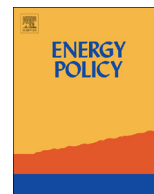




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Integration of energy efficient technologies in UK supermarkets

E.G. Ochieng^{a,*}, N. Jones^a, A.D.F. Price^{b,1}, X. Ruan^{c,2}, C.O Egbu^{d,3}, T. Zuofa^a^a School of the Built Environment, Liverpool John Moores University, Byrom Street, Liverpool L3 3AF, United Kingdom^b Department of Civil and Building Engineering, Loughborough University, Leicestershire LE11 3TU, United Kingdom^c Bristol Business School, University of the West of England, Bristol BS16 1QY, United Kingdom^d School of the Built Environment, University of Salford, Salford M5 4WT, United Kingdom

HIGHLIGHTS

- The effect of sustainability towards consumer behaviour was explored.
- Majority of consumers are unaware of energy efficient technologies.
- Energy efficient technologies do not determine or create shifts in paradigm in consumer actions.
- Stores are driven to integrate energy efficient technologies more by government legislation.
- Participants were clear in making the point that their image and reputation was based on trust.

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ABSTRACT

The purpose of this paper is twofold: to determine if the integration of energy efficient technologies in UK supermarkets can determine consumer behaviour, and to establish if such activities can help satisfying the environmental elements of the clients corporate social responsibilities (CSR) in an attempt to create a competitive advantage. A literature review of existing material considered the history and drivers of sustainability, the types of energy efficient technologies and factors concerning CSR and consumer behaviour in relation to the supermarket industry. Interviews with 15 senior store managers were recorded and transcribed. The opinions of the senior store managers were then sought and analysed using qualitative research software NVivo software. Validity of the data was achieved at a later stage through workshops. The results of this paper suggested that there is a definite lack of awareness and knowledge amongst customers regarding energy efficient technologies. From the findings, it was further established that the key driver for retailers who integrate energy efficient technologies is fiscal incentives, although it was suggested some retailers use CSR strategies to report there are environmental achievements it was ultimately found that cost savings were the primary driver.

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1. Introduction

The UK retail industry is generally split into three areas including, the hard goods industry (appliances, electronics and furniture), the soft goods industry (clothing, apparel and other fabrics) and the food industry. This study has solely focused on the food industry and in particular the UK supermarket, superstore and hypermarket sector. However, it should also be noted that

there are three other sectors which make up the food industry: convenience retailing, traditional retailing and online internet shopping. According to recent research carried out in 2010 by the Institute of Grocery Distribution (IGD) the UK has around 91,509 grocery stores operating in a market place said to be worth an estimated £150.8 billion of which the supermarket, superstore and hypermarket sector is the largest at £107.8 billion. The difference between these stores can be identified by size: supermarkets are defined as having a sales area of 3000–25,000 square feet, and superstores are over 25,000 square feet with hypermarket being greater than 60,000 square feet. For the remainder of this paper, the term ‘supermarket’ is used to cover supermarkets, superstores and hypermarkets.

In the highly competitive supermarket industry, there are threats of tarnishing ones image or reputation by not acting in a sustainable manner, a factor considered by Hirigoyen et al. (2005)

* Corresponding author. Tel.: +44 151 231 2859; fax: +44 151 2312859.

E-mail addresses: e.g.ochieng@ljmu.ac.uk (E.G. Ochieng),

a.d.f.price@lboro.ac.uk (A.D.F. Price), x.ruan@uwe.ac.uk (X. Ruan),

c.o.egbu@salford.ac.uk (C. Egbu), T.Zuofa@2011.ljmu.ac.uk (T. Zuofa).

¹ Tel.: +441509 222627.

² Tel.: +44 1224 263811.

³ Tel.: +44 161 295 6807.

who described how a competitive advantage can be gained by encouraging sustainable practices and publicising their actions to differential themselves. In recent years the four largest UK supermarket retailers have focused on designing and building new flagship supermarkets as well as retro fitting some existing stores with various energy efficient technologies. It could be argued that this achievement can represent an important showcase for the client's business corporate social responsibility credentials, however there is a lack of information relating to the effect integrating energy efficient technologies can have on determining consumer behaviour. The key research question was to explore whether "the integration of energy efficient technologies in UK supermarkets can influence consumer behaviour whilst also satisfying the environmental elements of the client's corporate social responsibilities in an attempt to create competitive advantage". The aim of this research was to explore why clients are integrating energy efficient technologies into UK supermarkets and determine how this can drive consumer behaviour. The next section reviews relevant literature on sustainability, energy efficient technologies and consumer behaviour.

2. Sustainability and sustainable development

The UK construction industry is a hugely significant contributor to the economy, in 2010 the gross value added (GVA) of the construction industry was £90.7 billion, 7.0 percent of the total GVA, and in September 2011 it was reported to provide employment for 2.07 million workers (Maer, 2012). With an estimated 62.3 million people residing in the UK (Office for National Statistics, 2010), the UK retail industry operates to serve tens of millions of visitors each week in order to satisfy the supply and demands of the UK population. The economic significance of the construction industry is reflected by the fact that there can be no economic activity without this industry (Liu et al., 2004), where its performance provides one of the most significant economic indicators (Snape, 1996). Unlike some other industries, which decline over time never to be revived, construction will continue to be an important domestic employer due to the continuous need for new building stock and refurbishment works to existing building stock (Druker and White, 1996).

Over the past decades, sustainable building also known as green building has emerged as a new building philosophy, encouraging environmental friendly resources, maximising recycling and reduces waste production and emphasis on indoor environmental quality (Wang, 2005). It approach to the built environment involves a holistic approach to the design of the building. Khalfan (2002) mention that, although new technologies are increasing being developed to cope with the current practice in building greener structures, the basic priorities for sustainable buildings are to reduce the overall impact of the built environment on human health and natural environment. The success of a sustainable building depends on the quality and efficiency of the green systems installed. What surprises many people unfamiliar with this design movement is that good sustainable buildings often cost little or no more to build than conventional designs (Khalfan, 2002; Wang, 2005).

Sustainable construction is a subset of sustainable development, which supports the 'triple bottom line' perspective, and it has evolved as the construction industry seeks alternative environmental friendly ways to enhance and better protect the natural environment, in addition to minimising its impact on the consumption of energy (especially carbon-based energy) and natural resources (CIBSE Guide F: Energy Efficiency in Buildings, 2004; DETR, 2000, p.8; Moir, 2001). It is necessary to consider sustainable construction practices as what is built today can have a considerable impact on

future development. In fact, it has been argued that sustainable construction practices should be enforced, as the built environment, and how it is developed will influence the ability of future generations to meet their needs (Dickie and Howard, 2000, p.2; Murray and Cotgrave, 2007).

Although it is important to consider the future generations, it can be difficult to actually enforce sustainable construction. Despite significant improvements in best practice one could argue that there is still a definite lack of sustainable practices capable of improving building performance past what is legally required beyond the current Building Regulations. Alternatively, it could be argued that there is a lack of client and customer demand for sustainable construction based on the assumption that sustainable practices are more expensive than traditional methods of construction. It is worth noting that modern methods of construction are able to produce very energy efficient supermarkets. However, just as in conventional cavity construction, the overall energy efficiency of the finished supermarket will depend heavily on getting the original design and specification right.

3. Energy efficient green technologies

The Stern Review (2006) described the scientific evidence of climate change as overwhelming and that it presented very serious global risks which demand an urgent global response. Today, television stations and newspapers are often dominated with headline reports involving natural disasters linked to climate change such as hurricanes, flooding and droughts, therefore it could be argued that this is a factor which has never been more crucial from an environmental perspective or more prudent from a legislation one. However, more recently Hinnells (2008, p.4427) suggested that a massive technological change is needed in the way we heat, light and perform a range of other tasks in our buildings given the imperatives of climate change. Hence any such changes which can help to reduce energy consumptions and carbon emissions by way of increased energy efficiency should be central to meeting the current UK energy and greenhouse gas (GHG) emission targets. Although a significant improvement in building performance would be required as previous research into this area has suggested that the built environment is responsible for 50 percent of the total UK energy consumption, of which 45 percent is to heat, light and ventilate the buildings and the remaining 5 percent to construct them (Better Buildings Report, 2003; Edwards, 2002). Furthermore, it has been suggested that the energy used in constructing, occupying and operating buildings accounts for around 50 percent of GHG emissions in the UK (Better Buildings Summit, 2003, p.2).

Tassou et al. (2011, p.147) recently estimated that buildings such as supermarkets are responsible for around 3 percent of the total electrical energy consumption and 1 percent of the total GHG emissions in the UK. It could be argued that due to the size and nature of modern supermarkets, which are open seven days per week for long hours and in some cases 24 h a day, these stores place additional strains on the environment from their daily operations. According to Tassou et al. (2010, p.268) the main drivers encouraging the integration of the technologies in the food sector are rising energy costs and more stringent regulations on the use of hydrofluorocarbons (HFC) refrigerants and other natural refrigerant alternatives. However the use of energy efficient technologies could provide economic and environmental benefits. Despite this, some obstacles still remain. For instance, Cooke et al. (2007) suggested that the incentive for designers favours that of inefficient buildings, stating that the adaption of new approaches in UK construction is poor, with more awareness of environmental impacts in building design being required.

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