



Meat consumption: Trends and quality matters



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ABSTRACT

This paper uses quality theory to identify opportunities for the meat sector that are consistent with trends in meat consumption. Meat consumption has increased and is likely to continue into the future. Growth is largely driven by white meats, with poultry in particular of increasing importance globally. The influence of factors such as income and price is likely decline over time so that other factors, such as quality, will become more important. Quality is complex and consumers' quality expectations may not align with experienced quality due to misconception of certain intrinsic cues. Establishing relevant and effective cues, based on extrinsic and credence attributes, could offer advantage on the marketplace. The use of extrinsic cues can help convey quality characteristics for eating quality, but also for more abstract attributes that reflect individual consumer concerns e.g. health/nutrition, and collective concerns, e.g. sustainability. However, attributes are not of equal value to all consumers. Thus consumer segmentation and production differentiation is needed.

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1. Introduction

This paper explores trends in meat consumption globally and examines the influence of consumers' perceptions of quality on meat consumption, with a particular focus on credence quality attributes. It draws on secondary data to examine consumption trends, and uses the theoretical and empirical contributions on quality theory from the literature to identify quality aspects that are likely to be of increasing importance to the meat industry in the future. Ultimately, this paper aims to help the meat sector identify areas of focus to ensure that consumer confidence in the quality of meat and meat products is maintained and enhanced in light of current and projected consumption patterns.

2. Global trends in overall meat consumption

Food balance sheets offer a blunt but, nonetheless, useful indicator of food consumption trends. While likely to overestimate per capita consumption of meats, these data have been widely used to guide agricultural and food policy due to the availability of data on a global basis, across a wide range of food commodities, over a significant time period. From analysis of the Food and Agricultural Organisation of the United Nations (FAO) Food Balance Sheet data, it is clear that there has been a significant increase in global meat consumption over time (see Table 1). Aggregate meat consumption increased by almost 60% between 1990

and 2009, from 175,665 thousand tonnes to 278,863 thousand tonnes, driven in part by a growing world population (Delgado, 2003). However, per capita consumption also increased by almost 25% from 33.7 to 41.9 kg per capita (see Table 2). This indicates that factors in addition to population growth are influencing demand.

Most noteworthy of these factors is rising incomes in developing countries (Cranfield, Hertel, Eales, & Preckel, 1998; Meade & Rosen, 2013). Delgado (2003) found that the amount of meat consumed in developing countries grew three times as much as it did in developed countries between the early 1970s and mid-1990s, reflecting differential rates of income growth. Declining prices (in real terms) (Palmer, 2011), trade liberalisation, globalisation of food systems and urbanisation (Delgado, 2003) have been identified as other influential factors.

The term "nutrition transition" describes the major transitions in population-level dietary patterns associated with economic development.¹ These transitions are driven by a range of culturally specific factors including the complex effects of urbanisation (Hawkesworth et al., 2010). Amongst other changes, the transition to Pattern 4 in most low and middle-income countries is associated with a trend towards increased consumption of fat, sugar, processed food and animal proteins. This transformation in dietary patterns, and related changes in disease patterns, is highlighted in nutrition and public health literature and is coming increasingly to the fore with global policy makers (e.g. WHO, 2008).

Notwithstanding an upward trend in aggregate per-capita meat consumption, differences are evident when examined by meat category.

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¹ See Popkin (2002, revised 2006): Pattern 1: Palaeolithic man/hunter gathers; Pattern 2: Settlements begin/monoculture period/famine emerges; Pattern 3: Industrialisation/receding famine; Pattern 4: Non-communicable disease; Pattern 5: Desired societal/behavioural change.

Table 1
Global meat consumption, 1990–2009, 1000 tonnes.
Source: Authors' analysis based on FAO (2014).

	1990	2009	% change
Bovine meat	54,065	63,835	18.1
Mutton and goatmeat	9100	12,763	40.2
Pigmeat	68,692	105,503	53.6
Poultry meat	40,173	90,664	125.7
Other meats	3634	6098	67.8
Aggregate	175,665	278,863	58.7

The overall trend was upward for white meats and downwards for red meats. Between 1990 and 2009, bovine meat consumption per capita decreased by approximately 8% while pigmeat consumption increased by approximately 20% and poultry by 75% (sheep and goatmeat consumption increased by 11.8% equivalent however to only 0.2 kg/capita) (see Table 2). The relative price of different types of meat explains some of this variation (Palmer, 2011), with the real price of beef being higher than poultry and pigmeat in most countries.²

2.1. Future meat consumption

Against a backdrop of a generally favourable global economic situation, and growing world population, the future for meat consumption overall is likely to be positive. Indeed world meat consumption growth is expected to be second only to vegetable oil in terms of growth rates of the major agricultural commodities (1.7% per annum for meat vs. 2% for vegetable oil by 2021 (OECD FAO, 2013)). On a geographic basis, most growth is expected from Asia, Latin America and the Middle East, and from developing countries in line. According to Rosegrant, Paiser, Meijer, and Witcover (2001) diet upgrades, made possible by income growth, are expected to double the quantity of meat demanded by consumers in developing countries by the year 2020 (using 1997 as the base year). In contrast, a contraction in consumption is expected in some developed countries as a result of lower rates of income growth and declining populations (European-Commission, 2012). Furthermore, meat consumption per capita appears saturated in these countries (OECD-FAO, 2013) and aging populations, changing demographics as well as increased health and dietary awareness is likely to result in a pattern of slowing consumption growth.

However, a standard pattern is not evident for all meat types. Figs. 1 and 2 present projected changes in meat consumption from 2013 to 2022 based on OECD data for the world and Europe, respectively. Fig. 1 shows that while quantity consumed for all meats is projected to continue to increase, all meats, except poultry are expected to account for a declining share of total meat consumption. Furthermore, sheepmeat's share is projected to decline at a faster rate than pigmeat, which in turn is projected to decline at a faster rate than beef. The further domination of poultry meat is quite evident when the size of the current share of consumption (as depicted by the size of the bubble in Fig. 1) is considered. Thus while growth in aggregate meat consumption is projected to be driven for the most part by increases in poultry and pigmeat, poultry is expected to overtake pigmeat as the most consumed meat in the world by 2022 (European-Commission, 2012).

Fig. 2 shows a slightly different pattern for Europe. Consumption per capita is projected to increase for all meats, except sheepmeat. However beef and lamb are projected to account for a declining share of total meat consumption. Poultry is projected to continue to account for an increased share of consumption, pigmeat is projected to be largely unchanged but beef, and particularly sheepmeat, is projected to account for a declining share of consumption. Thus, while white meat is projected to substitute for red meat in Europe as well as globally, pigmeat is

² The real price for beef, pigmeat and poultry in 2009 was USD \$2700, \$1151 and \$944 respectively (cwe or rtc). Source: OECD-FAO Agricultural Outlook 2011, retrieved 15/5/2014.

Table 2
Global meat consumption, 1990–2009, kg/capita.
Source: Authors' analysis based on FAO (2014).

	1990	2009	% change
Bovine meat	10.4	9.6	-7.7
Mutton and goatmeat	1.7	1.9	11.8
Pigmeat	13.2	15.8	19.7
Poultry meat	7.7	13.6	76.6
Other meats	0.7	0.9	28.6
Aggregate	33.7	41.9	24.3

projected to be a more significant component of white meat in Europe than in the global situation.

Amongst the countries that will drive increased consumption, price is expected to be a big factor. For example, price is expected to be a factor in China and elsewhere in Asia as price elasticity becomes a more influential factor than income elasticity, resulting in poultry being favoured, followed by pigmeat and beef. (Income elasticity is more influential when incomes are lower, i.e. as incomes rise changes in incomes have less of an impact (OECD-FAO, 2013).) Price will also be influential in more developed markets, e.g. the EU where "firm" meat prices, are expected to continue to slow the demand for meat overall, despite an improved economic context (European-Commission, 2012).

Growth in meat consumption in developing countries is likely to continue in response to growing populations and increased incomes. For the meat industry, there will, however, be a challenge in maintaining market share in developed countries and the challenge will be more pronounced for those selling red meats rather than white meats. Consumers in developed countries, with already high levels of per capita consumption, and aging populations are not expected to significantly increase their intake of animal proteins. Furthermore, consumers in developed countries are becoming more interested in meat production systems, animal welfare, food safety and other quality-related matters (OECD, 2013). These issues, which are related to Pattern 5 of the nutrition transition (behaviour change), are likely to have an increased effect on their meat consumption patterns in the future. It will be essential for the meat industry to fully understand how consumers perceive quality and how such perceptions influence their choices, and to determine the most important quality attributes they need to maintain and enhance in existing and new meat products (Troy & Kerry, 2010).

3. Perceived quality as an explanation of consumer choices

Trends in meat consumption suggest that the influence of factors such as income and price will decline over time and that saturation in meat consumption may have been reached in many markets. Thus other factors, such as quality, will become more significant in influencing consumer choice. While many and varied definitions of quality are evident in the literature, ranging from degrees of excellence through to fitness to purpose, when examining quality from a consumer perspective, one has to be concerned with perceptions and one has to be concerned with the emotional and functional dimensions of quality. In this section, the concept of quality from a consumer perspective is dissected and the process by which consumers form quality expectations and evaluate perceived quality is elaborated.

Consumers in all markets demand enjoyable, safe and healthy food products that are of high quality (Trienekens, Wognum, Beulens, & van der Vorst, 2012; Verbeke, Pérez-Cueto, & Barcellos, 2010). However quality from a consumer's perspective is subjective and thus assessments of meat quality can vary across individuals, societies and cultures. Therefore, not surprisingly, exploring quality is complex due to its broad and all-encompassing concept character. Luning, Marcelis, and Jongen (2002), for example, suggest that quality represents the features/properties of a product that result in satisfying consumer physiological and/or psychological needs. In making judgements about

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