002; Zenk et al., 2005). Evidence from other developed nations is more mixed, with studies showing in some cases that poorer areas are disproportionately less well-served by supermarket outlets than more affluent areas (for example, Guy et al., 2004; O'Neill, 2005; Larsen and Gilliland, 2008), but others suggesting there is no systematic bias against poor areas (Apparicio et al., 2007; Cummins and McIntyre, 2006; see also review by Ford and Dzewaltowski, 2008).

Where consumers are less well-served, the dietary implication is that they are more likely to consume a lower quality diet than those in other neighbourhoods. This hypothesis is supported by high quality epidemiological studies from the US, which show that reduced access to a supermarket outlet is associated with some measure of reduced diet quality among vulnerable sub-populations (Laraia et al., 2004; Morland et al., 2002; Rose and Richards, 2004). The most recent study shows that people with no supermarket outlet close to their home are 25-46% less likely to have a healthy diet, regardless of socio-economic status (Moore et al., 2008). Evidence from the academic literature up until 2006 was insufficient to provide firm conclusions about a link between access to supermarket outlets and obesity, although more recent studies by advocacy groups have concluded that people who live near an abundance of fast-food restaurants and convenience stores compared with supermarkets and fresh produce vendors, have a significantly higher prevalence of obesity and diabetes (California Center for Public Health Advocacy, 2007; CCPHA et al., 2008). Evidence from other countries is again more mixed. Though several studies do indicate that lack of

supermarket access is associated with poorer diets, others, including a unique quasi-experimental study conducted in Scotland (Cummins et al., 2005), suggest that access to supermarket outlets, and food retailers more generally, does not have a profound effect on food consumption and diets (Cummins and Macintyre, 2006; Wrigley, 2002; White, 2007; Pearce et al., 2008).

In developing countries, the rapid growth of supermarkets is now also affecting the viability of independent grocery stores and local markets (Table 3). But these stores remain the dominant source of food for the lower-income urban population (Euromonitor, 2004d). Even in a 'first-wave' country like Brazil, independent retailers still make up over 80% of all food retail stores in the country (Farina et al., 2005). 'Wet markets' are also still widely used. Smaller stores and local markets are attractive to lower-income consumers partly because of their location, since close proximity translates into significantly lower 'total purchasing costs' for poorer consumers (D'Andrea et al., 2006a; 2006b). It has thus been argued that continued patronage by lower-income consumers will enable these stores to remain competitive in the face of supermarket development (D'Andrea et al., 2006a; 2006b; Farina et al., 2005). On the other hand, the aggressive expansion of discounters in some contexts deliberately targeted at lower-income consumers may provide stronger competition. Whichever way, there is little doubt that supermarket development is changing the competitive retail landscape in developing countries and therefore inherently affecting the decisions consumers make about where to shop.

### ***3.2 Foods sold by supermarkets***

#### **Decisions and drivers**

In making decisions about what foods to sell, supermarket operators aim to attract customers away from competing stores and increase the amount spent per transaction. As put by Carrefour (2004b: 52): 'To persuade customers to visit the hypermarkets more often they must set themselves apart from their local competitors ... in their product mix'. The crucial strategic decisions are which product categories to sell and the degree of space allocated to each ('category allocation'), and how many product lines within each category, including which new products to introduce and which old ones to drop ('product variety'). The key decisions made by the leading operators over the past 25 years have been to: (i) initially focus on the processed foods category, followed by diversification into other categories; (ii) increase the number of product lines; (iii) sell a more *efficient* assortment of categories and products more closely aimed at the target market.

The increase in the number of categories and products on sale has been central to the 'one-stop shopping' concept that has transformed retailing in the developed world. Consumers have been tempted away from the tradition of shopping at many small stores and markets by the 'convenience' of shopping for all goods in one place, a change facilitated by (and in many cases the driver of) larger store formats. In the US, the number of products offered per store increased from about 14,145 in 1980 to over 49,225 by 1999 (Food Marketing Institute, cited in Richards and Hamilton, 2006).

Increasing the number of products has taken two forms: diversification of categories and expansion of the number of product lines within these categories. Each decision has taken a specific trajectory. Early in the development process, operators tend to focus on packaged, processed foods – a strategy currently visible in the developing world, where market entry is characterised by high shelf-allocation to such foods (Reardon et al., 2003). The same was once the case in Europe and the US, but in the 1980s/90s operators started to increase the number of categories in earnest, expanding into more minimally processed goods such as dairy products and cut and packaged meat, then into fruits and vegetables and fish. This was followed by fresh bread, chilled packaged meals, products prepared in ‘delis’, and then non-food items. As of the mid-2000s, supermarket operators began to diversify even further, into services (for example, insurance, etc.).<sup>2</sup> This trajectory is now being followed by operators in developing countries, albeit at a much faster rate (Reardon and Gulati, 2008). That the aim is to attract customers from rivals is evinced by the expansion into fresh products, in which traditional ‘wet markets’ still hold the competitive edge. In China, for example, supermarket operators initially focused on packaged items, but are now increasing fresh produce sales by ‘matching wet market prices and offering superior quality and sanitation’: Chinese supermarkets now sell roughly \$4 bn worth of fruits and vegetables a year (Gale and Reardon, 2006). The strategy is not just aimed at out-competing other retailers: by selling prepared foods, supermarket operators are also competing with the food-service sector, and in selling services, with the service sector.

As the number of categories expanded, operators also introduced new product lines, a strategy seen as core to increasing sales. For example, facing pressure to increase revenues in the mid-2000s, the discounter Aldi increased its product assortment in Germany from 650-900 to 700-1,000 ‘to create consumer interest and impulse buys’ (Euromonitor, 2005b). In Brazil, the number of new product launches increased 200% between 1994 and 2000, the period of most intensive supermarket expansion (Farina and dos Santos Viegas, 2005). There is now more variation not just in the type of products, but in flavours, brands and packages. This reflects the increasing variety produced by food manufacturers; supermarket operators are well-placed to deliver the increasingly segmented and targeted products produced by the food-processing industry (Hawkes, 2006). But it also reflects the development of products at the instigation of supermarket operators, such as package sizes that more easily fit the shelf space, and, most notably, of own-brand products.

In line with their decision to diversify store formats, the most recent decision of leading operators has been to sell a more *efficient* assortment of categories and products. This involves selling a product mix that most efficiently fits the selling space available and the target market. In many cases, this has involved selling more products to target different niches in a broad consumer base. But, in some cases, it has meant reducing the number of categories and products available. Discounters, for example, stock only a few hundred products, largely dry grocery goods usually targeted at lower-income consumers, with limited fresh, frozen and chilled items. City-centre outlets also have fewer, but more targeted product lines, focusing on high-value products like pre-cut

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2. Wal-Mart is an exception in that it entered the food market after becoming dominant in non-food consumer goods.

vegetables and chilled ready meals targeted at wealthier, time-scarce consumers. The objective of more efficient variety is to gain the most profit from the available selling space, but it can also be to offset the sometimes negative impact of excessive variety on consumer purchases. Consumer research has shown that a wide variety can make the selection process more confusing and time-consuming (Kahn and McAlister, 1997), and, in the case of lower-income consumers, reinforce feelings of having to do without. Thus in these cases, it is the most *efficient* rather than the *greatest assortment* that encourages sales.

The decisions to expand and increase the efficiency of category and product selection were driven and enabled by a series of developments on the supply side. Procurement considerations affected the decision to specialise initially in packaged foods and then to diversify. As explained in more detail by Hu et al. (2004), leading operators favour centralised procurement systems as a means of gaining economies of scale, reducing the costs of co-ordination and increasing their bargaining power over suppliers, thereby cutting costs. This involves shifting away from store-by-store procurement to centralised warehousing to serve all outlets in a chain. Of relevance here is that, as noted by Hu et al. (2004: 572):

the move to centralisation does not always occur at the same time for all products, but is often implemented gradually. The shift tends to occur first with non-foods and processed foods that are easily stocked. Logically, it is easier to centralise the procurement of products that do not require strict temperature control and have none of the challenges inherent in the handling of fresh products.

Thus, as profit-seeking entities, supermarkets have most to gain by initially specialising in the products for which they can most easily cut costs: packaged processed food. In addition, it is relatively easy to enhance efficiency by dealing with the large suppliers of packaged foods, such as transnational food manufacturers. For this reason, the development of supermarket outlets in the developing world has proved a boon to foreign food companies wanting to expand into new markets.

Product selection has likewise been influenced by supply-side drivers, notably the series of technological and management changes that occurred in the US and Europe from the 1970s onwards. Changes particularly relevant to product selection were the adoption of barcode scanning, Efficient Consumer Response and loyalty cards. The adoption of barcode scanning technology in the 1970s and 1980s provided, for the first time, timely, accurate and highly detailed data on product movement throughout the supply chain (Seth and Randall, 2005). The possession of this information gave operators the ability to centralise and automate ordering and distribution, thus increasing the efficiency of inventory management and providing new powers to dictate conditions to their suppliers. Subsequently developed IT technologies, such as Electronic Data Interchange (EDI) and Electronic Point of Sales (EPOS), continued to increase the efficiency of supply chain management.

These technologies enabled the development of one of the most important management tools in the history of supermarkets: 'Efficient Consumer Response' (ECR). Developed in the 1980s and 1990s, ECR is a system of greater co-ordination

and collaboration between retailers and suppliers. It aims to maximise profits per category by 'improving and optimising aspects of the supply chain and demand management to create benefits for the consumer e.g. lower prices, more choice variety, better product availability' (ECR Europe, 2007; Bhulai, 2007; Dhar et al., 2001). Three elements of ECR have particular implications for product selection: the aforementioned 'efficient technologies' (for example, barcodes) that cut procurement costs and enable the operator to dictate the conditions of supply; 'efficient product replenishment' that increases the efficiency of the flow of products from suppliers to the supermarket shelves; and 'category management'. Category management has particularly important implications, given its objectives. Individual items are grouped into categories, defined on the basis of consumer perceptions (King and Phumpiu, 1996). Each category is then managed to 'maximize the effectiveness of the demand creation process' through optimum product variety, new product introductions, product promotions and efficient assortment (Bhulai, 2007).

The adoption of barcode scanning and ECR facilitated the expansion and increased efficiency of product selection in several ways. First, it enabled operators to manage larger inventories more easily. Tesco, for example, was able to increase its number of stock-keeping units from 5,000 to 40,000 between 1983 and 1996 as a direct result of increasing supply chain efficiencies (Seth and Randall, 2005). Second, it enabled closer co-ordination with suppliers, so that operators could demand a proliferation of products to fit their specifications (Dawson, 1995; King and Phumpiu, 1996). The clearest example of this is the development of own brands, in which operators source private-label brands direct from mainstream food manufacturers to fit their precise specifications. For fresh foods, too, operators now demand from producers numerous different varieties, packages, and 'qualities' of fruits, vegetables and meats, a process that increasingly involves the use of private quality standards (Henson and Reardon, 2005). With both packaged and fresh foods, supermarket operators are also now more able to refuse to stock products from producers and manufacturers if they fail to meet certain criteria (such as quality, price-points), and, in the US at least, if they do not pay 'slotting fees' for new products.<sup>3</sup> Third, ECR provided a management mechanism (category management) that increased the ability of supermarket operators to meet and create demand for new products more closely and efficiently targeted at different groups of consumers. The whole process was facilitated by changes in food manufacturing technology that reduced set-up and change-over costs, 'making it less expensive to schedule shorter production runs of a larger number of products and product sizes' (King and Phumpiu, 1996: 1181-2).

The third key decision was the adoption of loyalty cards in the 1990s. Loyalty cards allowed operators to gain valuable market research data from consumers, so providing the resources for more sophisticated analyses of consumer preferences and buying patterns (Dawson, 1995; King and Phumpiu, 1996). Carrefour, for example, uses the data obtained from loyalty cards to pursue what it terms 'geomarketing': adapting its

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3. Slotting fees are 'one-time payments a supplier makes to a retailer as a condition for the initial placement of the supplier's product on the retailer's store shelves'. They are used to defray the cost of the introduction of new products, and thus increase the incentive for the supermarket to stock the product (Federal Trade Commission, 2003: 1).

product assortment and variety in its stores to the characteristics of the customers living in the catchment area (Carrefour, 2004b). As explained by Euromonitor (2004e): ‘As well as the demographic and lifestyle information afforded by the application form (employment, number of children, etc.), every time a loyalty card is swiped at the checkout, details of exactly what a consumer has bought can be transferred to complex databases which are analysed for trends. This information is then used to develop both new and established products.’

The net effect of these technology and management changes is that supermarket operators have gained greater control of the products they sell. No longer are they passive recipients of products from wholesalers and manufacturers, but active agents in control of their supply chains with intimate knowledge of their consumers. They can now more easily sell more products, introduce new products, and more efficiently target them to consumers. Thus supermarket operators now have the means and the power to both predict and supply ‘what consumers want before they realise it themselves’ (Seth and Randall, 2005: 2), thereby meeting and *creating* consumer demand. It is an approach they brought with them when they entered the developing world (Belik and dos Santos, 2002).

### Dietary implications

Through their sophisticated decisions about what foods to sell, supermarket operators aim to attract consumers away from rival stores and to affect their decisions once inside the store. When consumers walk around a supermarket outlet, they make a mix of purchases which are planned (i.e. those decided before coming into the store, such as those on a ‘shopping list’), unplanned (i.e. decisions made once inside the store) and made on impulse (i.e. unplanned decisions that are made impulsively) (Kahn and McAlister, 1997). Operators aim to increase all these types of purchases, particularly those most amenable to change: the unplanned and impulse purchases. The first dietary implication of this strategy is that consumers buy more food; this is even the case when outlets stock less variety, as in discounters, because operators aim to sell the *right* assortment to encourage *more* purchasing.

A second implication is that, by making new products available, operators encourage consumers to try new foods that have not featured before in their diets. This strategy is now in evidence in developing countries, where supermarkets sell imported and other ‘Western’ foods not traditional in domestic diets, as well as an increasing range of highly processed foods, such as snacks, ready meals, frozen foods, dairy products and ‘diet’ products. It is also in evidence in North America and Europe, where supermarkets have pioneered the growth in markets for exotic, out-of-season fruits and vegetables not previously available, as well as chilled ready-to-eat items.

A third implication is that, by providing more variety, operators encourage consumers to diversify their diets, thus improving diet quality. This implication is supported implicitly by the epidemiological evidence already discussed, showing that people in the US living closer to supermarkets have higher-quality diets. However, the context is highly specific, since traditional retail tends to be of low quality in the US, unlike most other countries, where wet markets and grocery stores sell a wide variety of foods. In the only study carried out on this issue in developing countries, Tessier et al.

(2008: 768) found that 'supermarkets do not yet markedly modify food consumption in Greater Tunis' but that 'a slight improvement in dietary quality can be observed among people who use supermarkets regularly'. The authors speculate that this increase stems from higher-income groups purchasing the diverse foods sold by supermarkets, such as exotic fruits and wholemeal products.

The fourth implication is more negative: that consumers will purchase more highly-processed (often energy-dense) foods, owing to the initial specialisation and relatively large degree of allocation of shelf space to these foods, the efforts made to increase sales through category management, and the frequent introduction of new processed food products. Again, high-quality empirical information on this question is sparse. One study, of Guatemala, suggests that people buying at supermarkets tend to buy more highly processed foods than those shopping only at traditional stores (Asfaw, 2008). But this conclusion is only suggestive, since the study did not isolate the actual effect of supermarkets on purchases of processed foods relative to other factors. It is clear, however, as put by Euromonitor, that supermarket development has 'facilitated the deepening penetration of emerging regions by packaged food manufacturers, which stimulated growing sales through food retailers with their new product launches and intensive marketing campaigns' (Euromonitor, 2005c).

### **3.3 Price**

#### **Decisions and drivers**

Pricing is one of the top strategic considerations for supermarket operators (D'Andrea et al., 2006c). And given the thousands of products they sell, they have to make many decisions about prices. Collectively, the aim is to gain competitive advantage over rival stores and increase the amount of products sold, while still maintaining profit margins. To achieve this, operators have, throughout their development, placed downward pressure on consumer food prices, and, to defend their margins, cut costs in the supply chain. Two of the most important factors influencing the decisions made by supermarket operators about food prices are, then, the degree to which they can cut supply-chain costs, and the nature of the competitive retail environment.

Over the past 25 years, leading operators have worked hard to cut costs in their supply chains, both by reducing the prices they pay for products from their suppliers, and reducing the costs of distributing them to their outlets. As already discussed with regard to product selection, the decisions to source products directly from large suppliers (i.e. to cut out wholesalers), centralise distribution, and adopt ECR have led to large efficiency gains and reduced costs throughout the supply chain. The decisions by leading operators to purchase rivals, thereby increasing market concentration, also increased their buying power and thus their ability to leverage lower prices from suppliers. The ability to gain efficiencies was further strengthened by the development of larger store sizes in out-of-town locations with lower land charges.

Reducing their supply costs enabled operators to lower the prices of the food they sell relative to traditional retail formats, while still generating adequate profit margins. Take the case of Wal-Mart. Early on in its development, the company made a clear decision to adopt a cost leadership strategy through what it terms 'Everyday Low

Pricing' (EDLP). This involves 'Everyday Low Costs', i.e. cutting costs by investing in logistics and centralised distribution and passing the savings on to consumers (Wal-Mart de México, 2002). Today, the EDLP strategy has been adopted in its stores throughout the world. 'Rollbacks' are also used, which involve lowering a price for 90 days at a time. The strategy has led to lower prices: between 1985 and 2004 it is estimated that the existence of Wal-Mart in the US resulted in a cumulative reduction in consumer prices of 3.1%. According to the company, this translated into 'savings for consumers amounting to \$263 billion in 2004, \$895 per person, and \$2,330 per household' (Global Insight, 2007: 1). However, while prices are often lower (albeit not for all goods, and dependent on the nature of local competition), the strategy also increases the amount that consumers actually spend because they buy more. In Mexico, Wal-Mart credits the introduction of the EDLP strategy in 1999 with boosting the amount spent per transaction by 5% from the following year (Wal-Mart de Mexico, 2000). The 'savings' incurred by consumers may thus be higher because they buy more.

Not all leading operators made the decision to adopt Wal-Mart's pricing strategy. Some opted instead for a 'high-low' strategy, whereby the supermarket charges lower prices for key items, sometimes at below cost ('loss leaders'), but higher regular prices for other items (Kahn and McAlister, 1997). One aim of this strategy is to convey the impression that the store charges low prices while not actually discounting everything. A third strategy is to make extensive use of price promotions, as discussed in Section 3.4. Another decision that has driven down supermarket prices is the development of own-brand products. Own brands can be produced highly efficiently, with lower advertising and R&D costs, and have the effect of driving down prices of manufactured foods overall because they compete with brand names (Dawson, 1995).

Whatever the strategy, the ability to cut supply chain costs does seem to have put downward pressure on consumer food prices relative to traditional retail. In the UK, real food prices in supermarket outlets declined by 9.4% between 1989 and 1998 (Competition Commission, 2000). In the US, 14 extensive store surveys conducted between 1966 and 1996 show that food prices are generally higher in smaller grocery stores than in larger supermarkets (King et al., 2004). In developing countries, the situation is a little more complex. Anecdotally, it is clear that when supermarket operators enter developing countries, their food prices tend to be higher than those of traditional retail. But, as shown in Table 4, as operators become more entrenched in shopping patterns in developing countries, they become more price-competitive. Notably, as concluded by Minten and Reardon (2008), they first become more price competitive in packaged, processed foods, as a result of the more rapid development of modern procurement systems for these foods. This conclusion is reinforced by evidence from Brazil, where Farina and dos Santos Viegas (2005) report that in the mid-1990s:

The most important price reductions occurred in industrialized foods, exactly where the multinational investments occurred with greatest intensity, and where supermarkets are most important in the distribution ... the food industry cost squeeze that allowed the consumer price reduction came from adjustments in logistics, procurement strategies, including outsourcing, higher labor productivity and the adoption of food quality programs in order to reduce industrial losses of raw material.

**Table 4: Results of studies on price comparisons between supermarket outlets and traditional retail in developing countries**

Town, country (year of publication)	Price differences between supermarket and 'traditional retail'
<i>First-wave countries</i>	
São Paulo, Brazil (2004)	Basic items like fresh chicken, bread, some vegetables & milk, cheaper in chained supermarket outlets relative to traditional retailers
Chile (2004)	Prices for foods in general lower in supermarkets, so reducing price of overall food basket for low- & middle-income consumers
Argentina, Brazil, Chile, Colombia, Costa Rica & Mexico (2006)	Small independent groceries between 5% & 20% more expensive than large supermarkets, although open markets cheaper
Hong Kong, China (2005)	Packaged, processed foods cheaper in supermarkets in 1980s-90s & fresh produce more expensive; in 1990s-2000s, prices of fresh foods also declined relative to traditional markets
South Africa (2005)	Processed foods & staples cheaper in supermarkets than small stores in rural villages
<i>Second-wave countries</i>	
Mexico (2006)	In mid-1990s, major processed foods cheaper in supermarkets; in 2003-5, prices of most processed & fresh foods lower in supermarkets relative to traditional retailers
Thailand (2002)	Processed food items on average 12% cheaper in hypermarkets, whereas fresh foods were 10% more expensive
Ecuador (2005)	Potatoes, most consumed staple, cheaper in supermarkets, on average by 10%
Jakarta, Indonesia (2007)	Tomatoes significantly more expensive in supermarkets relative to traditional retailers
<i>Third-wave countries</i>	
Madagascar (2008)	Prices of all foods significantly higher in supermarkets than traditional retail
Botswana & Zambia (2007)	Processed staples & packaged products cheaper in supermarkets, with more mixed results for fresh produce
Hanoi, Vietnam (2006)	Staple fresh-processed products (e.g. pork) cheaper in supermarkets, but in general fresh produce more expensive
Nairobi, Kenya (2006)	Commonly purchased packaged, processed foods on average 3-4% cheaper in supermarkets than traditional shops; fresh produce priced similarly to stores & markets where middle & upper-income consumers shop, but up to 90% more expensive than open-air markets patronised by urban poor

Sources: Adapted from review by Minten and Reardon (2008), plus studies by Monteiro, 2004, cited in Farina et al., (2005) and D'Andrea et al. (2006a, 2006b).

Fresh foods like fruits and vegetables tend to stay more expensive in supermarket outlets than in traditional retail for a longer period and may remain so. This is because procurement systems are slower to modernise and supermarket operators compete more on 'quality' (for example, appearance, degree of packaging, safety) than on price. But over time, there is a tendency for prices to decline as efficiencies in procurement systems develop (Minten and Reardon, 2008).

A second major influence on price is the competitive environment in which the supermarkets operate. This involves competition not only between supermarkets and traditional retail, but also between rival supermarket operators, which, over past decades, have engaged in aggressive 'price wars'. In the UK, for example, Tesco's phenomenal sales performance has been driven by continual and relentless pressure on prices relative to rivals. Price cuts – valued at over \$1 bn in the early 2000s – have been the major reason for its huge increases in volume sales (Euromonitor, 2004e). The growth of supermarkets in industrialising countries has also led to fierce price wars – in Thailand, for example (Euromonitor, 2004b).

Competition from rival outlets at a local level is also important (Binkley and Connor, 1996). In the UK, leading operators reportedly vary prices in different geographical locations according to local competitive conditions (Competition Commission, 2000). In a study of the dynamics of fruit and vegetable pricing in supermarkets in the US, McLaughlin (2004) found that 'local competition' was most frequently cited as a price-setting technique. Wal-Mart has been shown to lower prices to match or outcompete local competitors (Huang et al., 2002).

Another aspect of the competitive environment is different store formats. 'Non-traditional' outlets, such as supercentres, warehouse stores and discounters have developed specifically to compete on price. A recent study in the US of prices paid at conventional supermarkets and other traditional retailers, relative to these 'non-traditional' stores, found that dairy prices were between 5% and 25% lower at the latter; lower prices were also found for a wide range of products including eggs, fruits and vegetables, beef, poultry, coffee and cookies. The price differences were significant: whereas annual food price increases were only around 3% per year between 1985 and 2005, store format differences could explain differences of over 5% (Leibtag, 2005).

It should be noted, however, that one of the concerns raised about supermarket operators is that they face too *little* competition owing to high levels of concentration in the sector and the decline of traditional retail, thus enabling them to raise prices. But a review of the empirical evidence in the late 1990s found that, while concentration is virtually always associated with higher profits, it is associated with lower and higher prices, depending on the context (Kinsey, 1998). In the UK, the government's Competition Commission reported in 2000 that, despite some concerns about local-level competition, the industry is broadly competitive and there is no evidence that consumers are paying higher prices overall as a result of supermarket concentration (Competition Commission, 2000). Although it can nonetheless be argued that there is too little competition in the retail sector, especially with regard to the effects of supermarket power further down the food chain, there can be little doubt that the desire of supermarket operators to gain competitive advantage is an important influence on food prices.

The net outcome of these changes has been two-fold. First, supermarket operators tend to charge lower food prices than traditional retailers (although this emerges for fresh foods only over the longer term, and is not always the case). Second, they have gained the flexibility to adapt prices to national and local competitive conditions and the target market. This flexible approach has been enabled by technologies like electronic shelf labelling systems, which have made it easier for supermarkets to adapt prices over relatively short periods and respond quickly to changing conditions (Kahn and McAlister, 1997).

### Dietary implications

The evidence shows clearly that pricing decisions by supermarket operators have affected absolute and relative food prices (i.e. the prices of different foods relative to each other). This has dietary implications because prices affect consumers' decisions about what to buy. It is often argued in the economics literature that, in developed countries, price does not play a significant role in consumer purchasing decisions because consumers tend to be insensitive to changes in price (i.e. food is price-inelastic) (Seale Jr et al., 2003). Consumers in developing countries are more sensitive, but still not highly sensitive. What is important here, though, is that, in supermarkets, relative prices are often more important in consumers' choices than absolute prices. Most consumers have a generally low precise knowledge of absolute prices (i.e. they are not able to recall the exact price of a food product) (Kahn and McAlister, 1997). Rather, when in a supermarket outlet, they evaluate prices relative to what have been termed 'external' and 'internal reference' prices (Ibid.). That is, they compare the price of a food with an 'external reference price' such as that of a similar product (a different type of biscuit; a low-fat version; another brand), or a sale or promotional price. They also compare prices with remembered 'internal reference prices' such as the price the previous week in the same supermarket, prices in other supermarkets and food retailers, or from promotional material. Consumers then tend to buy the products that they think have a fair or good price relative to these combined reference prices.

The first dietary implication of this is that consumers are more likely to buy the foods that are perceived to be 'good value' relative to others. If these are the packaged, processed foods, supermarket pricing strategies are likely to encourage the consumption of these foods. This has important implications for the growth of processed food consumption in developing countries, since supermarket operators have driven the prices of these foods below the consumer reference prices (i.e. the prices in traditional retail), and faster than those of fresh foods. It can therefore be hypothesised that they have made these foods more attractive to consumers relative to traditional, minimally processed foods. But it is likewise true that if it is the fresh, or expensive, high-quality foods which are perceived as being good-value, then consumers will be relatively attracted to these foods. And because consumers shop at supermarkets in order to buy the foods they perceive as 'good-value', they are likely, for the sake of convenience, to buy other food categories there too.

The second dietary implication is that consumers will buy more. This stems from the related issue that consumers perceive supermarkets as generally better value than traditional retail. Even if supermarket prices are only marginally less than those of

competitors, and other products sell at higher prices, the pricing strategy as a whole encourages the perception of 'good value', and thus greater purchasing. As explained by Wal-Mart's founder, Sam Walton:

By cutting your price, you can boost your sales to a point where you earn far more at the cheaper retail price than you would have by selling the item at the higher price. In retailer language, you can lower your mark-up but earn more because of the increased volume. (Walton and Huey, 1993)

### **3.4 Promotion**

#### **Decisions and drivers**

The decision to adopt aggressive promotional strategies has been a defining characteristic of supermarket development over the past 25 years. The use of price promotions increased 12-fold in the US between the mid-1970s and mid-1980s (Kahn and McAlister, 1997). In the UK, the largest supermarkets typically have between 5,000 and 15,000 promotions annually (Cooper, 2003). In the US, where coupons are very popular, manufacturers of packaged goods distributed 268.5 billion coupons in 1996, 5.3 billion of which were redeemed – representing about \$3.5 billion worth of products (Nevo and Wolfram, 2002). Promotions are likewise used widely in outlets in developing countries (Euromonitor, 2004a-f, 2005a-c).

Promotional activity creates short-run differentiation from other stores, thus providing a competitive mechanism to attract customers into the store and increase market share. Other objectives of sales promotions include increasing sales of more profitable items, enhancing store image, and extinguishing unwanted inventory (Kahn and McAlister, 1997). A further core objective is to increase *category* sales, not just brand sales. If the effect of the promotion is only that consumers switch away from their usual brand to the promoted brand, the supermarket operator experiences no overall increase in sales. In other words, supermarket revenues are more closely related to category sales than to the sales of any one brand. As a result, brand managers at food companies are more likely to receive co-operation from supermarkets in developing promotions when the supermarket can be convinced that the proposed sales promotion will increase category sales (Nijs et al., 2001).

To achieve these aims, leading operators use many different promotional techniques. Point-of-sale promotions, categorised in Table 5, include everything from 'X% off', coupons, display features, and information provided in leaflets. Supermarket operators also advertise away from point of sale, such as targeted mailings to loyalty cardholders and advertisements for point-of-sale promotions in the media.

Alongside specific sales promotions, operators design their store layouts and create an ambience specifically aimed at promoting greater purchasing. According to Nestle (2006), in layout they follow the principle that 'the products seen most sell best'. So, for example, they place the highest selling food departments in the parts of the store that get the greatest flow of traffic, use the aisle near the entrance for items that sell well on

**Table 5: Point-of-sale promotions conducted in supermarket outlets**

Category of promotion	Example
Price discounts	Direct discounts such as '50% off' Coupons issued by the supermarket Discounts via loyalty cards
Extra-product promotions	Buy-one-get-one-free Three for the price of two
Feature and display promotions	Placing a particular item in a prominent location e.g. end-of-aisle display Displaying a graphic that draws attention to the shelf
Point-of-sale advertising	Advertising on the shelf Advertising on trolleys or other equipment In-store flyers
Free sampling	Taste samples provided in-store
Information devices	Recipes containing specific products, etc. Flyers containing nutritional information for specific products

impulse, create optimum-length aisles with the optimum variety so that consumers are not tempted to skip them, and place items popular with children at their eye level near the check-out. Music and smells are also designed to encourage consumers psychologically to spend more time in the supermarket – and buy more.

Supermarket operators have been able to increase their use of sales promotions as a result of the adoption of new management practices and technologies. The technologies associated with ECR have been critical. A key issue in developing sales promotions is the co-ordination required between the food supplier and the supermarket operator. Historically, there were numerous disincentives to promotions in supermarkets. For example, food manufacturers would sell products to supermarket operators at a discounted price in order for them to run a promotion. In response, operators would sometimes just buy more from the manufacturers during the period of promotion at the discounted price, for sale both during and after the promotion (Kahn and McAlister, 1997). This reduced the incentive for manufacturers to engage in sales promotions. Other promotional programmes failed to benefit the supermarket operator because consumers simply switched away from one brand to another, with no overall increase in sales. But the development of ECR provided the co-ordinating mechanisms for the benefits to be spread more evenly. As put by an executive at Birds Eye Walls in the mid-1990s, 'Now, under the umbrella of ECR, the joint planning execution and review of promotional activity can become a science. Because of this, we can guarantee that no Birds Eye Walls promotion will ever knowingly reduce total cash profit for our customers [i.e. supermarket operators and other retailers]' (Pearce, 1996: 13). This is achieved by joint planning which aims to increase the sales of categories, not just brands. In addition, the introduction of ECR technologies, notably EPOS systems,

meant that extra-product and price promotions could be implemented at short notice and with minimum effort. Category management also enabled the development of more efficient, targeted promotions.

The adoption of store loyalty cards was a second key driver of the increasing use of sales promotions. Loyalty cards vastly increased the capability of supermarket operators to target promotions more closely at consumers. As put by Carrefour (2004b), 'whatever the country concerned, the strategic advantage of the loyalty card is that it permits a steady transition from mass marketing to targeted marketing' (p. 54). Euromonitor (2004e) explains the strategy in more detail:

The card information has also given rise to a new form of targeting by retailers. Whereas in the past, thousands of indiscriminate mailshots, and advertisements in the press and other media may have been used to drive a sales message home, retailers are turning their attention to what could be termed 'individual' marketing. The information obtained from each consumer's shopping bill can be analysed and used to determine which products are likely to attract their attention, which promotions could find appeal, and then the consumer receives promotional information particularly targeted at him/herself or their family.

Loyalty cards also have the advantage of allowing the operator to measure the effects of promotions (Seth and Randall, 2005).

### **Dietary implications**

Empirical studies show that sales promotions lead to substantial short-term increases in sales volumes, the greater the discount, the greater the increase (Blattberg et al., 1995; Blattberg and Neslin, 1990). In the UK, sales promotions in supermarket outlets typically lead to an increase in sales of 200%, and buy-one-get-one-free-type offers can lead to a 3000% increase (Cooper, 2003; Competition Commission, 2000).

From a dietary perspective, however, the question is whether promotions actually encourage the consumer to buy more of the product (rather than just buy a different brand during the period of the promotion) and if so, whether they consume more of it (rather than just consuming it over a longer period of time).

As already discussed, supermarket operators certainly intend that sales promotions increase food sales overall. But the actual effect of sales promotions on consumption is highly complex, dependent on the type of promotion, the food category concerned, and the type of target market (Bell et al., 1999; Putsis and Cotterill, 1999; Nijs et al., 2001; Putsis and Dhar, 2001). Notably, the effect varies significantly between foods, depending on how perishable, convenient and desirable they are. There is evidence, however, that consumers will consume more of the products they purchase on promotion, because buying more products at once reduces 'acquisition and replacement costs of consumption' (Ailawadi and Neslin, 1998; Chandon and Wansink, 2002). If this is the case, the dietary implication is that consumers will consume more of widely promoted foods, and they are encouraged to consume more than they intend. This suggests that the effect on food consumption will depend on which foods are most heavily promoted. There is rather limited empirical information on the actual foods

most commonly subject to promotions. A rare example comes from the UK, where a supermarket survey by the National Consumer Council found that, out of a total of 2,346 price promotions surveyed, there were over twice as many for fatty and sugary foods relative to fruits and vegetables (Dibb, 2005).

### ***3.5 Nutrition-related activities***

#### **Decisions and drivers**

The most recent core decision with dietary implications taken by supermarket operators has been to develop nutrition-related activities (often part of so-called ‘health and wellness’ policies). The objective of these activities is to attract health-conscious consumers away from other stores, i.e. to create competitive advantage, and to respond to calls by governments and civil society for supermarkets to play a greater role in addressing obesity. Development of these activities has been facilitated by many of the drivers already discussed, notably the ability of operators to demand products from suppliers that meet their own specifications, such as reformulated products.

Compared with the other decisions discussed here, the development of nutrition-related activities is relatively recent and still emerging; most ‘corporate responsibility’ efforts currently focus on environmental and sustainable development (Dibb et al., 2008). A 2005 review of the nutrition-related policies adopted by the world’s top ten supermarkets found that only four had made a statement on diet-related health (Ahold, Carrefour, Rewe and Tesco) (Lang et al., 2005). But since then, operators have done more to develop coherent policies and activities. Core activities include: reformulating own-brand products to reduce fat, sugars, salt; developing ‘healthy’ lines of own-brand products; introducing nutrition labels; promoting fruits and vegetables; and implementing nutrition-education initiatives.

Developing ‘healthy’ own-brand foods is not a new strategy as such. Most leading operators, at least in Europe, have targeted ‘healthy’ product lines at health-conscious consumers for years. What has changed is that this commercial strategy has been reframed as a health and wellness strategy, and there is now new activity to reformulate existing products and introduce even more product ranges. Tesco, for example, now has four such ranges (‘Free From’, ‘Healthy Living’, ‘Wholefoods’, ‘Kids Food’) (Tesco, 2008). Carrefour has a stated policy of offering ‘a selection of nutritionally balanced products and dedicated “nutrition” ranges’ with the objective of ‘enabling all our customers to acquire good habits for a healthy lifestyle and a balanced diet’ (Carrefour, 2006). In the US, supermarket operators have historically been less focused on own brands, but are now also developing more health-oriented ranges (Martinez and Kaufman, 2008). In the US, too, new entrants have opened outlets entirely dedicated to ‘natural foods’, i.e. those associated with health or sustainability. Between 1999 and 2006, grocery sales at the two largest of such supermarkets, Whole Foods and Wild Oats, grew by 275% and 64% respectively, relative to 22% for all grocery stores (Martinez and Kaufman, 2008).

Nutrition interventions in supermarket outlets, such as promotions of fruits and vegetables and low-fat foods, are also not new (for example, Glanz and Yaroch, 2004; Seymour et al., 2004; Paine-Andrews et al., 1994). But again, the nature of interventions

is changing. Previously, efforts were led by health-sector groups, rather than the operators themselves – the supermarket *outlet* was the setting, but the supermarket *operator* was not the instigator. Now, supermarket operators are developing their own initiatives. The most visible of these initiatives has been the introduction of front-of-pack nutrition labels. Throughout Europe, many major supermarket operators have introduced front-of-pack nutrition labels on own-brand products, either following a ‘traffic-light’ or a Guideline Daily Amount (GDA) design (FSA, 2008; CIAA, 2008). In the US, Hannafords (owned by the Belgium-based Delhaize) has a ‘Guiding Stars’ nutrition labelling scheme based on nutritional profile, while the new ‘Overall Nutritional Quality Index’ system will shortly provide on-the-shelf nutritional information in major US supermarkets (Hannafords, 2008; Yale Griffin Prevention Research Center, 2008). Supermarket operators are also increasingly developing nutrition-education initiatives, such as nutrition tours for children (Fieldtripfactory, 2008) and ‘nutrition weeks’ (Carrefour, 2006).

The outcome of these efforts is a greater amount of nutrition promotion within the supermarket setting, and a greater degree of formal integration of nutrition into the policies and strategies of operators.

### **Dietary implications**

The dietary implication of nutrition-related activities is that more consumers will be encouraged to consume more nutritious foods. Evidence to support this implication is still emerging. The effects of nutrition interventions implemented in supermarket outlets prior to the more recent activities have been mixed. The most recent review concluded that ‘Point-of-choice nutrition information to help consumers identify healthier products can and has been tried in grocery store settings, with mixed results but some notable successes’ (Story et al., 2008). On front-of-pack nutrition labelling, a leading UK supermarket, J. Sainsbury, reports: ‘Our customer research has shown that over 80% of customers see the multiple traffic light labels as a useful tool, with 79% saying it influences what they buy. Products with greens and ambers on the label have shown positive sales trends versus similar products with ambers and reds’ (J. Sainsbury, 2008). In the US, Hannafords supermarkets report that sales of starred breakfast cereals and soups have increased relative to those without stars (Shulman, 2008).

Operators have nevertheless been criticised for still failing to deliver on nutrition. In the UK, a report tracking how operators help their customers shop, cook and eat more healthily, found that many economy-range own-brand foods contain more salt, fat and sugar than their standard equivalents (Dibb, 2006) (though this is in contrast to an earlier study by Cooper and Nelson, 2003). It found that nearly all operators scored poorly on communicating healthy eating messages to their customers, and that 40% of all price promotions are for fatty and sugary foods. It has also been argued that supermarket initiatives to promote health are limited, in that they still place all the responsibility for making ‘healthy choices’ on to consumers (Colls and Evans, 2008). Operators simply make the products and information available to consumers, but thereafter leave them to make the ‘right choice’.

## 4 Conclusion

The evidence presented in this article shows that decisions by supermarket operators about location and format, product selection, prices, promotions and nutrition-related activities have implications for the diets of consumers around the world. These decisions affect food accessibility (the distance a person must travel to purchase food),<sup>4</sup> food availability (the product range within a store, and its nutritional quality), food prices (the prices charged for the available foods) and food desirability (the desire people have for the available foods), which in turn affect the decisions consumers make about food. Figure 1 illustrates these pathways.

This review has shown that supermarket operators make decisions in response to both consumer characteristics and supply-side incentives. On the supply side, the adoption of technologies has been particularly critical in driving supermarket development, as have associated changes in supply-chain management. These technological and managerial changes have enabled supermarket operators to better meet consumer preferences. But they have also increased the ability of operators to *create* consumer demand, not just meet it.

Four hypotheses can be drawn about how supermarket development has affected diets. First, by affecting the accessibility of food, supermarket development has reduced the ability of more marginalised people and communities to purchase a high-quality diet. Second, in contrast, by increasing the availability of a wide variety of foods at lower prices, it has promoted more diverse, higher-quality diets. Third, conversely, it has led a deterioration of diet quality by making energy-dense, nutrient-poor highly-processed foods more available, and promoting them at relatively low prices. Fourth, and less specific, it has encouraged consumers to buy, and so consume, more.

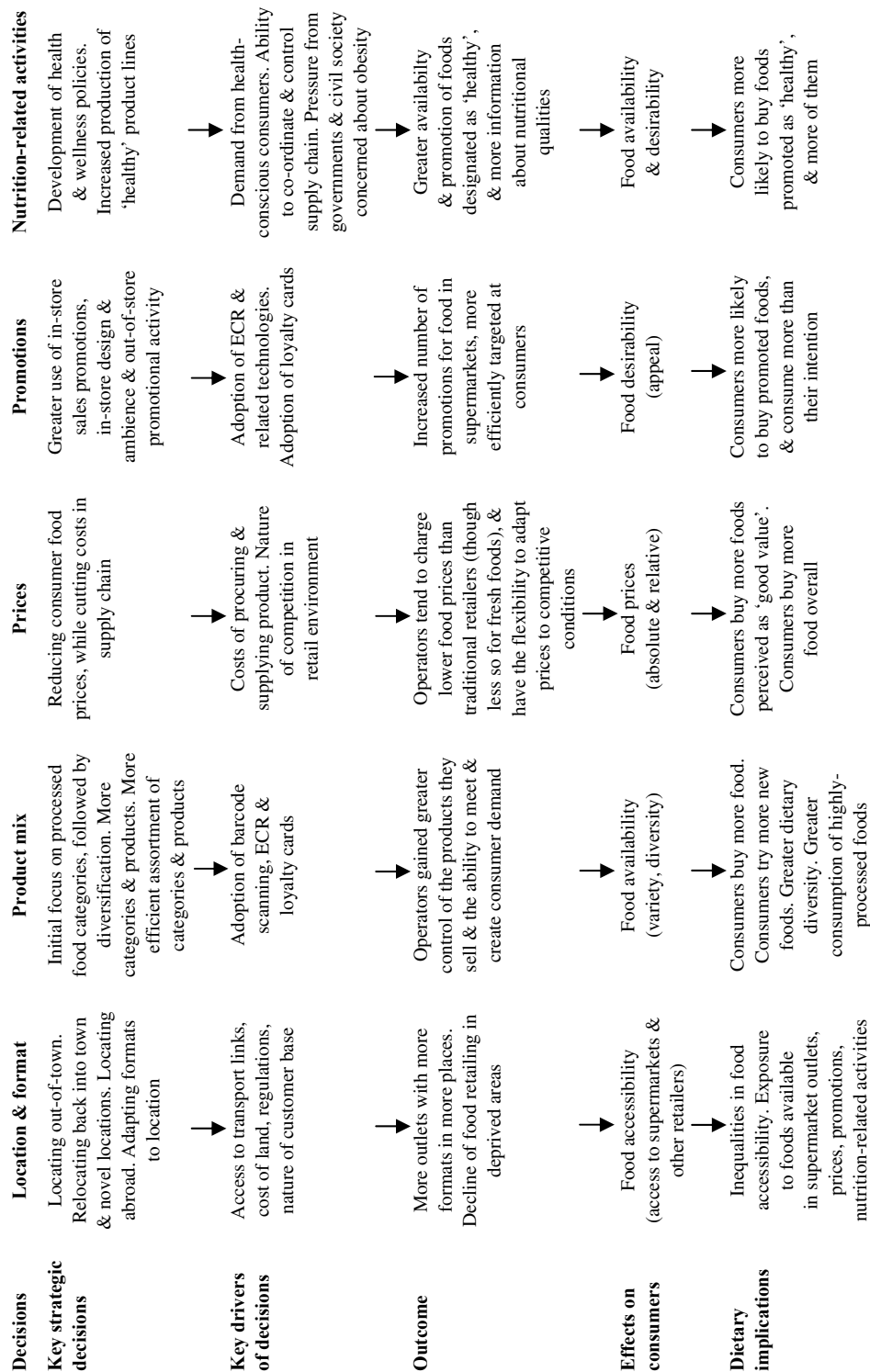
As reviewed in the text, the evidence supporting the first three hypotheses is mixed. Nor is there much available. The one exception is the food accessibility hypothesis in the US, where there is strong evidence that low-income populations have relatively poor access to supermarket outlets, which in turn is associated with lower diet quality. It should be noted that since this evidence comes from cross-sectional studies, it is not clear what is causing the association (Ford and Dziewaltowski, 2008). The question of whether this evidence applies outside the US is also pertinent. The US has a very specific retailing environment, with a poorly developed non-supermarket sector in comparison with most other countries. The evidence thus cannot be simply assumed to apply elsewhere. Certainly, evidence from the UK suggests the issue is more complex than in the US (Cummins and McIntyre, 2006).

The problems of applying US-based evidence elsewhere also apply to the second hypothesis. Evidence from the US does support the hypothesis that increased access to a supermarket increases diet quality, but other evidence suggests it is a much greyer area in other developed countries. In developing countries, the only study testing this hypothesis shows that supermarket outlets are associated with improved diet quality, but the effect is only very slight and may be the result of greater supermarket patronage

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4. This is not the same as 'food access', which incorporates other factors such as price and availability.

**Figure 1: The dietary implications of decisions by supermarket operators**



by higher income groups (Tessier et al., 2008). Evidence on the third hypothesis, that supermarket development leads to a deterioration of diet quality, is also very thin. The only published study identified found that shopping at a supermarket is associated with higher expenditure on processed foods, with the implication that it leads to poorer-quality diets (Asfaw, 2008). But the study was very limited because it did not isolate the actual effect of supermarkets on purchases of processed foods.

While the evidence base is not large, the different messages it provides probably reflect reality: all three hypotheses are possible, but not universally applicable. This is because both operators' and consumers' decisions are embedded in geographical, economic, social, cultural and demographic contexts that vary from country to country, society to society, neighbourhood to neighbourhood (Clarke et al., 2004). Thus different households will experience supermarket development differently, depending on the context. Some communities will be adversely affected by poor food access arising from supermarket development, but others will not, depending on a whole host of factors. Contextual differences are likewise important in determining whether supermarket development encourages higher or poorer diet quality. The evidence presented shows clearly that supermarkets have the potential to encourage greater consumption of high-calorie, nutrient-poor processed foods, given their initial concentration on processed foods, their relatively lower prices, and the heavy use of promotions on these items. But there is likewise reason to believe that they could encourage the consumption of more nutritious foods. Supermarket operators soon expand into and reduce the prices of fresh food categories like fruits and vegetables. They are also far more likely to sell 'healthy' product ranges than traditional retailers, many of which also sell the energy-dense processed foods sold by supermarkets (notably confectionery and soft drinks). While supermarkets do play a far more significant role than traditional retail in introducing new processed foods, they are also more likely to introduce new nutritious products, such as exotic fruits and conveniently packaged vegetable snacks.

With this complex interplay of operator and consumer decisions, the effects of supermarket development on diet should be expected to depend on context. The key research priority in this area should, then, be to understand the way *different* consumers respond in their food choices to supermarket development in different localities and populations, utilising both quantitative and qualitative techniques.

The fourth hypothesis raised here is, however, much more universally applicable. The evidence shows unequivocally that the core aim of decisions made by supermarket operators about location/format, product, prices, promotions and nutrition-related activities is to encourage consumers to buy more, and 'buy it from us'. Through this process, supermarket operators promulgate the message to 'eat more'. This applies to all foods, whatever they are. As argued by Nestle, the supermarkets' '*normal methods* of doing business encourage you to eat more, not less ... Their job is to sell food, and more of it' (2006: 13, 17, emphasis added).

It could be argued that the 'buy it from us' objective, i.e. to attract consumers away from competitors, means that consumers simply buy more food from one supermarket rather than another, or from one supermarket chain rather than a traditional retailer. An overriding aim of supermarket strategies is certainly to gain competitive

advantage, and a major effect of supermarket development has been to attract consumers away from traditional outlets. But the efforts made through such processes as 'category management', pricing and promotions aim to go beyond that to encourage more purchasing overall. This applies as much to fruits, vegetables and 'diet' products as to energy-dense, nutrient-poor foods. The message remains the same: eat more. It is for this reason, then, rather than the specific focus on energy-dense processed foods, that supermarket development can be associated with the development of an obeseogenic environment: it counters the message to eat in moderation, whatever the food.

The question, accordingly, is whether the nutrition-related activities that supermarket operators are increasingly adopting – albeit not yet significantly at a global level – will work to counteract this message. Certainly, operators are in the powerful (and, from a public health standpoint, somewhat enviable) position of having the potential to encourage healthier diets on a large scale. But driving change will take more than nutrition-related activities that still rely largely on *consumer* decisions (Colls and Evans, 2008). Rather, it will take change in the broader decisions *supermarket operators* make about location/format, product selection, prices and promotions. Supermarket operators are already under considerable pressure to change their business models (Forum for the Future, 2007). Given the power they have over their suppliers, concepts such as 'choice editing'<sup>5</sup> could be applied to effect broader change in product availability (Forum for the Future, 2007; Dibb et al., 2008). Operators could shift their strategic focus from being 'providers of food' to being 'providers of good health' in the same way as energy companies are shifting to being providers of energy services (for example, energy efficiency) (Forum for the Future, 2007). The promotional environment in supermarket outlets also requires careful consideration. Whatever way, to encourage healthier diets, it is critical that these decisions take into account how different consumers respond to supermarket development in different contexts.

There are also policy implications for governments and regulators. It is up to them to make policies about the retail sector as a whole. Again, it is key that these macro-level policies take account of their effects on different consumers at the local level (Kervenoael et al., 2006). They could focus on enabling other retail players, such as the smaller stores and local markets not so focused on the 'buy more, eat more' message, to play a more proactive role. A more balanced retail environment may well be an effective tool to encourage more balanced diets.

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## **References**

- Acheson, D. (1998) *Independent Inquiry into Inequalities in Health*. London: The Stationery Office.
- Ailawadi, K. and Neslin, S. A. (1998) 'The Effect of Promotion on Consumption: Buying More and Consuming It Faster', *Journal of Marketing Research* 35 (3): 390-8.

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5. Eliminating products at point of retail so that they are no longer available.

- Apparicio, P., Cloutier, M. S. and Shearmur, R. (2007) 'The Case of Montréal's Missing Food Deserts: Evaluation of Accessibility to Food Supermarkets', *International Journal of Health Geography* 12 (6): 4.
- Asfaw, A. (2008) 'Does Supermarket Purchase Affect the Dietary Practices of Households? Some Empirical Evidence from Guatemala', *Development Policy Review* 26 (2): 227-43.
- Baker, E. A.; Schootman, M.; Barnidge, E. and Kelly, C. (2006) 'The Role of Race and Poverty in Access to Foods that Enable Individuals to Adhere to Dietary Guidelines', *Preventing Chronic Disease* 3 (3): A76.
- Belik, W. and dos Santos, R. R. (2002) 'Regional Market Strategies of Supermarkets and Food Processors in Extended Mercosur', *Development Policy Review* 20 (4): 515-28.
- Bell, D. R., Chiang, J. and Padmanabhan, V. (1999) 'The Decomposition of Promotional Response', *Marketing Science* 18 (4): 504-26.
- Bhulai, S. (2007) 'Efficient Consumer Response' (<http://www.few.vu.nl/~sbhulai/ecrf/>).
- Binkley, J. K. and Connor, J. M. (1996) *Market Competition and Metropolitan Area Grocery Prices*. Working Paper No. 44. Food Marketing Policy Center, University of Connecticut.
- Blattberg, R., Briesch, R. and Fox, E. (1995) 'How Promotions Work', *Marketing Science* 3 (2): G122-32.
- Blattberg, R. and Neslin, S. (1990) *Sales Promotion: Concepts, Methods and Strategies*. Englewood Cliffs, NJ: Prentice-Hall.
- Block, J. P., Scribner, R. A. and DeSalvo, K. B. (2004) 'Fast Food, Race/ethnicity and Income: A Geographic Analysis', *American Journal of Preventive Medicine* 27 (3): 211-7.
- Blythman, J. (2004) *Shopped: The Shocking Power of British Supermarkets*. London: Fourth Estate.
- California Center for Public Health Advocacy (2007) *Searching for Healthy Food: The Food Landscape in California Cities and Counties*. Fact Sheet (<http://www.publichealthadvocacy.org/searchingforhealthyfood.html>).
- California Center for Public Health Advocacy, PolicyLink and the UCLA Center for Health Policy Research (2008) *Designed for Disease: The Link Between Local Food Environments and Obesity and Diabetes* (<http://www.publichealthadvocacy.org/createdfordisease.html>).
- Carrefour (2006) *Carrefour Group and Sustainable Development: Our responses to 6 major issues*. Levallois-Perret, France: Carrefour (<http://www.carrefour.com/docroot/groupe/C4com/Commerce%20responsable/Publications/CarrefourLeaflet2006GB.pdf>)
- Carrefour (2004a) *Strategy Report 2004*. Levallois-Perret, France: Carrefour.
- Carrefour (2004b) *Format Report 2004*. Levallois-Perret, France: Carrefour.
- Carrefour (2003) *Annual Report 2003*. Levallois-Perret, France: Carrefour.
- Carrefour (2002) *Annual Report 2002*. Levallois-Perret, France: Carrefour.
- Carrefour (2001) *Annual Report 2001*. Levallois-Perret, France: Carrefour.
- Chandon, P. and Wansink, B. (2002) 'When are Stockpiled Products Consumer Faster? A Convenience-salience Framework of Postpurchase Consumption Incidence and Quantity', *Journal of Marketing Research* XXXIX: 321-35.
- CIAA (2008) 'All you wanted to know about GDAs' (<http://gda.ciaa.eu/asp/welcome.asp>).

- Clarke, I. (2000) 'Retail Power, Competition and Local Consumer Choice in the UK Grocery Sector', *European Journal of Marketing* 34 (8): 975-1002.
- Clarke, I.; Hallsworth, A.; Jackson, P.; de Kervenoael, R.; del Aguila, R. P. and Kirkup, M. (2006) 'Retail Restructuring and Consumer Choice 1: Long-term Local Changes in Consumer Behaviour: Portsmouth, 1980-2002', *Environment and Planning A* 38 (25): 46.
- Clarke, I.; Hallsworth, A.; Jackson, P.; de Kervenoael, R.; Perez-del-Aguila, R. and Kirkup, M. (2004) 'Retail Competition and Consumer Choice: Contextualising the "Food Deserts" Debate', *International Journal of Retail and Distribution Management* 32 (2): 88-99.
- Clarkson, R. M., Clarke-Hill, C. M., and Robinson, T. (1996) 'UK Supermarket Location Assessment', *International Journal of Retail and Distribution Management* 24 (6): 22-33.
- Colls, R. and Evans, B. (2008) 'Embodying Responsibility: Children's Health and Supermarket Initiatives', *Environment and Planning* 40: 615-31.
- Competition Commission (2008) *The Supply of Groceries in the UK Market Investigation: Vol. 1: Summary and Report*. London: Competition Commission.
- Competition Commission (1999) *Supermarkets: A Report on the Supply of Groceries from Multiple Stores in the United Kingdom*. London: Competition Commission.
- Cooper, D. (2003) 'Findings from the Competition Commission's Inquiry into Supermarkets', *Journal of Agricultural Economics* 54 (1): 127-43.
- Cooper, S. and Nelson, M. (2003) "'Economy" Line Foods from Four Supermarkets and Brand Name Equivalents: A Comparison of their Nutrient Contents and Costs', *Journal of Human Nutrition and Dietetics* 16: 339-47.
- Cummins, S. and Macintyre, S. (2006) 'Food Environments and Obesity: Neighbourhood or Nation?', *International Journal of Epidemiology* 35: 100-4.
- Cummins, S.; Petticrew, M.; Higgins, C.; Findlay, A. and Sparks, L. (2005) 'Large-Scale Food Retailing as an Intervention for Diet and Health: Quasi-experimental Evaluation of a Natural Experiment', *Journal of Epidemiology and Community Health* 59 (12): 1035-40.
- D'Andrea, G., Lopez-Aleman, B. and Stengel, A (2006a) 'Why Small Retailers Endure in Latin America', *International Journal of Retail and Distribution Management* 34 (9): 661-73.
- D'Andrea, G.; Ring, L. J.; Lopez-Aleman, B. and Stengel, A. (2006b) 'Breaking the Myths on Emerging Consumers in Retailing', *International Journal of Retail and Distribution Management* 34 (9): 674-87.
- D'Andrea, G., Schleicher, M. and Lunardini, F. (2006c) 'The Role of Promotions and other Factors Affecting Overall Store Price Image in Latin America', *International Journal of Retail & Distribution Management* 34 (9): 688-700.
- Dawson, J. (1995) 'Food Retailing and the Consumer', in D. W. Marshall (ed.), *Food Choice and the Consumer*. Glasgow: Blackie Academic and Professional.
- Dhar, S. K., Hoch, S. J. and Kumar, N. (2001) 'Effective Category Management Depends on the Role of the Category', *Journal of Retailing* 77: 165-84.
- Dibb, S. (2006) *Short-Changed on Health? How Supermarkets Can Affect Your Chances of a Healthy Diet*. London: National Consumer Council.

- Dibb, S. (2005) *Healthy Competition: How Supermarkets Can Affect your Chances of Healthy Diet*. London: National Consumer Council.
- Dibb, S.; Eppel, S.; Lang, T. and Rimmer, H. (2008) *Green, Healthy and Fair: A Review of the Government's Role in Supporting Sustainable Supermarket Food*. London: Sustainable Development Commission.
- Dobson, P. W., Waterson, M. and Davies, S. W. (2003) 'The Patterns and Implications of Increasing Concentration in European Food Retailing', *Journal of Agricultural Economics* 54 (1): 111-25.
- Efficient Consumer Response Europe (2007) 'Glossary' (<http://www.ecrnet.org/>).
- Eisenhauer, E. (2001) 'In Poor Health: Supermarket Redlining and Urban Nutrition', *GeoJournal* 53 (2): 125-33.
- Euromonitor (2005a) *Wal-Mart Stores Inc*. London: Euromonitor International.
- Euromonitor (2005b) *Aldi Group*. London: Euromonitor.
- Euromonitor (2005c) *The World Market for Retailing*. London: Euromonitor.
- Euromonitor (2004a) *Retailing in China*. London: Euromonitor.
- Euromonitor (2004b) *Retailing in Thailand*. London: Euromonitor.
- Euromonitor (2004c) *Retailing in Russia*. London: Euromonitor.
- Euromonitor (2004d) *Retailing in South Africa*. London: Euromonitor.
- Euromonitor (2004e) *Retailing in the United Kingdom*. London: Euromonitor.
- Euromonitor (2004f) *Retailing in Morocco*. London: Euromonitor.
- Farina, E. M. M. Q. and dos Santos Viegas, C. A. (2005) 'Foreign Direct Investment and the Brazilian Food Industry in the 90s', *International Food and Agribusiness Management Review* 5 (2) (<http://www.ifama.org/tamu/iama/members/articles/v5i2/efarina.pdf>).
- Farina, E. M. M. Q., Nunes, R. and Monteiro, G. F. (2005) 'Supermarkets and their Impacts on the Agrifood System of Brazil: The Competition Among Retailers', *Agribusiness* (New York) 21 (2): 133-47.
- Federal Trade Commission (2003) *The Use of Slotting Allowances in the Retail Grocery Industry: A Report from the Staff of the Federal Trade Commission*. Washington, DC: Federal Trade Commission (<http://www.ftc.gov/os/2003/11/slottingallowancerpt031114.pdf>).
- Fieldtripfactory.com (2008) 'Health and Wellness' (<http://www.fieldtripfactory.com/trips/healthWellness.php?sid=c602b68c8e63835e7ece9ebf2a2d1f27>).
- Food Ethics Council (2007) *Food Ethics Bulletin*, Summer. London: Food Ethics Council.
- Food Standards Agency (2008) *Traffic Light Labelling* (<http://www.eatwell.gov.uk/foodlabels/trafficlights/>).
- Ford, P. B. and Dzewaltowski, D. A. (2008) 'Disparities in Obesity Prevalence Due to Variation in the Retail Food Environment: Three Testable Hypotheses', *Nutrition Reviews* 66 (4): 216-28.
- Forum for the Future (2007) *Retail Futures*. London: Forum for the Future.
- Gale, F. and Reardon, F. (2004) 'China's Modernizing Supermarket Sector Presents Major Opportunities for US Agriculture Exporters', *AgExporter* (November): 4-8.
- Glanz, K. and Yaroch, A. L. (2004) 'Strategies for Increasing Fruit and Vegetable Intake in Grocery Stores and Communities: Policy, Pricing and Environmental Change', *Preventive Medicine* 39: S75-80.

- Global Insight (2007) 'The Price Impact of Wal-Mart: An Update Through 2006' (<http://www.livebetterindex.com/2007GlobReport.pdf>).
- González-Benito, O. and González-Benito, J. (2005) 'The Role of Geodemographic Segmentation in Retail Location Strategy', *International Journal of Market Research* 47: 295-316.
- Guy, C., Clarke, G., and Eyre, H. (2004) 'Food Retail Change and the Growth of Food Deserts: A Case Study of Cardiff', *International Journal of Retail and Distribution Management* 32 (2): 72-88.
- Hannafords (2008) 'What is Guiding Stars?' ([http://www.hannaford.com/Contents/Healthy\\_Living/Guiding\\_Stars/index.shtml](http://www.hannaford.com/Contents/Healthy_Living/Guiding_Stars/index.shtml)).
- Hawkes, C. (2006) 'Uneven Dietary Development: Linking the Policies and Processes of Globalization with the Nutrition Transition, Obesity and Diet-related Chronic Diseases', *Globalization and Health* 2: 4 (<http://www.globalizationandhealth.com/content/2/1/4>).
- Hearson, M. and Eagleton, D. (2007) *Who Pays? How British Supermarkets are Keeping Women Workers in Poverty*. London: Action Aid.
- Hendrickson, M. and Heffernan, W. (2007) *Concentration of Agricultural Markets April 2007*. Greenwood Village, CO: National Farmers Union (<http://www.nfu.org/wp-content/2007-heffernanreport.pdf>).
- Henson, S. and Reardon, T. (2005) 'Private Agri-food Standards: Implications for Food Policy and Agri-food Systems', *Food Policy* 30 (3): 241-53.
- House of Commons Health Committee (2004) *Obesity: Third Report of Session 2003-04*. London: Stationery Office Ltd.
- Hu, D.; Reardon, T.; Rozelle, S.; Timmer, P. and Wang, H. L. (2004) 'The Emergence of Supermarkets with Chinese Characteristics: Challenges and Opportunities for China's Agricultural Development', *Development Policy Review* 22 (5): 557-86.
- Huang, C. L.; Epperson, J. E.; Cude, B. J. and Woo, B. J. (2002) 'Wal-Mart Supercenter: The New Low-price Food Retailer in Town', *Choices: The Magazine of Food, Farm and Resources Issues* (Summer): 6-9.
- Jackson, P.; de Aguiar, R. P.; Clarke, I.; Hallsworth, A.; de Kervenoael, R. and Kirkup, M. (2006) 'Retail Restructuring and Consumer Choice 2: Understanding Consumer Choice at the Household Level', *Environment and Planning* 38 (25): 47-67.
- J. Sainsbury (2008) *Case Studies: Multiple Traffic Light Labelling* ([www.j-sainsbury.com/cr/index.asp?pageid=68&caseid=traffic\\_light](http://www.j-sainsbury.com/cr/index.asp?pageid=68&caseid=traffic_light), accessed 23 May 2008).
- Kahn, B. E. and McAlister, L. (1997) *Grocery Revolution: The New Focus on the Consumer*. Reading, MA: Addison-Wesley.
- Kaufman, P. (2002) 'Food Retailing', in S. Martinez (ed.), *The US Food Marketing System*. Washington, DC: USDA Economic Research Service.
- Kaufman, P. (1998) 'Nontraditional Retailers are Challenging Traditional Grocery Stores', *Food Review* (USDA) 21 (3): 31-3.
- Kervenoael, R. de., Hallsworth, A. and Clarke, I. (2006) 'Macro-level Change and Micro-level Effects: A Twenty-year Perspective on Changing Grocery Shopping Behaviour in Britain', *Journal of Retailing and Consumer Services* 13: 381-92.
- King, R. P., Leibtag, E. S. and Behl, A. S. (2004) *Supermarket Characteristics and Operating Costs in Low-Income Areas*. Washington, DC: Economic Research Service, USDA.

- King, R. P. and Phumpiu, P. F. (1996) 'Reengineering the Food Supply Chain: The ECR Initiative in the Grocery Industry', *American Journal of Agricultural Economics* 78: 1181-6.
- Kinsey, J. D. (1998) *Concentration of Ownership in Food Retailing: A Review of the Evidence about Consumer Impact*. Food Industry Center Working Paper No. 98-04. St Paul, MN: University of Minnesota (<http://ageconsearch.umn.edu/bitstream/14329/1/tr98-04.pdf>).
- Lang, T., Rayner, G., and Kaelin, E. (2006) *The Food Industry, Diet, Physical Activity and Health: a Review of Reported Commitments and Practice of 25 of the World's Largest Food Companies*. London: City University (<http://www.city.ac.uk/press/The%20Food%20Industry%20Diet%20Physical%20Activity%20and%20Health.pdf>).
- Laraia, B. A.; Siega-Riz, A. M.; Kaufman, J. S. and Jones, S. J. (2004) 'Proximity of Supermarkets is Positively Associated with Diet Quality Index for Pregnancy', *Preventive Medicine* 39 (5): 869-75.
- Larsen, K. and Gilliland, J. (2008) 'Mapping the Evolution of "Food Deserts" in a Canadian City: Supermarket Accessibility in London, Ontario, 1961-2005', *International Journal of Health Geography* 18 (7): 16.
- Leibtag, E. (2005) 'Where You Shop Matters: Store Formats Drive Variation in Retail Food Prices', *Amber Waves* (November): 13-18.
- Martinez, S. and Kaufman, P. (2008) 'Twenty Years of Competition Reshape the US Food Marketing System', *Amber Waves* 6 (2): 28-35 ([http://www.ers.usda.gov/AmberWaves/April08/PDF/AW\\_April08.pdf](http://www.ers.usda.gov/AmberWaves/April08/PDF/AW_April08.pdf)).
- McLaughlin, E. W. (2004) 'The Dynamics of Fresh Fruit and Vegetable Pricing in the Supermarket Channel', *Preventive Medicine* 39 (Suppl. 2): S81-7.
- Minten, B. and Reardon, T. (2008) 'Food Prices, Quality and Quality's Pricing in Supermarkets Versus Traditional Markets in Developing Countries', *Review of Agricultural Economics* (DOI, 10.1111/j.1467-9353.2008.00422.x).
- Moore, L. V. and Roux, A. V. D. (2006) 'Associations of Neighborhood Characteristics with the Location and Type of Food Stores', *American Journal of Public Health* 96 (2): 325-31.
- Moore, L. V.; Diez Roux, A. V.; Nettleton, J. A. and Jacobs, D. R. Jr. (2008) 'Associations of the Local Food Environment with Diet Quality: A Comparison of Assessments Based on Surveys and Geographic Information Systems: The Multi-ethnic Study of Atherosclerosis', *American Journal of Epidemiology* 167 (8): 917-24.
- Morland, K., Wing, S. and Diez, R. A. (2002) 'The Contextual Effect of the Local Food Environment on Residents' Diets: The Atherosclerosis Risk in Communities Study', *American Journal of Public Health* 92 (11): 1761-7.
- Nayga, R. M. and Weinberg, Z. (1999) 'Supermarket Access in the Inner Cities', *Journal of Retailing and Consumer Services* 6: 141-5.
- Nestle, M. (2006) *What to Eat*. New York: North Point Press.
- Nevo, A. and Wolfram, C. (2002) 'Why do Manufacturers Issue Coupons? An Empirical Analysis of Breakfast Cereals', *RAND Journal of Economics* 33 (2): 319-39.
- Nijs, V. R.; Dekimpe, M. G.; Steenkamps, J.-B. E. M. and Hanssens, D. M. (2001) 'The Category-demand Effects of Price Promotions', *Marketing Science* 20 (1): 1-22.
- O'Neill, M. (2005) *Putting Food Access on the Radar*. London: National Consumer Council.

- Paine-Andrews, A.; Francisco, V. T.; Fawcett, S. B.; Johnston, J. and Coen, S. (1994) 'Health Marketing in the Supermarket: Using Prompting, Product Sampling and Price Reduction to Increase Customer Purchase of Lower-fat Items', *Health Marketing Quarterly* 14: 85-99.
- Pearce, A. M. (1996) 'Efficient Consumer Response: Managing the Supply Chain for "Ultimate" Consumer Satisfaction', *Supply Chain Management* 1 (2): 11-4.
- Pearce, J.; Hiscock, R.; Blakely, T. and Witten, K. J. (2008) 'The Contextual Effects of Neighbourhood Access to Supermarkets and Convenience Stores on Individual Fruit and Vegetable Consumption', *Epidemiology and Community Health* 62 (3): 198-201.
- Poole, R., Clarke, G. P. and Clarke, B. B. (2002) 'Growth, Concentration and Regulation in European Food Retailing', *European Urban and Regional Studies* 9 (2): 167-86.
- Popkin, B. M. (2006) 'Global Nutrition Dynamics: The World is Shifting Rapidly Toward a Diet Linked with Noncommunicable Diseases', *American Journal of Clinical Nutrition* 84 (2): 289-98.
- Putsis, W. P. P. and Cotterill, R. W. (1999) 'Share, Price and Category Expenditure: Geographic Market Effects and Private Labels', *Managerial and Decision Economics* 20: 175-87.
- Putsis, W. P. P. and Dhar, R. (2001) 'An Empirical Analysis of the Determinants of Category Expenditure', *Journal of Business Research* 52: 277-91.
- Raven, H., Lang, T., and Dumonteil, C. (1995) *Off our Trolleys? Food Retailing and the Hypermarket Economy*. London: Institute for Public Policy Research.
- Reardon, T. and Berdegúe, J. A. (2002) 'The Rapid Rise of Supermarkets in Latin America: Challenges and Opportunities for Development', *Development Policy Review* 20 (4): 371-88.
- Reardon, T. and Gulati, A. (2008) *The Rise of Supermarkets and their Development Implications: International Experience Relevant for India*. IFPRI Discussion Paper No. 752. Washington, DC: International Food Policy Research Institute.
- Reardon, T. and Timmer, C. P. (2007) 'Transformation of Markets for Agricultural Output in Developing Countries Since 1950: How Has Thinking Changed?' in R. E. Evenson, and P. Pingali (eds), *Handbook of Agricultural Economics 3: Agricultural Development: Farmers, Farm Production and Farm Markets*. Amsterdam: Elsevier Press.
- Reardon, T.; Timmer, C. P.; Barrett, C. B. and Berdegúe, J. (2003) 'The Rise of Supermarkets in Africa, Asia and Latin America', *American Journal of Agricultural Economics* 85 (5): 1140-6.
- Regmi, A., Takeshima, H. and Unnevehr, L. (2008) *Convergence in Global Food Demand and Delivery*. Economic Research Report No. 56. Washington, DC: USDA.
- Richards, T. J. and Hamilton, S. F. (2006) 'Rivalry in Price and Variety among Supermarket Retailers', *American Journal of Agricultural Economics* 88 (3): 710-26.
- Rodriguez, E.; Berges, M.; Casellas, K.; Paola, R. D.; Lupin, B.; Garrido, L. and Gentile, N. (2002) 'Consumer Behaviour and Supermarkets in Argentina', *Development Policy Review* 20 (4): 429-39.

- Rose, D. and Richards, R. (2004) 'Food Store Access and Household Fruit and Vegetable Use Among Participants in the US Food Stamp Program', *Public Health Nutrition* 7 (8): 1081-8.
- Seale Jr, J., Regmi, A. and Bernstein, J. A. (2003) *International Evidence on Food Consumption Patterns*. Washington, DC: USDA.
- Seth, A. and Randall, G. (2005) *Supermarket Wars*. Basingstoke: Palgrave Macmillan.
- Seymour, J. D.; Yaroch, A. L.; Serdula, M.; Blanck, H. M. and Khan, L. K. (2004) 'Impact of Nutrition Environmental Interventions in Point-of-purchase Behavior in Adults: A Review', *Preventive Medicine* 39: S108-36.
- Shulman, M. (2008) 'Nutrition Labelling Gets More Sophisticated', *US News and World Report*, 14 March (<http://health.usnews.com/articles/health/living-well-usn/2008/03/14/nutritional-labeling-gets-more-sophisticated.html>).
- Story, M.; Kaphingst, K. M.; Robinson-O'Brien, R. and Glanz, K. (2008) 'Creating Healthy Food and Eating Environments: Policy and Environmental Approaches', *Annual Review of Public Health* 29: 253-72.
- Swinburn, B., Egger, G. and Raza, F. (1999) 'Dissecting Obesogenic Environments: The Development and Application of a Framework for Identifying and Prioritizing Environmental Interventions for Obesity', *Preventive Medicine* 29 (6): 563-70.
- Tesco (2008) *Tesco Food Ranges* ([https://secure.tesco.com/health/food/healthy\\_eating/tesco\\_food/index.html?](https://secure.tesco.com/health/food/healthy_eating/tesco_food/index.html?)).
- Tesco (2006) *Annual Review and Summary Financial Statement 2006*. Cheshunt, UK: Tesco.
- Tessier, S.; Traissac, P.; Maire, B.; Bricas, N.; Eymard-Duvernay, S.; El Ati, J. and Delpuech, F. (2008) 'Regular Users of Supermarkets in Greater Tunis Have a Slightly Improved Diet Quality', *Journal of Nutrition* 38: 768-74.
- Vorley, B. (2003) *Food, Inc.: Corporate Concentration from Farm to Consumer*. London: International Institute for Environment and Development.
- Wal-Mart (2001) *Wal-Mart Annual Report 2001*. Bentonville, AR: Wal-Mart.
- Wal-Mart (1994) *Wal-Mart Annual Report 1994*. Bentonville, AR: Wal-Mart.
- Wal-Mart de México (2002) *Annual Report 2002*. Delegación Miguel Hidalgo: Wal-Mart de México.
- Wal-Mart de México (2000) *Annual Report 2000*. Delegación Miguel Hidalgo: Wal-Mart de México.
- Walton S. and Huey, J. (1993) *Sam Walton: Made in America*. New York: Bantam.
- White, M. (2007) 'Food Access and Obesity', *Obesity Reviews* 8 Suppl 1: 99-107.
- Wrigley, N. (2002) "'Food Deserts" in British Cities: Policy Context and Research Priorities', *Urban Studies* 39 (11): 2029-40.
- Wrigley, N. (1998) 'Understanding Store Development Programmes in Post-property-crisis UK Food Retailing', *Environment and Planning A* 30: 15-25.
- World Health Organization (2005) *Preventing Chronic Diseases: A Vital Investment*. Geneva: WHO.
- Yale Griffin Prevention Research Center (2008) 'The Overall Nutritional Quality Index (ONQI)' (<http://www.griffinhealth.org/Research/ONQI.aspx>).
- Zenk, S. N.; Schulz, A. J.; Israel, B. A.; James, S. A.; Bao, S. and Wilson, M. L. (2005) 'Neighborhood Racial Composition, Neighborhood Poverty and the Spatial Accessibility of Supermarkets in Metropolitan Detroit', *American Journal of Public Health* 95 (4): 660-7.