What is Food Poverty? A Conceptual Framework

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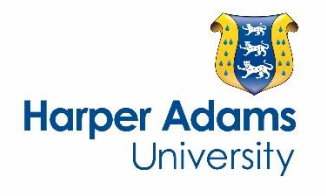

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1 Introduction

As an issue which has seen increased recognition in recent years, food poverty within the United Kingdom (UK) has been subject to public, private and governmental interest. Loopstra & Tarasuk (2013, p.1316) stated that "household food insecurity is increasingly being recognised as a serious public health problem in high income countries". A high level of inflation on essential goods and services, coupled with lower disposable income has increased pressure upon households in achieving an adequate diet. Meanwhile the use of food banks has escalated with all regions affected; consumers have expressed apprehension about food affordability and have petitioned for the issue to be debated in the House of Commons (HC Deb, 2013). Businesses and charities such as Kellogg's, Tesco, Oxfam and Red Cross, have identified the problem and responded proactively by engaging in research, providing support and partnering with food distribution schemes. With these concerns in place, the government has instigated investigations through groups such as; the All Party Parliamentary Group (APPG) and the Department for Environment, Food and Rural Affairs (DEFRA).

Dowler & O Connor (2012) considered food poverty from a rights based perspective, in the role of the government and food systems in the provision and security of adequate food for a nutritionally satisfactory diet. By providing a strong emphasis upon UN agreements for health and nutrition, it was made evident that the government holds responsibility in ensuring that the UK population achieve an equal ability in achieving an adequate diet, particularly in the circumstance where individuals are unable to meet this need. The question of whether this is currently

satisfactory was raised, particularly as national intervention is argued to be less effective than that of local or targeted practices. De Schutter (2009) shared this view stating that “Save in situations of natural disasters or civil strife, the right to food is not the right to be fed; it is the right to feed oneself in dignity’. This has occurred within the UK wherein changes to purchasing behaviour saw households substitute products for lower quality, less nutritious goods which were more calories dense (Griffith, et al., 2013a).

The purpose of this study is to improve understanding of food poverty within the UK through a meticulous examination and synthesis of the dimensions of existing literature in order to provide scope for further research. To achieve this, the review initially develops a comprehensive definition of food poverty and then utilises this to investigate UK food poverty within an international context. A discussion of both points provided an overall insight of the issue, wherein a UK specific definition supports examination of the development of food poverty and how it is currently understood. The comparable international exploration of food poverty furthers the definition on a global scale and contextualises the situation in the UK against that of other countries by highlighting similarities and differences.

2 Review Strategy

An exploratory approach utilising secondary research was conducted to assemble sufficient information to ensure an extensive examination, consisting of several sources inclusive of academia, government, and non-governmental organisations. The literature was screened for relevance following a broad search which primarily focused upon UK publications, with the exception of national data relevant to

specified countries of USA, Canada, Yemen and United Republic of Tanzania (Tanzania). Key literature included national economic data consisting of the consumer price index (CPI) to represent national inflation of goods and services. Additionally studies conducted on behalf of government such as: Lambie Mumford, et al (2014), APPG (2014) are highly relevant to this topic given the scope of the studies, relevance to the UK and their timeliness, it is also demonstrative of the rising interest in food poverty by the government. Prior to this, much of the available literature was produced independently by charitable organisations (e.g. Trussell Trust and Oxfam), some of these studies have been incorporated despite a lack of subjection to a peer review process, as they were produced by reliable organisations.

Timeliness was a crucial factor in the construction of this paper, given the extent of studies conducted in recent years which has increased knowledge of food security and food poverty issues, also given the propensity for change due to economic and national circumstances. As a result of this, 64% of literatures utilised were published between 2013-2014, with 8% published prior to 2005. The parameters of this review were restricted given the breadth of the subject matter, which limited alternative discussion points, including individual knowledge and capabilities, physical access and perceived availability, consumer attitudes, causal linkages with social welfare and sanctions and dietary health needs. These limitations were imposed to enabled a broader discussion of the subject and illustrates the role in which a comprehensive definition can be utilised to encompass the constituents of food poverty.

3 Defining Food Poverty

Maslen, et al. (2013) discussed that the definition of UK food poverty developed over time as understanding advanced and yet there remains no consensus for a standard definition, an impediment for the comprehension and conceptualisation of the issue. This disunity is problematic for several reasons including: as an obstacle in academic and political examination, difficulty in ascertaining the quantity or characteristics of individuals classified as such and constraints in addressing related demands.

A number of widely utilised definitions were examined to distinguish areas of weakness and compatibility and to enable creation of an appropriate definition. These definitions display similarities between food poverty and food security in the corresponding principles to the pillars of food security: access, availability, utilisation and stability. It is important to note that food insecurity can exist without food poverty as a contributing influence however food poverty cannot exist without food insecurity, as illustrated by figure 1. Furthermore it is possible for food insecurity to develop as a result of pressures to an individual pillar, while food poverty is driven by a combination of the pillars. The distinction for food poverty can be identified wherein economic access is the predominant component, although it is not the sole characterising element. This is supported by APPG (2014) who identified the key drivers as: unemployment, debt and reliance on social welfare, in addition to other causes such as: access to information and poor skills. Furthermore Coe (2013, p.332) stated that “food poverty does not simply occur due to a lack of money but also develops as a result of a number of other factors, such as a lack of knowledge, skills or equipment to prepare healthy foods”. The positioning of food poverty within food insecurity is attributed to the role of the individual pillars wherein economic

access was determined to be the predominant influence and availability of goods the lowest impact.

Placement of Figure 1 Relationship between food poverty and food security

The relationship between food poverty and food insecurity can be identified through the similarities in definition of these terms. Food security is defined as "…when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO,1996). This definition was expanded by FAO (2002) to incorporate social access, acknowledging its vital role within the concept. Due to a lack of consensus for a food poverty definition, a range of definitions utilised in the UK were investigated to identify and illustrate the diversity of terminology, definitions identified within Maslen, et al. (2013) were explored, in addition to definitions by authors including; Anderson (1990), Moore (2012) and Food Ethics Council (2013). Food poverty is the inability;

"…to afford, or to have access to, food to make up a healthy diet" (Department of Health, 2005, p.7)

"...to access a nutritionally adequate diet and the related impacts on health, culture and social participation" (Friel & Conlon, 2004, p.120)

".. of individuals and households to obtain an adequate and nutritious diet, often because they cannot afford healthy food or there is a lack of shops in their area that are easy to reach" (Food Standards Agency, 2014)

Furthermore while not specific to food poverty, a frequent term utilised to define food poverty is; “Hunger is the inability to acquire or consume an adequate quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so’ (Radimer, et al. 1992).

The following common features were identified in the majority of the terminology; economic access, quality, quantity, duration and social dimension. Based upon these elements the proposed concise definition was constructed as; food poverty is the insufficient economic access to an adequate quantity and quality of food to maintain a nutritionally satisfactory and socially acceptable diet.

3.1 Components of Food Poverty

3.1.1 Economic access

As previously stated, this principle component is essential as income and price determine the ability to procure food and governs the extent to which an individual can achieve the additional elements, to obtain an adequate quantity and quality of food for a nutritious diet, to ensure that this can be achieved immediately and for the foreseeable future and the role of social attributes. Low income consumers place price as a crucial determinant in food expenditure with other influences including demographic, behavioural and lifestyle characteristics (Burns, et al. 2013 and Lee, et al. 2011).

3.1.2 Adequate quality

Food should be nutritionally satisfactory without being inferior in terms of production, manufacturing or preparation. Products targeted at low income consumers can be substandard comparatively, both in nutrition and condition with Dowler & O Connor (2012) arguing that food poverty had advanced from insufficient economic access to nutritionally poor food choices, as “cheap” food targeted toward low income

consumers can be high in fat, sugar and salt (Dowler, 2008). It has been found that consumers altered expenditure towards products with higher calorie content and fail to meet dietary recommendation, particularly relating to fruit and vegetable consumption (DEFRA, 2013). Price can be an impediment to achieving a healthy diet, however it is conceivable to acquire nutritional sound goods within a lower budget, as demonstrated by Cooper & Nelson (2003) where six basic products were evaluated and found to have higher nutritional value than premium counterparts.

3.1.3 Adequate quantity

Multiple studies have established that many consumers cut back on food purchases and skipped meals as a result of inadequate income (Cooper & Dumpleton, 2013 and McHardy, 2013). It is believed that 36% of retired households cut back on food purchases and 1 in 5 mothers regularly skipped meals to ensure their children could eat (Cooper & Dumpleton, 2013). Increased cost of food has impacted upon purchasing behaviour where consumers between 2007-2012 purchased 7% less food, despite a rise in food expenditure of approximately 20% (Cooper & Dumpleton, 2013). Regardless of sufficient quality, an adequate volume is required to achieve an appropriate diet.

3.1.4 Duration

The classification of Food insecurity as chronic or transitory affects the causes, risks, and solutions and was exemplified through food aid provision where the users of food banks in the UK were identified primarily as experiencing a transitory difficulty, whereby there was a short term, temporary need (Sosenko, et al. 2013). Alternative services such as free school meals and soup kitchens offer continual assistance, providing aid to chronic food insecurity sufferers. The duration and severity of an insufficient diet can impact health as expressed by Martin & Lippert (2012) who contested that low food security is related to being overweight, whereas very low

food security is related to being underweight. This is concerning given the increase in malnutrition of 19% between 2013-2014 and estimates that 25% of population was obese in 2012 (Faculty of Public Health, 2014 and OECD, 2014).

3.1.5 Social dimension

A difference between existing definitions is whether social acceptability is a criterion for inclusion, as several authors excluded the term. It is well established that food serves a purpose beyond nutrition, satisfying emotional, social and cultural needs. Social acceptability is central to food purchasing behaviour as "...the urban food environment shapes and reinforces social stratification" Cannuscio, et al. (2014, pp.18). Burns, et al. (2013) investigated the role of social acceptability within food purchasing behaviour among low income households and found that these decisions were motivated by four goals, to obtain sufficient food to satiate hunger, to acquire desired food products, to gain adequate food when money ran out and to gather food with positive emotional connection. Additionally it was identified that comfort food was purchased regardless of whether sufficient income was available for other expenditure. This is supported by Lee, et al. (2011) who reviewed multiple studies to surmise that additional factors in food purchasing include ethnic background, convenience, habit and body image. Furthermore education and skills can contribute towards risk factors as a higher education level is associated with better diet—while the reduction of at home cooking has negatively impacted the intergenerational transmission of these skills meals (Smith, et al., 2014 and Ricciuto, et al., 2006).

4 Food Poverty: International Perspectives

Between 2005- 2008, global food prices rose by 83% with basic agricultural commodity prices such as wheat, rice, corn and soybean achieving record highs

(UN, 2011 and Mittal, 2009). A study conducted by Seale, et al. (2003) of 114 countries found that low income countries were approximately twice as responsive to changes to food prices as middle or high income countries. Nord, et al. (2014) stated that an increase in the relative price of food compared to CPI of 1% was associated with 0.6% increase in prevalence of food insecurity. Organisation for Economic Co-operation and Development (OECD) countries were found to experience significantly lower inflation, with a peak of 7% in 2008, compared with 23% in Africa (Economist, 2014). This is illustrated by the range of volatility experienced by the countries examined, with the exception of the USA where data was unavailable, as shown in table 1. Conversely, volatility in the UK exceeded that of Tanzania at several conjectures, demonstrating the extent of volatility which impacted the UK.

Placement of Table 1 Annual domestic food price volatility index (FAO, 2014a)

Net food consumers in developing countries spend a large percentage of expenditure on food, estimated between 60-80%, contrasted with 10-20% in wealthy countries (UNCTAD, 2008). Within urban areas in developing countries, there are fewer food producers, and households are reliant upon market systems to access food, leaving them susceptible to the price volatility (Tacoli, et al., 2013 and Mittal, 2009).

As a result of the food price spike, poverty rates measured as US$1p/day increased by 4.5% in low income countries (Ivanic & Martin, 2008). This is supported by Wodon & Zaman (2009) who found that higher prevalence of poverty in Sub Saharan Africa was attributable to the negative effect of inflation on consumer purchasing power.

Internationally it is estimated that 68million additional individuals fell below the poverty line as a direct consequence of rising food prices in 2007-08 (World Bank, 2011). In 2012, 28.2% of Tanzania were classified as below the national poverty line, with 43.5% had an income lower than $1.25 a day and 73% below $2per day (World bank, 2014), The food price spike of 2007-08 increased poverty levels in Yemen by 44%, with 45% of the population below the poverty line (UNICEF & WFP, 2014). Extreme poverty is less prevalent in developed countries, given higher levels of household income; however relative poverty remained comparatively stable. In 2013, 14.5% of American and 11.9% of Canadian population were classified as experiencing relative poverty, in comparison to 15% of the UK population BHC (DeNavas-Walt & Proctor, 2014 and OECD, 2014).

An inability to afford food increases susceptibility to health risks due to an inadequate diet, such as malnutrition, nutrition deficiencies and stunting (Tacoli, et al., 2013 and UN, 2011). Internationally 805million individuals were estimated to be chronically undernourished in 2012-2014, the majority of whom are resident in developing countries, approximately 790.7million individuals, the remaining 15 million individuals are in developed countries (Food and Agriculture Organisation (FAO), 2014b). Despite food insecurity pressures overall the volume of individuals reported as malnourished internationally has reduced from 18.7% in 1990/92 to 11.3% in 2012/14.

Economic accessibility of food is vital to national security and insufficient access can result in extreme reactions, as demonstrated by the food price riots of 2007-2008 where many countries experienced civil unrest and violent protests (Berazneva & Lee, 2013). there were a number of underpinning circumstances which contributed towards the food riots of 2007-08, which were explored by Berazneva & Lee (2013),

whereby causal linkages were found between the likelihood to particpate in food riots and economic, demographic and political elements related to poverty, urbanization, oppressive political structures, and higher civil liberties in addition to coastal location and food availability and access.

4.1 Case Studies: Developing Countries

Tanzania was ranked as 159 of 187 countries in 2014 UNDP human development index, due to the extent of poverty and deprivation, with 19% of the population living below the food poverty line in 2007 and 43% of households not consuming enough calories in 2010-11 World Food Programme (WFP) (2013). Comparatively, Yemen was graded as 154 but was the 8th most food insecure country in the world (Von Grebmer, et al., 2014) with 10.6 million individuals, 41% of the population food insecure in 2014 (UNICEF & WFP, 2014). Attributable to food security risks relating to socioeconomic problems aggravated by 07-08 price spike and 2011 politic crisis, in addition to resource depletion and environmental threats (UNICEF & WFP, 2014). While the causes of food insecurity in Tanzania are inclusive of drought, high food and oil prices, insufficient infrastructure, seasonal shortages and lack of dietary diversity. Both countries recorded high levels of chronic and acute health concerns relating to malnutrition, stunting and dietary deficiencies, in Yemen, 46.6% of children were stunted or chronically malnourished (SOFI, 2014), with just 12.4% meeting WHO's dietary diversity recommendations (UNICEF & WFP, 2014). In Tanzania 34.6% of children were malnourished between 2012-2014 (FAO, 2014b).

Food price inflation is above that of average inflation rates, and significantly higher than that in developed countries. Given that a higher percentage of expenditure in these areas is attributable to food purchases, any increase in prices can create reduction in affordability. High inflation contributed towards diminished food security

in both countries, with food prices in Tanzania volatile and consistently above inflation rates with both countries experiencing a significant increase, although political unrest in Yemen contributed to the sharp incline in 2011, as shown in figures 2 and 3.

Placement of Figure 2 CPI in Tanzania, 2010= 100. (derived from National Bureau of Statistics, 2014)

Placement of Figure 3 CPI in Yemen, 2008=100. (derived from Central Statistical Organisation, 2014; Central Statistical Organisation, 2010)

It is evident that both countries were subject to poor government coping strategies, and as such were reliant on external aid. More than half the population of Yemen, 14.7million individuals relied on humanitarian assistance in 2014 according to the Yemen humanitarian response plan, with approximately 6million individuals reached through WFP's main programme (UNICEF & WFP, 2014). Less physical food aid is provided to Tanzania where WFP supplies food approximately 1.6million individuals through programmes such as food for education, food for assets and maternal and child health programme. These countries have been experiencing severe food security risks, of which food poverty, driven by reduced purchasing power and inflation is one of many contributing elements.

4.2 Case Studies: Developed Countries

In Canada, food insecurity has been consistently monitored and has shown a steady increase from 2005. In 2012, approximately 13%, 4 million individuals were food insecure (Tarasuk, et al., 2014). Similarly in America, food insecurity was found to rise substantially between 2008- 2013, from 36.2 million in 2007 to 49.1million (approximately 15%), with 6.8million recorded as in very low food insecurity

(Coleman-Jensen, et al., 2014). However Weinfield, et al. (2014) argued that 17.6million were food insecure, which highlights the disparity in preferred measurement systems.

Coping strategies for food shortages were similar between these countries, and differ dependant on duration, with the most utilised options including delaying bills, rent and selling possessions (Weinfield, et al., 2014 and Loopstra & Tarasuk, 2013b). In America, it was found that 96% of respondents substituted products, while 88% reduced the volume used, while 79% purchased unhealthy inexpensive food, 40% watered down food and drink (Feeding America, 2012). Whereas in food insecure households in Canada, 98.1% stated they had reduced portion size or skipped meals, 83.1% relied on low cost food for children's meals (Tarasuk, et al., 2014).

Additionally there are charitable and governmental services which provide aid to food insecure households. Federally assisted programmes in America have an uptake of approximately 60% amongst food insecure households of at least one programme. In spite of this in 2012, 27% of the food insecure were ineligible for federal assistance as household income was above the required criteria (Weinfield, et al., 2014). Due to this, there is reliance upon alternate food assistance, of which there is an extensive system that is partially supported by Feeding America, who provide food for an estimated 46.5million individuals per year, equating to approximately 62% of national food aid distribution (Weinfield, et al., 2014). Comparatively a survey of 4,743 food banks in Canada were found to assist 833,098 individuals in March 2013, an increase of 23% from March 2008 (Food Banks Canada, 2013), although just ¼ of food insecure Canadians are believed to avail of this, due to preference or inaccessibility. With food banks usually providing 5 days were of food to each individual, this is suggestive that approximately 3,500,000 meals were distributed.

Additionally it was recorded that 4,341,659 meals were provided by other services such as soup kitchens, breakfast clubs and shelters (Food Banks Canada, 2013).

Volatile food prices contributed to reduced purchasing power, food prices exceeded the average rate of inflation. Figures 4 and 5 show the difference in CPI for Canada and USA, where the initial peak in food prices was experienced first by USA, both countries saw a significant drop the subsequent years as reactive measures were enacted.

Placement of Figure 4 CPI Canada, 2002=100. (derived from Statistics Canada, 2014)

Placement of Figure 5 CPI USA, 2005=100. (derived from Crawford & Church, 2014)

5 Food Poverty: UK

From a historical perspective, in the UK gross disposable household income (GDHI) was relatively high in 2013 yet in real terms from 2009, income had reduced to levels of 2002-03 (Office of National Statistics (ONS), 2014a and Levy, 2013). Equivalised income levels developed at different rates for socio economic groups, and in the period 2007/08-2012/13 the greatest reduction in income was experienced by the top quintile (5.2% reduction of £3300); comparatively the bottom quintile experienced an increase of 3.5% (£400) (ONS, 2014a). There is an unequal distribution of income between locations, as demonstrated by GDHI per person in 2012 in table 2 where London the highest levels were recorded in London at 27.7% above the national average, whereas the lowest income was found in Northern Ireland at 17.2% below (ONS, 2014b).

Placement of Table 2 GDHI per head 2012, (data from ONS, 2014b)

Lee, et al. (2014) found that much of UK poverty is centralised to cities and that areas with relatively low poverty rates, retain "concentrations of deprivation", which illustrates location based inequality. From 2008, individuals who had been suffering from poverty have experienced greater levels of deprivation, while more people have become increasingly vulnerable due to economic stagnation, increased living costs and public service reductions (Oxfam, 2012 and Joseph Rowntree Foundation, 2013a). Following 2007; households have also been subjected to benefit cuts, lower disposable income and unemployment, furthering financial pressures (Coe, 2013).

In 2012, 13 million people were estimated to be in relative poverty after housing costs (figure 6) with 21% of the population were estimated to be in relative poverty in 2012/13 (Department Work and Pensions (DWP), 2012). Comparatively before housing costs, relative poverty was recorded at a lower level (6% lower in 2012/13), indicating that this fixed cost can increase vulnerability to poverty.

Placement of Figure 6 Percentage of individuals in relative poverty. (data from ONS, 2014)

In a study of multiple deprivation ONS (2013) identified that approximately 1/3 of the population were unable to cope with unexpected financial expenses, however Gordon, et al. (2013) stated that almost half the UK population are experiencing financial insecurity, with 18million people unable to afford adequate housing conditions and 4million improperly fed. There was a 10% increase in the percentage

of the country unable to cope with unexpected financial costs from 2007-11 which demonstrates a rise in households inability to adapt to shocks (table 3).

Placement of Table 3 Percentage of population unable to afford specific items 05-11. (data from DWP, 2012)

Increased inflation can exacerbate pressure on household budgets and CPI annual rate of inflation shows volatility within the previous decade, with peaks in 2008 and 2011, comparable to international trends. Inflation was inconsistent across expenditure categories (figure 7) where overall between 2007-2014, CPI increased by 21.5% while food (35.9%), alcohol (43.9%) and housing & fuel (34.1%) all demonstrated significantly higher increases in price.

Placement of Figure 7 Difference in CPI 2007-2014. (data from ONS, 2014a)

It is important to note that food inflation regularly exceeded CPI for all items (figure 8) and that food prices in 2014 remained at similar levels to the previous year which contrasted to the volatility shown in the earlier stages. Within this category, all items increased in price from 28% for milk, egg and cheese to 47.8% for oils and fats, as shown in figure 9. Inflation affected all food goods and occurred at separate points during the 2007-2014 period. The greatest annual increase in price occurred in 2008, with highs of 17.2% for oils and fats and 15.1% for milk, egg and cheese.

Placement of Figure 8 CPI UK, 2006=100. (data from ONS, 2014a)

Placement of Figure 9 Growth in CPI inflation 2007-14. (data from ONS, 2014a)

Food accounts for 17.5% of total household expenditure on average, succeeded by fuel and housing. Increased inflation of this category affects available funding for other expenditure categories (Griffith, et al., 2013a). Low income households are particularly susceptible to food price increases as argued by Lang & Schoen (2014), Revoredo-Giha, et al., (2009) and Downing, et al., (2014). A study of consumer perception found that increased cost, particularly of food was a particular concern to consumers with 37% of respondents stating that they were finding it difficult to afford the variety of food they wanted, a figure which increased to 50% for households with income below £14000 (Dowler, et al., 2011)

One change in consumer purchasing behaviour has been product substitution, reflected in the growth of discount retailers such as Aldi and Lidl, where consumers have elected to move from national brands towards cheaper products. Consumer studies have found that as a result of "economic stagnation", consumer behaviour has altered, with lower levels of brand loyalty, with greater focus upon price (Lamey, 2014). As discount retailers offer a means to reduce food expenditure, they have experienced growth as a result. Reduced purchasing power is linked to the growth of both hard and soft discount retailers (Lamey, 2014). Grocery discount retailers grew by 33.4% between 2008 and 2011 with 6.2% of grocery sales in 2014, with this trend predicted to continue with sales estimations of 10.9% in 2019 while supermarket own label products have grown by 9.3% annually (Institute of Grocery Distribution (IGD), 2014 & Keynote, 2013). This behaviour change illustrates that people are changing where they shop, away from where they would normally go, driven partially by price.

6 Discussion

Through an examination of existing literatures on the subject, food poverty has been defined as the insufficient economic access to an adequate quantity and quality of food to maintain a nutritionally satisfactory, socially acceptable diet. This brief, comprehensive term encompasses five elements which are popularly utilised within the current knowledge of the issue, yet differentiates itself in several ways. First this definition was developed specific for UK application with an awareness of the influential role of household finance in meeting dietary requirements. Secondly, simple terminology was employed to enable multi level use and understanding. Thirdly, the role of a social dimension is recognised as a pertinent factor to individual requirements given the influence of factors such as education, skills, culture, preferences, and emotional relationship with products.

Definitions which discuss food poverty have been widely utilised in the UK, however it is argued that these established definitions are insufficient to describe food poverty. Faults in established definitions include misrepresentation wherein quotes have been taken out of context (Radimer, et al., 1992), overly generalised, where the term is descriptive of food security rather than focussed upon food poverty (Anderson, 1990) and incomplete terminology, in that all contributing factors to food poverty have not been included (Department of Health, 2005).

6.1 UK Food Poverty

Food prices in the UK were found to increase higher and persist longer than other OECD countries and this prolonged experience increased the cumulative effect upon individuals, worsening their circumstances (Griffith, et al., 2013a). Purchasing power reduced due to a decline in real income and increased inflation, for example median real income for parents with dependent children fell 7.5% between 2007-2011

(Griffith, et al., 2013a). Food, as a relatively flexible expense allows consumers to reduce expenditure on this category. Griffith, et al. (2013b) explored the difference in consumer purchasing behaviour between 2005-07 and 2010-12 and found that all households reduced real expenditure on food and on average, households reduced real expenditure on food (into the home) by 8.5% and reduced purchased calories by 3.6%, equating to a lower expenditure per calorie of 5.2%. However Coe (2013) found that the lowest income households spent 17% more on food between 2007-11, and received 3.2% less products.

The increased pressure upon households has increased reliance upon food assistance, as demonstrated with the growth of Trussell Trust which showed growth of 32,350% between 2005-06 to 2013-14, with 913,138 people utilising the service in 2013-14 (figure 10). There have been several publications relating to food parcel distribution; Lambie-Mumford, et al. (2014), Maslen, et al. (2013), Downing, et al. (2014) and Lyall, (2014), which found a growing demand for food assistance throughout the country however data on demand for other services is unavailable, and figures for food bank usage is reliant upon Trussell Trust data although there are multiple food assistance resources available which have yet to be examined. While this information may be indicative of national growth experienced by food parcel providers, Sosenko, et al. (2013) identified that Trussell Trust was not necessarily the dominant provider of food aid in all areas. Comparatively, it was believed that Trussell Trust provided approximately two thirds of food parcels for Dundee and 20% in Glasgow (Sosenko, et al., 2013).

Placement of Figure 10 Percentage growth in Trussell Trust reliance. (data from Trussell Trust, 2014)

6.2 UK and International Comparison

A fundamental dissimilarity expressed by Nord (2009) that starvation is a rare occurrence in developed countries, with a more likely outcome to be a reduction in quality and quantity of food amongst low-middle income households. Dowler & O Connor (2012) supported this belief, stating that as a result of diminished affordability the frequency of food consumption and the nutritional quality of food had reduced. Evidenced by the prevalence of malnourishment and nutrient deficiency in developing countries and obesity and over nutrition in developed countries.

Darmon & Drewnowski (2008) found a correlation in developed countries between income and obesity and micronutritient deficiency, with the causal mechanisms between diet quality and low income consumers consisting of food prices & diet costs, food access, education & culture while Ricciuto, et al. (2006) and Smith, et al. (2014) found that knowledge, skills, time and available funds contribute towards individuals diets, with low income consumers purchasing less raw ingredients such as fruit and vegetables, in favour of ready to eat and calorie dense products.

The development of inflation within the case study countries examined, table 4 shows that inflation was significantly higher and more volatile in developing countries, yet the UK regularly exceed inflation for the other developed countries, consistent with food price volatility.

Placement of Table 4 CPI annual percentage change. (Data from Crawford & Church, 2014; Statistics Canada, 2014; Central Statistical Organisation, 2014; Central Statistical Organisation, 2010 and World Bank, 2014b)

Reliance upon food aid was found to increase in developed countries, however at a lower growth rate than the UK, while physical food aid towards developing countries

has fallen. Reliance upon food banks in developed countries is significant with millions of meals distributed each year. Despite established measures available to address this demand, the level of support following the reduction in food affordability failed to completely meet the needs of individuals, in most developed or developing countries.

The volume of users has been monitored for these services in many countries, a matter which has not been possible within the UK, as there is currently no cohesive body to track this development. Similarly, food poverty has been explored in depth within the case study countries, providing a foundation upon which to compare the UK situation however further research is required in the uk to ascertain nationally specific understanding. This is emplefied by the countries examined who held measurement toolkits to determine the quantity of indivuals classified as food insecure or as food impoverished, such methods have not been undertaken within the uk.

Other food insecurity risks which occur concurrently increase the risk of food poverty, as seen in developing areas, yet within the UK, the affordability of food is the predominant concern. The cumulative impact of food poverty can reduce resilience and prolong the negative consequences for individuals.

7 Conclusion

Food poverty is not a new problem as a result of food price spikes of 2007/08, as evidenced by a history of food aid. However increases in food and energy prices reduced food affordability for almost all socio economic groups around the world with the lowest income households impacted most severely. As an area with numerous

gaps in research, there is broad scope for further study to fully understand the extent of the situation both internationally and within the UK.

An identification of the components of food poverty through an examination of the existing terminology enables the creation of a definition which encompasses all contributing factors. The advantage in ascertaining this information is to promote unity in discussion and examination by all interested stakeholders, where previously discord and misunderstanding impeded discussion and examination of the subject. Establishing a definition facilitated examination of the UK and international environment, in addition to empowering further research and minimising current gaps in knowledge.

Comparative to the countries examined, the UK has significant gaps in understanding inclusive of; numbers and classification of individuals experiencing or vulnerable to food poverty, causes and symptoms of food poverty, methods of alleviation, short and long term consequences associated with transitory and chronic food poverty, impact upon consumer behaviour and coping strategies employed. These are areas which have been analysed in other regions with recognisable parallels; however there are limited academic studies which are UK specific. Utilising available knowledge from areas with substantial expertise, these issues are recommended for further research, to improve understanding of the subject relevant to the UK.

Despite indications that UK food poverty is an escalating problem, due to limited measurement studies, this cannot be presented with certainty, as such the creation and application of measurement indicators would be beneficial to quantify individuals classified as in food poverty. Furthermore, there is a general lack of knowledge

regarding identification of vulnerable individuals particularly amongst minority groups, and whether any correlation exists with influences such as; ethnicity, religion and education. In addition to ascertaining the severity of this problem, it would improve the ability to target vulnerable individuals.

As a subject which has been acknowledged as a significant concern to society, it would be advantageous to determine the extent of national food poverty, both in the short term (to identify and meet the needs of vulnerable individuals) and in the long term (to determine the long term impacts of the present problem and to forecast likely trends). By investigating food poverty from a broad focus, it was found that this was not exclusive to the UK, and as an ongoing challenge it appears to be escalating, both nationally and internationally.

References

Anderson, S. A. (1990) Core Indicators of Nutritional State for Difficult-to-Sample Populations, Journal of Nutrition, Nov 1990, vol.120, pp. 1559-1600

All Party Parliamentary Group on Hunger and Food Poverty (APPG) (2014) Feeding Britain; A Strategy for Zero Hunger in England, Wales, Scotland and Northern Ireland, the Children's Society, London, 8.12.2014

Berazneva, J. & Lee, D.R. (2013) Explaining the African Food Riots of 2007–2008: An Empirical Analysis, Food Policy, vol. 39, pp. 28-39

Cannuscio, C.C., Hillier, A., Karpyn, A. & Glanz, K. (2014) The Social Dynamics of Healthy Food Shopping and Store Choice in an Urban Environment, Social Science and Medicine, Vol. 122, pp. 13-20

Central Statistical Organisation (2014) Statistical Yearbook 2013, 22.07.2014, available at: http://www.cso-yemen.org/

Central Statistical Organisation (2010) Statistical Yearbook 2009, 13.06.2010, available at: http://www.cso-yemen.org/

Coe, S. (2013) Feeding the Family, Are Food Prices Having an Effect, British Nutrition Foundation, Nutrition Bulletin, vol. 38, pp 332-336

Coleman-Jensen, A., Gregory, C., & Singh, A. (2014) Household Food Security in the United States in 2013, EFF-173, US Department of Agriculture, Economic Research Service, Washington, Sept 2014

Cooper, N. & Dumpleton, S. (2013) Walking the Breadline; the Scandal of Food Poverty in 21st Century Britain, Oxfam & Church Action on Poverty, Manchester, May 2013

Cooper, S. & 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, vol. 16, no. 5, pp.339-347

Crawford, M. & Church, J. (2014) CPI Detailed Report, US Bureau of Labour Statistics, Washington, Aug 2014

Darmon, N. & Drewnowski, A. (2008) Does Social Class Predict Diet Quality? American Journal of Clinical Nutrition, Vol. 87, pp.1107-1117

DEFRA (2013) Family Food 2012, Family Food Statistics, DEFRA, London, 12.12.2013

Department of Health (2005) Choosing a Better Diet: A Food and Health Action Plan, NHS, London, 09.03.2005

Department of Work & Pensions (DWP) (2012) Households Below Average Income. An Analysis of the Income Distribution 1994/95 – 2010/11, London, June 2012

DeNavas-Walt, C. & Proctor, B.D. (2014) Income and Poverty in the United States: 2013, US Census Bureau, Current Population Reports, Washington, Sept 2014

De Schutter, O. (2009) The Right to Food and the Political Economy of Hunger, Twenty-sixth McDougall Memorial Lecture, Opening of the 36th Session of the FAO Conference

Dowler, E (2008) Policy Initiatives to Address Low-Income Households' Nutritional Needs in the UK, Proceedings of the Nutrition Society, vol. 67, pp. 289-300

Dowler, E, Kneafsey, M, Lambie-Mumford, H., Inman, A., Collier, R (2011) Thinking About Food Security, Engaging With UK Consumers. Critical Public Health, Vol. 21, No. 4, pp. 403-416

Dowler, E. & O'Connor, D (2012) Rights Based Approaches to Addressing Food Poverty and Food Insecurity in Ireland and UK, Social Science and Medicine, Vol. 74, pp. 44-51

Downing, E., Kennedy, S. & Fell, M. (2014) Food Banks and Food Poverty, House of Commons Briefing Paper, London, 09.04.2014

FAO (2014a) Food Security Indicators; Domestic Food Price Volatility, 17.11.2014, available at: www.fao.org

FAO (2014b) The State of Food Insecurity in the World, FAO, IFAD & WFP, Rome, 16.09.2014

FAO (2002) The State of Food Insecurity in the World 2001. Rome

FAO (1996) Rome Declaration on World Food Security and World Food Summit Plan of Action, World Food Summit, 13-17 November 1996, Rome

Feeding America (2012) In Short Supply; American Families Struggle to Afford Everyday Essentials, Chicago, available at:www.feedingamerica.org

Food Banks Canada (2013) Hunger Count, Food Banks Canada, Toronto

Friel, S. & Conlon, C. (2004) Food Poverty and Policy Ireland: Combat Poverty Agency, Dublin, April 2004

Food Standards Agency (2014) Food Poverty, available at: www.food.gov.uk

Griffith, R., O'Connell, M. & Smith, K. (2013a) Food Expenditure and Nutritional Quality over the Great Recession, IFS Briefing Note BN143, ESRC, Nov 2013

Griffith, R., Lluberas, R. & Lührmann, M. (2013b) Gluttony in the UK? Long-Term Change in Diet, IFS Briefing Note BN142, Nov 2013

Gordon, D., Mack, J., Lansley, S., Main, G., Nandy, S., Patsios, D. & Pomati, M. (2013) The Impoverishment of the UK, Poverty and Social Exclusion, ESRC, 28.03.2013

House of Commons Hansard Debates, 18.11.2013, col. 806

Institute of Grocery Distribution (IGD) (2014) UK Grocery Market to be Worth £203bn by 2019, 30.06.2014

Ivanic, M. & Martin, W. (2008) Implications of Higher Global Food Prices for Poverty in Low-Income Countries. World Bank Policy Research Working Paper, No. 4594 Washington, World Bank. April 2008

Keynote (2013) Discount Retailing Market Update 2013, available at: www.keynote.co.uk

Lamey, L. (2014),"Hard Economic Times: A Dream for Discounters", European Journal of Marketing, Vol. 48, no. 3/4 pp. 641-656

Lang, T. & Schoen, V. (2014) UK Food Prices, Cooling or Bubbling. Food Research Collaboration

Lee, J H, Ralston, R.A. & Truby, H (2011) Influence of food Cost on Diet Quality and Risk Factor for Chronic Disease: A Systematic Review. Nutrition and Dietetics, vol. 68, pp. 248-261

Lee, N., Sissons, P., Hughes, C., Green, A., Atfield, G., Adam, D. & Rodriguez-Pose, A. (2014) Cities, Growth and Poverty; A Review of Evidence. Joseph Rowntree Foundation, Feb 2014

Loopstra, R .& Tarasuk, V. (2013) Severity of Household Food Insecurity is Sensitive to Change in Household Income and Employment Status Among Low Income Families, American Society for Nutrition, Journal of Nutrition, vol. 113, 12.06.2013

Martin, M. A. &Lippert, A (2012) Feeding her Children, but Risking her Health: The Intersection of Gender, Household Food Insecurity and Obesity, Social Science and Medicine, vol. 74, no. 11, pp. 1754-1764

Maslen, C., Raffle, A., Marriot, S and Smith, N (2013) Food Poverty, What Does the Evidence Tell Us, Appendix, Bristol City Council, July 2013

McHardy, F. (2013) Surviving Poverty, The Impact of Loan Parenthood, Research into Impacts of Poverty on Lone Parents in Rural Fife, Poverty Alliance

Mittal, A (2009) The 2008 Food Price Crisis: Rethinking Food Security Policies, G-24 Discussion Paper Series, UNCTAD, No. 56, June 2009

Moore, R (2012) Definitions of Fuel Poverty, Implications for Policy, Energy Policy, Vol. 49, pp. 19-26

National Bureau of Statistics (2014) Annual Average Inflation Rates for the Past Five Years from 2009 – 2013, Dar es Salaam, Tanzania, 08.01.2014

Nord, M., Coleman-Jensen, A. & Gregory, C. (2014) Prevalence of U.S. Food Insecurity is Related to Changes in Unemployment, Inflation, and the Price of Food, USDA, Economic Research Report Number 167, Washington, June 2014

Nord, M (2009).Food Spending Declined and Food Insecurity Increased for Middle-Income and Low-Income Households from 2000-2007, Economic Information Bulletin, No. 61, United States Department of Agriculture, Economic Research Service, Washington, Oct 2009

OECD (2014) Obesity And The Economics Of Prevention: Fit Not Fat, Key Facts – England, Update 2014, 27.05.2014, available at: www.oecd.org

ONS (2014a) Consumer Price Indices - CPI indices: 1988 to 2014, Dataset, accessed 01.08.2014, available at:http://www.ons.gov.uk/ons/datasets-and-tables/data-selector.html?cdid=D7BT&dataset=mm23&table-id=1.1

ONS (2014b) Regional Gross Disposable Household Income 2012, ONS, London, 04.06.2014

ONS (2013) Poverty and Social Exclusion in the UK and EU 2005-11, ONS, London, 16.01.2013

Radimer, K. L., Olson, C. M., Green, J. C., Campbell, C. C. & Habicht, J. P. (1992). Understanding Hunger and Developing Indicators to Assess it in Women and Children, Journal of Nutrition Education, Vol.24, no.1, pp. 36-44

Revoredo-Giha, C., Leat, P., Kupiec-Teahan, B., Lamprinopoulou, C. & Cacciolatti, L. (2009) Assessing the Effect of the Rise in Food Prices on the Purchasing Power of Consumers in Scotland, Project Report, Scottish Agricultural College

Ricciuto, L., Tarasuk, V. & Yatchew, A. (2006) Socio-demographic Influences on Food Purchasing Among Canadian Households, European Journal of Clinical Nutrition, vol. 60, pp. 778–790

Seale, J., Regmi, A. & Bernstein, J. (2003) International Evidence on Food Consumption Patterns, Technical Bulletin 1904, Washington, United States Department of Agriculture

Smith, L.P, Ng, S.W. & Popkin, B.M (2014) Resistant to the Recession: Low-Income Adults' Maintenance of Cooking and Away-From-Home Eating Behaviors During Times of Economic Turbulence, American Journal of Public Health, Vol. 104, no. 5, pp. 840-846

Sosenko, F., Livingstone, N. & Fitzpatrick, S. (2013) Overview of Food Aid Provision in Scotland, Edinburgh, Scottish Government

Statistics Canada, (2014) Consumer Price Index, Table 326-0021, available at: http://www5.statcan.gc.ca/cansim/a47

Tacoli, C., Bukhari, B., & Fisher, S. (2013) Urban Poverty, Food Security and Climate Change, Human Settlements Working Paper No.37, Rural-Urban Interactions and Livelihood Strategies, International Institute for Environment and Development, March 2013

Tarasuk, V., Mitchell, A. & Dachner, N, (2014) Household Food Insecurity in Canada 2012, Research to Identify Policy Options to Reduce Food Insecurity (PROOF), Toronto

UNICEF & WFP (2014) Comprehensive Food Security Survey, WFP, Yemen, November 2014

Von Grebmer, K., Saltzman, A., Birol, E., Yohannes, Y., Menon, P., Thompson, J., Wiesmann, D., Prasai, N., Yin, S. and Sonntag, A. (2014) Global Hunger Index, The Challenge of Hidden Hunger, IFPRI, 30.10.2014

Weinfield, N., Mills, G., Borger, C., Gearing, M., Macaluso, T., Montaquila, J. & Zedlewski, S. (2014) Feeding America, Hunger in America 2014, National Report, Washington, August 2014

Wodon, Q. & Zaman, H. (2009) Higher Food Prices in Sub-Saharan Africa: Poverty Impact and Policy Responses. World Bank Research Observer Vol.25 no.1, pp.157–176

World Bank (2014), World Development Indicators, Poverty Headcount Ratio, available at: www.data.worldbank.org

World Bank (2014b) World Development Indicators, Inflation; Consumer Prices, available at: www.data.worldbank.org

World Bank (2008) Global Food Prices for Poverty in Low-Income Countries, World Bank Policy Research Working Paper, No. 4594, Washington, World Bank, April 2008

World Bank (2011) Food Price Watch, World Bank Washington, February 2011

WFP (2013) Comprehensive Food Security and Vulnerability Analysis, Tanzania 2012, WFP, Sep 2013

Figures

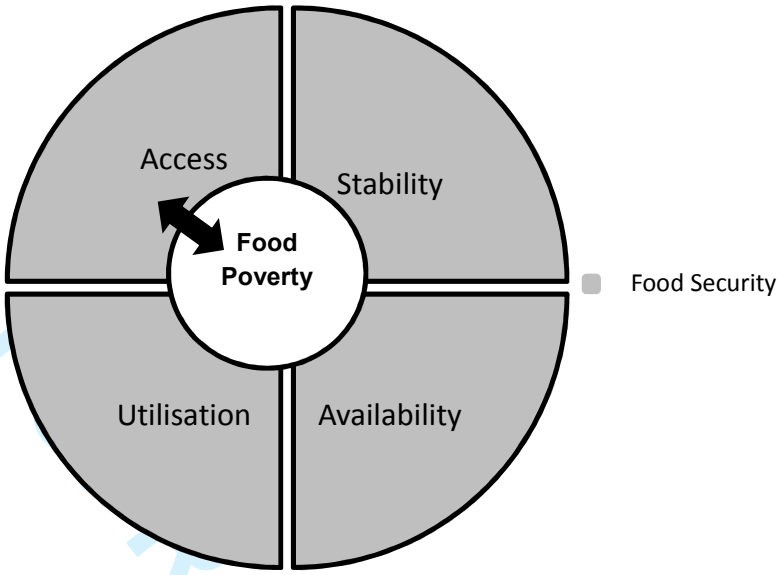

Figure 1 Relationship between food poverty and food security

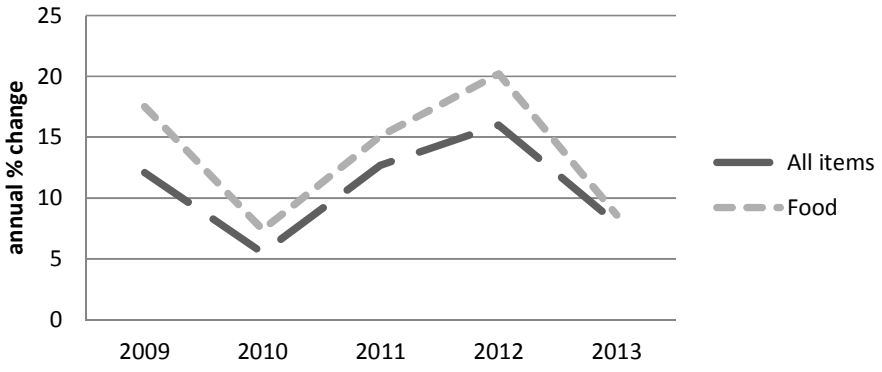

Figure 2 CPI in Tanzania, 2010= 100. (derived from National Bureau of Statistics, 2014)

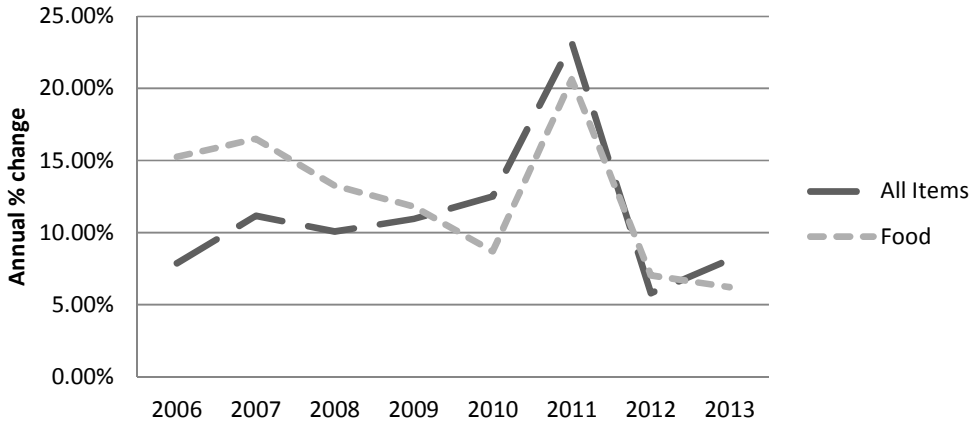

Figure 3 CPI in Yemen, 2008=100. (derived from Central Statistical Organisation, 2014; Central Statistical Organisation, 2010)

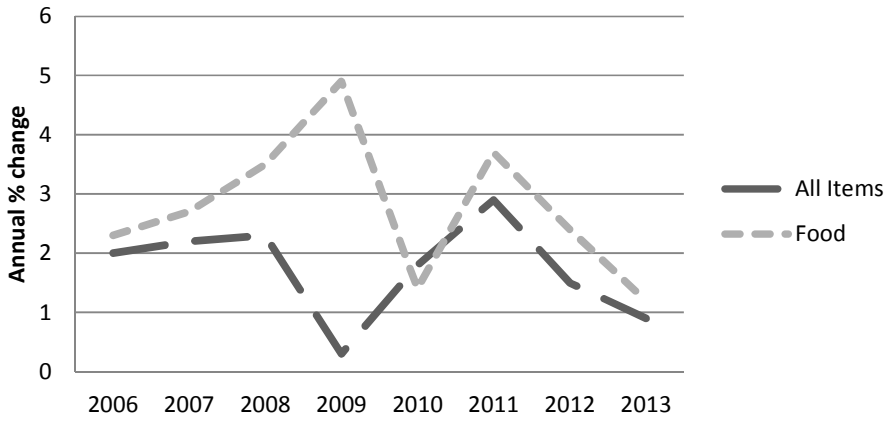

Figure 4 CPI Canada, 2002=100. (derived from Statistics Canada, 2014)

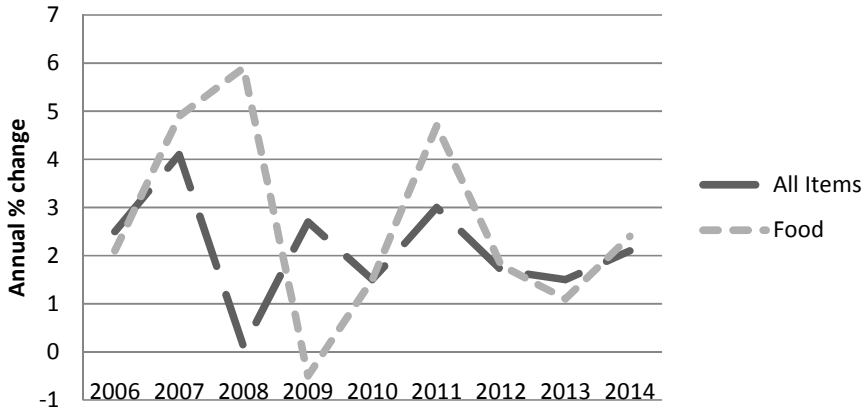

Figure 5 CPI USA, 2005=100. (derived from Crawford & Church, 2014)

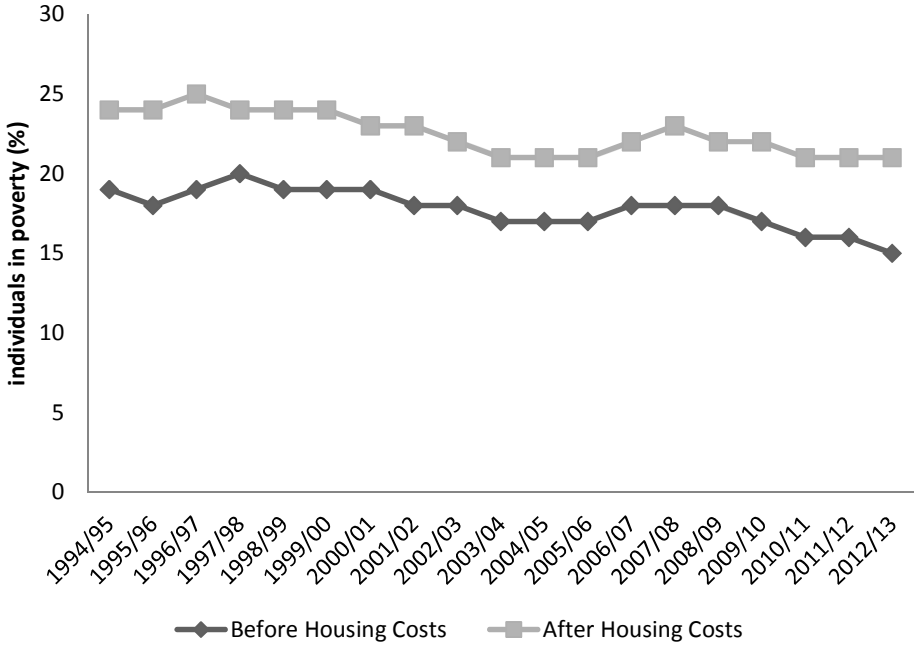

Figure 6 Percentage of individuals in relative poverty. (data from ONS, 2014)

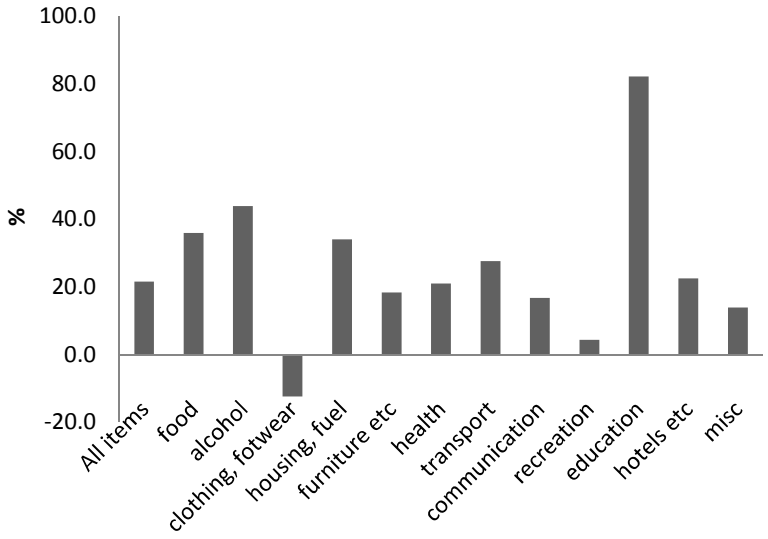

Figure 7 Difference in CPI 2007-2014. (data from ONS, 2014a)

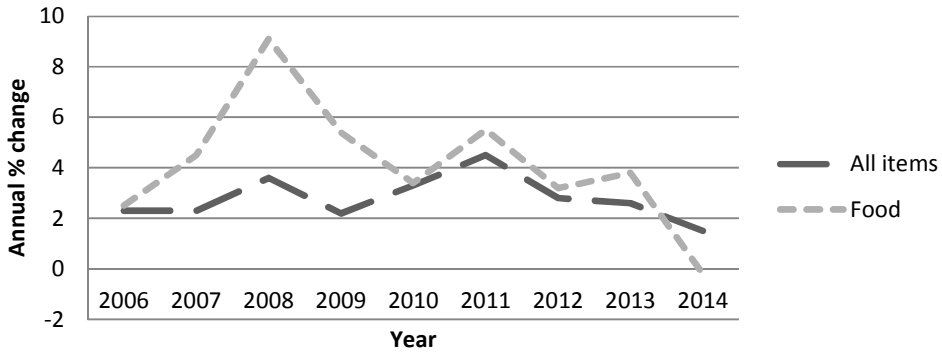

Figure 8 CPI UK, 2006=100. (data from ONS, 2014a)

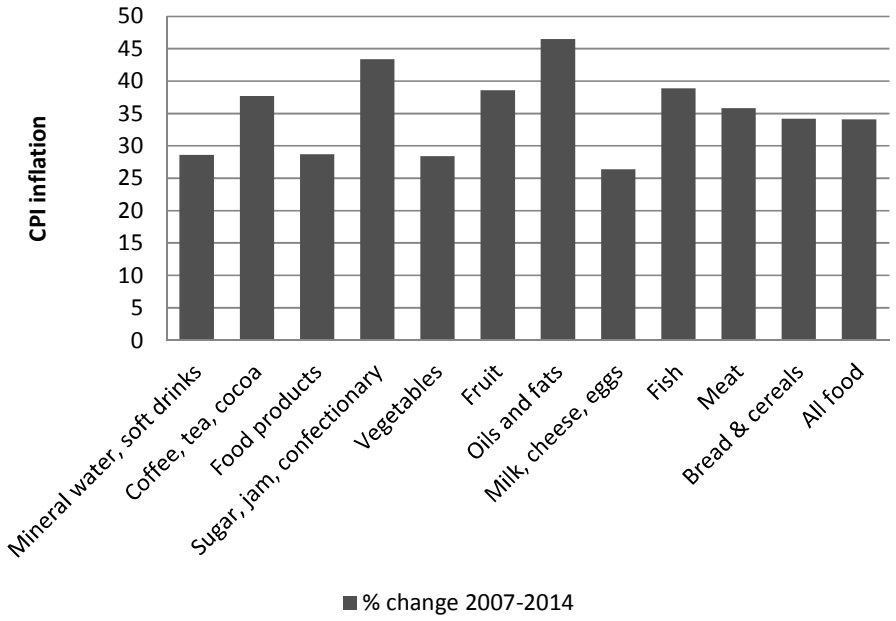

Figure 9 Growth in CPI inflation 2007-14. (data from ONS, 2014a)

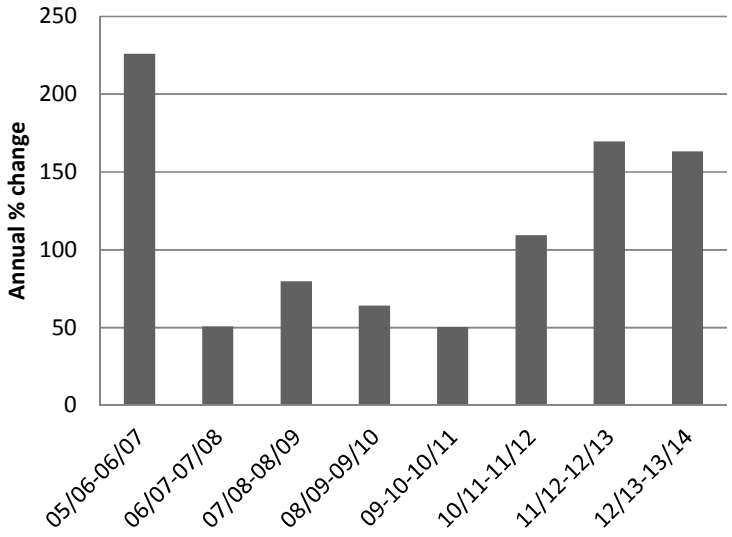

Figure 10 Percentage growth in Trussell Trust reliance. (data from Trussell Trust, 2014)

Table 1 Annual domestic food price volatility index (FAO, 2014a)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
United Republic of Tanzania	10.1	10.9	8.0	8.5	12.0	4.9	4.9	7.0	4.8
Yemen	35.0	22.1	33.2	9.7	13.9	12.0	15.3	11.0	
Canada	3.8	4.9	4.8	4.9	4.7	5.4	5.2	5.9	7.8
United Kingdom	5.1	6.0	7.8	8.6	5.8	7.1	5.7	4.2	3.4

Table 2 GDHI per head 2012, (data from ONS, 2014b)

Regions	GDHI per head (£)
North East	14,393
North West	14,939
Yorkshire and The Humber	14,575
East Midlands	15,206
West Midlands	14,744
East of England	17,630
London	21,446
South East	19,126
South West	16,914
United Kingdom	16,791

Table 3 Percentage of population unable to afford specific items 05-11. (data from DWP, 2012)

Item	2005	2006	2007	2008	2009	2010	2011
Unexpected financial expenses	31	28.8	26.6	28.6	31.1	34.6	36.6
One week's annual holiday	23.3	22.9	21.4	24.2	26.1	27.3	29.7
Mortgage or rent payments, utility bills or loan payments	6.7	8.7	8.5	7	8.05	9.1	8.9
Heating to keep home adequately warm	5.8	4.7	4.6	6	5.8	6.1	6.5
A car	5.3	5	4.9	5.1	4.9	6	6.3
Eat meat or protein regularly	6.1	4.5	3.9	4.3	4.1	5	4.9

Table 4 CPI annual percentage change. (Data from Crawford & Church, 2014; Statistics Canada, 2014; Central Statistical Organisation, 2014; Central Statistical Organisation, 2010 and World Bank, 2014b)

	2006	2007	2008	2009	2010	2011	2012	2013
United Republic of Tanzania	7.3	7.0	10.3	12.1	6.2	12.7	16.0	7.9
Yemen	7.9	11.2	10.1	11.0	12.5	23.2	5.8	8.1
Canada	2.0	2.2	2.3	0.3	1.8	2.9	1.5	0.9
USA	2.5	4.1	0.1	2.7	1.5	3.0	1.7	1.5
United Kingdom	2.3	2.3	3.6	2.2	3.3	4.5	2.8	2.6