Theme:

5. New business models and understandings of human behaviour

This theme addresses the role of new business models and understanding of human behaviour in achieving a socially and environmentally sustainable economy:

Sub theme:

5.4. Changing practices and patterns of human behaviour

Abstract

'Ecological responsiveness of twenty first century food firms: a case study approach'

Over the last decade, carbon footprinting has gathered pace in a bid to address impacts of climate change. Decarbonising economies, principally through decoupling economic growth and energy has become a challenge in many sectors. In the food sector decarbonising is a challenge because of the heterogeneity, variability and complexity of food systems. Similarly, due to the discursive nature of the carbon footprint debate and diversity of methodological approaches, carbon footprinting and labelling are issues that are inextricably linked with the broader debates of climate change and sustainability, both of which are at the forefront of national and international policy formation.

The world's first carbon footprinting standard, developed in the UK was published on 29th October 2008. It specifies a national and internationally applicable life cycle carbon accounting (LCA) method, known as PAS 2050 (developed by DEFRA, BSI and the Carbon Trust). PAS 2050 is a voluntary footprinting standard which can be used by organisations to carbon footprint products in advance of probable future mandatory compliance. For food businesses, carbon footprinting could contribute towards elements of comparative advantage to be seized by early engagement and knowledge of carbon legislative regimes and regulatory frameworks. Food production, processing, packaging and distribution systems will all face directly or indirectly, the issue of carbon footprinting. This will have a strong influence on UK food supply chain actors. Increasing public concern of the environmental impacts of global and national food systems means that supply chain actors will be required to demonstrate how they are responding to the carbon threat. Will footprinting help or hinder key actors in this endeavour?

This research critically examines 'green' perceptions of food supply chain businesses and consumers especially with respect carbon footprinting and labelling. Specifically, in light of the significance of the launch of the world's first standardised life cycle accounting methodology developed and published in the UK, known as PAS 2050, responses were sought from both UK food consumers and food industry businesses including a civic society organisation whose mission is to: *'accelerate the move to a sustainable, low carbon economy'*. To investigate the consumption response, a self-administered closed survey questionnaire (*n=428*) was circulated using a '*convenience sampling approach'* to capture descriptive quantitative attitudinal data of UK 'food shoppers'. Perceptions of food supply chain businesses were investigated through a qualitative case study approach incorporating semi-structured interviews with 'key' food chain actors responsible for their organisation's strategic orientation with respect to the environment and sustainability. Key actor interview data are thematically framed as evidence for policy making within a theoretical framework of '*ecological responsiveness'.* This framework allows for an interdisciplinary approach in seeking insights to further explicate behavioural motivations for engagement with footprinting practices.

The consumer survey shows high demand for carbon footprint labels on food products at 72% (*n=428).* Case studies highlight that LCA carbon footprinting is a useful process approach that further influences the legitimisation of certain interpretations and strategies for sustainable food production and supply. As such, in searching for sustainable pathways towards a lower carbon future efforts to harmonise and standardise voluntary LCA footprinting standards have yet to stimulate a concerted cohesive response from the food industry in the UK. This is exacerbated by a multifarious market landscape with equally diverse interpretations and applications of sustainability (increasingly formulaic in nature) across food

chains. For consumers, not all food products are footprinted making comparisons between product categories impossible via carbon labelling. LCA carbon footprinting and labelling tools will need to be refined to address broader environmental impacts but successfully encouraging a comprehensive shift towards the uptake of pro-active carbon reduction practice is yet to emerge. Further, whilst carbon footprinting remains a voluntary policy based market imperative, its diffusion of uptake is likely to remain limited to those businesses with specific strategies focused on energy reduction leading to mixed up-take rates and fragmented market proliferation.

What is needed is the establishment of effective linkages between food policy and food market actors to drive a targeted and coherent carbon labelling policy that meaningfully shifts business behaviour towards equitable and non-adversarial egalitarian strategies focused on 'triple bottom line' growth across food chains that simultaneously provide consumers with the opportunity to make informed choices within 'same' food product categories.

Summary:

This research investigates the extent to which carbon footprinting and labelling of food products using the world's first carbon footprinting life cycle methodology standard developed and published in the UK stimulates behavioural change amongst food supply chain actors towards 'greener' supply chain practices. The footprinting standard specifies a national and internationally applicable life cycle carbon accounting (LCA) method, known as PAS 2050 (developed by DEFRA, BSI and the Carbon Trust). PAS 2050 is a voluntary footprinting standard which can be used by organisations to carbon footprint products in advance of probable future mandatory compliance. For food businesses, carbon footprinting could contribute towards elements of comparative advantage to be seized by early engagement and knowledge of carbon legislative regimes and regulatory frameworks. Consumer perceptions (the demand side of food supply chains) of carbon labels are explored to seek insights and further gauge the extent to which food consumers' notions of 'footprinting, climate change and sustainability' shape 'greener' purchase behaviours amongst shoppers.

The qualitative data set indicates that supply chain managers give most emphasis to cost being determined by supermarkets as the dominant concern. In terms of their own effectiveness the emphasis is on minimising costs of operations, logistics and supply. While speaking of sustainability as a recurring theme, particularly in food markets, legislation including carbon footprinting and labelling was not seen to have a significant impact in terms of process changes. While legislation in the food service area was deemed necessary, the essential drive was to maintain market position by responding to supermarket chain requirements. Data from 428 UK supermarket shoppers reveal that whilst consumer demand is relatively strong for carbon labels with a stated preference rate of 72%, confusion in interpreting and understanding labels is correspondingly high at a total of 89%, primarily as a result of poor communication and market proliferation.