



From rational to relational: How energy poor households engage with the British retail energy market

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ABSTRACT

In the sociological tradition, markets are understood to be constituted of social relations: relations of trust, friendship, power and dependence, which have moral and emotional qualities. In this paper, we explore how people in energy poor households construct the energy market and its impact on energy policy. Drawing on secondary analysis of a large collection of qualitative interviews on the lived experience of energy poverty carried out from 2003 to 2018 ($n = 197$ interviews and 20 selected), and the results of an OFGEM quantitative survey on consumer engagement released in 2018, we document the experience of the energy poor as actors in the British retail energy market. We uncover a number of challenges and opportunities facing energy poor participants in the market: having access to good quality information about suppliers, energy tariffs and grants, and having the skills and resources to act on this is important, without these it can be difficult for people to take action. In explaining people's engagement with the market, we draw on the concept of 'socio-economic attachments', showing how a supportive network of family and friends, and people's trust of and resulting loyalty to their energy supplier mediate their engagement. These findings lead us to relational explanations of the retail energy market, with related policy recommendations: if we are to aim for people to act 'rationally', they will need support to navigate the market from intermediaries.

1. Introduction

There is a strong and growing tradition of energy poverty research in this journal and beyond, with a rich seam of work on the lived experience of energy poverty [1–9]. Recent academic contributions characterise energy poverty as a complex, multi-faceted problem, caused by and creating multiple vulnerabilities, which compound one another, and change over time [10–19]. In this contemporary understanding, energy poverty is seen as a set of vulnerabilities and risks which result from energy deprivation and restricted access to energy services - including transport and mobility, and the resulting restriction of opportunities to participate in society. This contrasts with a more technical understanding associated with the term fuel poverty: *the poor affordability of energy for space heating (and other related domestic*

services) as a result of low household incomes or energy inefficient homes [10]. Policy understandings of 'fuel poverty' tend to offer narrow problem definitions, particularly in England where policy has been criticised for an overemphasis on energy efficiency as the problem and solution to energy poverty, and for ignoring the impacts of energy prices, and austerity policy [20,21].

In this paper we open up a new question of interest in this field: the experience of the retail energy market for energy poor households in England. This research was motivated by a recognition by the authors that regulatory understandings of the 'purchasing consumer' [20] were very different to energy poor households' experiences of the retail market uncovered, but not yet documented, in 'lived experience' research. While OFGEM regulation and English Fuel Poverty policy emphasise active engagement in the market by switching supplier for the

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best rate, most people in England do not switch regularly, and those experiencing energy poverty are less likely to switch [22,23]. Furthermore, those consumers who are the most disengaged from the energy market (i.e. have lowest switching rates) is greater amongst consumers who are likely to be the most vulnerable. In this paper we build on an understanding of how and why people engage in switching processes: we document the constraints and the opportunities of the British retail energy market, and offer relational explanations for people's switching experiences.

Building on understandings of the market rooted in economic sociology, which conceive of the market as a space constituted by social relations, we aim to explore how energy poor households experience the retail energy market (both as actors and as subjects within it), and to reflect on what we can learn from this to shape energy policy. We draw on two substantial bodies of secondary data: a large collection of qualitative interviews (20 interviews sampled from a wider collection of 197) on the lived experience of energy poverty, and the results of a 2018 OFGEM¹ quantitative survey on energy consumption. We analyse this data through a sociological lens: drawing on the sociology of markets and money, which sees the market as constituted of those who participate in it, and shaped by their relationships with each other. Our data allows us to explore both qualitatively and quantitatively how those living in energy poor households experience the retail energy market, and how they are both constrained, and able to act within it.

Our contribution here is to profile energy poor consumers' experiences of the retail energy market, to identify the challenges and opportunities associated with the retail energy market, and document how these constrain and enable people's ability to act. Our analysis gives a deeper understanding of why levels of engagement in the energy market as reported by OFGEM are relatively low [22,23] and points to how engagement amongst vulnerable consumers could be more effectively supported by recognising relational aspects and the importance of intermediaries. We find that people that have access to good quality information about the market, and the skills and resources to act on this do better: but this is a major challenge for some energy poor households, and opportunities to exercise agency in the market are consistently less open to disadvantaged people. We also find that those of our participants who find this a challenge navigate the market more successfully when they have a supportive network to help them, made up of friends and family. They are also constrained by their feelings of loyalty and trust towards energy suppliers, resulting in a reluctance to switch away. Our analysis suggests that more attention needs to be paid to the role of intermediaries, who can negotiate access to the market for the most vulnerable, whether friends and family or other actors in the retail energy system.

2. Understanding household engagement with the retail energy market

2.1. Sociology of markets and money

We are not the first to look for explanations of how people engage with markets and money: the sociology of markets (sometimes known as social studies of markets), and the sociology of money provide useful literatures to call on. This is a diverse body of work, categorised broadly as economic sociology. However, the writers we draw on here have in common a vision of the economy as constructed by society, with market transactions based in, and shaped by social relations: relations of *trust, friendship, power and dependence* [see 17 for a review of the field]. In this work, "economic action is explained as a form of social action, socially situated, and performed within socially constructed institutions" [24,103].

¹ OFGEM is the Office of Gas and Electricity Markets in the UK and works independently from the Government and the energy market regulator.

To date, there have been a limited number of energy studies which draw on these insights. Silvast's review and call for energy researchers to engage in this literature is a useful starting point in this journal [10]. Silvast draws on the concept of 'performativity': showing how ideas about the market shape practices in the market [25], based in a relational ontology associated with actor network theory. The way that markets are designed and managed is understood to impact on what can be done within them, but this perspective also sees agency as distributed in networks, devices, tools and texts throughout the market [26]. As such, the design and management of each market imagine particular forms of agency for users and technology, which is also reflected in analyses of technology such as smart grids [27], smart meters [28], or low-carbon houses [29] as well as recognising the specific constraints in which this agency can be exercised.

Note this question risks a rather deterministic attitude to the retail energy market (albeit not present in the references above), which focuses more on how its design and management shapes demand rather than how demand shapes design and management. A lack of focus on the consumer's agency and experience is also a common critique of the economic sociology literature [30]. In approaching the market through a combination of lived experience and behavioural survey data as we do here, we have an opportunity to start to elaborate how those in energy poor households construct the market: how they *perform* and experience it, and what *networks, devices, tools and texts* constrain or enable them in doing so. The concept of a market device is perhaps most useful here: defined as "the material and discursive assemblages that intervene in the construction of markets" [31].

Another strand of literature on the sociology of money explains the ways in which people use money as a means of mediating and shaping social relations. Zelizer sees money and its use being "profoundly influenced by cultural and social structures" [19,32] as well as showing how people understand and use money in particular times and places, and as part of their social relations. Zelizer's idea that money is 'earmarked' in different ways, for instance, that the experience of money in the form of *payment, gift or entitlement* results in very different expectations, understandings and uses, is helpful here (ibid.). The understanding of different types of money having different *moral values*, and associated expectations of 'good' use, is also useful, and explored by Wilkis in his study of a low income community in Argentina [33]. The term *socio-economic attachments*: the ways in which social and economic motives are intertwined [34], allows us to look at these moments of market construction as moments of 'attachment' and think about what they constitute, and how they are built [35]. We use this as an analytical tool in this paper.

In the rest of this literature review we will profile the specific design of the British retail energy market, as well as documenting what we know about how those living in energy poor households engage with the market.

2.2. Energy poor households and the British retail energy market

Our national context here is England, which sets its own energy and fuel poverty policy. The British retail energy market is shaped by European policies on energy, markets and competition (this being like that until the UK leave the European Union as part of the Brexit process). EU policy attempts to standardise, or at least harmonise retail energy markets across Europe, to bring into being a particular type of market. Silvast characterises this as an integrated market (across nations) which, according to EU market principles will bring competition, efficiency, and more affordable prices – all market devices [25]. Further, EU policy is grounded in economic understandings of markets as neutral trading places, in which demand drives supply, and actors make rational decisions between different tariffs and suppliers.

Sociology of markets studies recognise that markets are culturally constructed [30], and we can see radically different retail energy markets in different European states. The British market is

characterised by early privatisation (1980s) and liberalisation (late 1990s), based on a strong belief that such liberalisation would reduce prices for the consumer [36]. The UK market, and more specifically the British market, represents a translation of the EU's market devices into the specific UK context, with its particular traditions of relations between citizen and state, and expectations of competition. The impact of the organisation of the retail energy market on energy poverty, or the 'performativity' of the market, is rarely discussed in England, with the exception of a comprehensive recent thesis on this topic [20]. Errington Blakelock documents how the regulation of the British retail energy market by OFGEM is founded on a firm belief that people will act as rational consumers, and that persuading them to switch supplier is the way to ensure the best market outcomes for all, despite persistent evidence to the contrary [20]. OFGEM resists introducing new regulation to the British retail market to protect energy poor householders because such regulation is seen to be interfering with competition, which in itself is expected to bring lower prices.

Note that this body of regulation has limited interaction with the English policy on fuel poverty, which, since a review in 2012, is measured using the Low Income High Costs (LIHC) indicator. LIHC considers a household to be fuel poor if: they have required fuel costs that are above the national median level, and, were they to spend that amount, they would be left with a residual income below the official poverty line [37]. LIHC policy on fuel poverty, has a different concept of the fuel poor subject: *a member of a low-income household living in an energy inefficient dwelling* [6]. Under this LIHC understanding of the fuel poor subject, fuel poverty policy side-lines the retail market as a contributor to the problem by focusing on energy inefficiency as the key driver of energy poverty (for a full analysis see Middlemiss 2017 [6]). This results in a clear delineation between the concept of fuel poverty and the regulation of the retail energy market on both sides.

Both the 'purchasing consumer' (subject of market regulation), and the 'low-income household in an inefficient dwelling' (subject of fuel poverty policy) are simplifications of people's experiences, of course. The 'lived experience' data that we have access to is particularly valuable in this light and presents an interesting opportunity to examine the experiences of the market that are shared with us by our participants, and to consider the gaps between these experiences and the idealised subject of regulatory policy.

There is a considerable body of existing research on the lived experience of energy poverty in the UK [highlights include [7,19,38]]. While there is a recognition of the role of retail energy markets and prices in driving this problem in most work on this topic (one which stems back to the earliest understandings of energy poverty) [39], experiences in the retail energy market are less well understood. We know from earlier work that a number of distinct issues affect the energy poor in accessing the market, including: debt, its collection, and its impact on people's ability to switch, a fear of switching supplier due to a perception of this being a financial risk, people favouring pre-payment meters as a budgeting tool despite higher tariffs [11]. While energy market issues have emerged in studies of the lived experience of energy poverty, to date, there are no studies that focus on this specific topic in detail. This suggests an area ripe for further enquiry.

We are also inspired here by recent studies which introduce relational explanations of people's energy consumption [40]. These suggest that the experience of energy poverty is mediated and shaped by social relations [19]: people's connection to real and abstract others, and the presence (or absence) of social support and solidarity that this entails. Given that studies in the sociology of money and markets traditions understand these as embedded in social relations, this approach has particular value here. A further study shows how people's experience of energy poverty is shaped by their emotional response [41]. Fear, worry and care practices, and embarrassment, stigma and trust, shape both how people act, and their ability to access help. These theoretical and empirical inputs bring us to the following research questions: How do energy poor households perform and experience the retail energy

market as both actors and subjects? What are the implications of this for energy policy?

3. Methodology

This research is based on secondary analysis of qualitative and quantitative data. We undertook an in-depth analysis of 20 qualitative interviews, selected from a large secondary data set on the lived experience of energy poverty (N = 197 interviews). The interviews were carried out between 2003 and 2018 in previous research by the authors of this paper; and taken from 10 studies designed and undertaken with different purposes, although all documented the lived experience of energy poverty in England. Therefore, the primary researchers took part in the secondary data analysis [42].

We paid specific attention to rigour in the secondary data analysis process. The team included researchers that created the primary research dataset but critically the main analyst (lead author) was not part of the primary research teams [43]. Bringing previously unconnected datasets into conversation, with a new analyst allowed us a fresh look at the data, while also drawing on the broader team's familiarity with each primary project. The interviews were purposefully and theoretically selected [44] and each highlighted ways in which the energy poor householders interact with the retail energy market without looking specifically to any sociodemographic criteria to select the interviews. The project was subject to a full ethical review at the [redacted for anonymity].

We have a broad interpretation of what the retail energy market means. Here we are interested in market interactions as might be characterised by an economic understanding of the market: people buying energy, and people acting to secure better prices by investigating, and potentially switching supplier or tariff, the installation of new appliances and energy saving measures. We are also interested in the market devices that shape people's ability to do this: the ways in which energy is metered and sold, the availability of different forms of government support for energy households in accessing energy, the practices of institutions selling energy and how these constrain people's ability to exercise choice (e.g. not allowing people in debt to switch supplier), and beliefs and narratives, that allow them to exert agency in a way or another. The selected cases described particular experiences of engagement with the market.

Table 1 below gives some detail about the interviews.

We used NVivo Software 2012 to analyse the qualitative data. A first pass involved identifying the main aspects of respondents' experiences of the retail energy market and our respondents. This allowed us to characterise these experiences, and identify the challenges and opportunities associated with the market for our respondents. In a second stage of analysis, we considered what the retail energy market means to those in energy poor households and how they make sense of it.

We support our qualitative data, with quantitative secondary data analysis of the raw questionnaire responses to an annual survey commissioned by OFGEM in 2018, which monitors the domestic energy market. The OFGEM Consumer Engagement Survey interviewed 4,064 gas and/or electricity consumers in 2018 using random location sampling and ensuring a nationally representative sample of households. Consumers answered over 150 questions, and the summarised responses are reported as data tables to accompany the main OFGEM report. This survey has been running for five years; in 2018, consumers were surveyed on topics including consumer switching and comparison behaviour, attitudes towards the retail energy market, perceptions of the market and suppliers, and consumer outcomes. Some of the themes from the questionnaire responses have been used to inform OFGEM's 'Consumer Engagement Survey Report 2018' and the full, summarised survey results have also been made available [36]. We draw quantitative data from this rich dataset to provide context to our qualitative data.

We accompanied the qualitative analysis with descriptive statistics

Table 1
Description of qualitative data set.

Interview ID	Date	Demographics		Retail Energy Market experience
		Gender	Age	
John	2003	Male	70s	Accessed energy grant
Romina and Jack	2003	Couple	50s	Accessed energy grant
Barbara	2014	Female	Unknown	Changing energy supplier
Thomas	2018	Male	50s	Debt experience
Colin	2016–2017	Male	60s	Debt experience
Rose	2017–2018	Female	Unknown	Having access to energy schemes/grants
David	2016	Male	50s	Payment methods
Angela	2016	Female	30s	Higher bills and expenses
Laura	2016	Female	30s	Switching energy companies
Margaret	2016	Female	70s	Issues with energy suppliers and poor experience with energy schemes
Mathilda and Charles	2004	Couple	60s	Accessed energy grant
Astrid and Gilles	2009–2010	Couple	Pensioners	Changing energy companies several times
Alice	2009–2010	Female	Unknown	Accessed energy grant
Louise and Etienne	2009–2010	Couple	Pensioners	Changing supplier
Kate	2016	Female	40s	Payment method and higher bills
Paulette	2016–2017	Female	30s	Financial problems
Prunella	2017–2018	Couple	Unknown	Energy schemes and financial problems
Fiona and Bob	2016–2017	Couple	60s	Changing supplier
Susan	2016–2017	Female	Prefer not to mentioned	Changing supplier and received energy advice
Catherine	2003	Female	Pensioner	Accessed energy grant

from the OFGEM data [36]. Consumer responses were stratified by, for example, the age, social grade, income, disability status, internet use, switching status and eligibility for warm home discount of the household reference person (HRP). The tenure type of the household, whether the property has both mains gas and electricity, smart meter usage and information on how bills are paid were also used to segment the responses. From the full dataset, we selected certain demographic categories of consumers who are most likely to experience challenges in acting in the retail energy market. We chose these categories based on the existing literature on who tends to experience energy poverty, and as such, we label this sample ‘likely disadvantaged’. Their disadvantage within the retail energy market is indeed a feature of our results section below, although different groups experience different forms of disadvantage. We then compared how these particular consumers responded to the questions compared to the average consumer. The following characteristics were selected:

- Households where the HRP is aged 65 or over
- Households where the HRP is social grade D or E²
- Households earning less than £16,000 per year
- Households containing someone with a disability
- Households who either rent privately or rent from the local authority
- Households with no internet access
- Households on prepayment meters (PPM)
- Households in arrears on their bills

Thus we are able to discover, for example, that where 65% of all households responded that they trust their energy supplier to charge a fair price for services, this rises to 77% in households who do not have access to the internet [36]. In the text we refer to specific data from the survey and a more detailed extract from the tables is included in [Table 1 in Appendix](#).

The interviews analysed and included in this research provide valuable and rich data showing how the market is part of lived experience, although our interviews were not explicitly focused on ‘energy market experiences’. General limitations and risks of secondary data

² Note that Social Grades are taken from the National Readership Survey Social Grade Classification, a system used fairly widely in the UK (see <http://www.nrs.co.uk/nrs-print/lifestyle-and-classification-data/social-grade/>).

analysis include collecting the data for other purposes, the inability of going back to the participants and lack of contextualisation of the data [43,45]. Integrating primary researchers in the secondary research team gave us sufficient background knowledge of the interviews, enabling us to connect meaning and context. A higher number of interviews could have also offered additional information on how the retail energy market is experienced and shaped. However, our data has identified a number of key issues, laying the ground to do further studies which looked into these things directly. Because of the place-based character of the study-as, the interviews were conducted in England-, results must be taken cautiously when inferring them and the conclusions to other contexts. We hope that future studies will expand on our work in this respect.

4. The retail energy market for energy poor households

So what kinds of activity do we need to observe in order to understand the retail energy market for energy poor households? As mentioned in Section 3, our understanding of the retail energy market includes the economic understanding of the market, the role of the market devices in shaping people’s interactions with the market. As such, we detail here how our interviewees perform the practice of buying and using energy, as well as how they draw on the support systems in place which facilitate this (for instance grants and advice), and how they experience the opportunities and barriers to accessing energy resulting from market practices and regulation.

We begin this section by detailing experiences of the retail energy market, then elaborating the challenges and opportunities associated with these experiences.

4.1. Engaging with the retail energy market

In this section, we demonstrate that although engagement with the market is relatively low, our interviewees demonstrated a keen awareness of cost and how much energy they are using. OFGEM understands engagement as switching supplier, changing tariff or comparing tariff with their own or other suppliers. The OFGEM survey finds that 41% of consumers “engaged” in the retail energy market in 2018 [22]. Particularly for this research, the household types selected are less likely to have engaged in these practices than the average consumer. These include older households (33%), social grades DE (26%), lower income households (35%), disabled households (37%), private

renters (36%), local authority renters (32%), no internet access (17%), PPM consumers (32%) and those in arrears (35%).

Our qualitative data shows that other ways to engage with the energy market include the affordability of energy bills and awareness of energy use—also, practices derived from combining the previous two elements that included family behaviours and interactions. OFGEM shows that in total, 4% of UK households describe themselves as falling behind with their bills [22]. This proportion rises to 8% for low income households and households on PPMs, 6% for social grade DE, 7% for local authority renters and 33% of households in arrears.³ In the qualitative data, some people who had a stable income could not afford their energy bills. Equally, others had experienced extreme economic conditions but still were able to find ways of easing their situation.

Nevertheless, whether people can afford their energy bills or not is dependent of the traditional drivers of energy poverty (low income, poor efficiency, high energy costs), but this is not a simple relationship. A particular housing condition can exacerbate or enhance the situation: energy bills might be affordable only when the house is energy efficient. In many cases, accessing energy schemes and grants is critical to having an energy-efficient home. Grants can also offer access to more affordable energy when they subsidise energy microgeneration and renewables [46]. The proportion of low income households that have installed microgeneration and renewables (4%) is the same as the proportion of the whole of the UK (4%) (OFGEM 2018) and a slightly higher proportion of low income homes have installed a smart meter (30% compared to 29% for the whole of the UK).

Most of the interviewees are aware of how they use energy and how much energy they use, budgeting carefully for use, and adapting practices to reduce costs. Sometimes they might use the heating very sparingly due to high energy bills, rationing its use in order to stay within their budget. Other strategies include changing energy practices and routines to ensure lower bills, involving family members in this where necessary. For example, instead of using his washing machine, Thomas, who, at the time of his interview in 2018, was dealing with severe financial problems and had no job, washes clothes in the sink using the kettle to heat the water.

While energy prices influence how much people consume, there is also a wide range of other drivers which shape the ways in which people make choices on a daily basis. When somebody is experiencing energy poverty, their personal and household priorities change. In many cases, people put the needs of the most vulnerable family members first, using more energy than they can afford. Paulette reflects on this:

I: How does energy relate in relation to other expenses? Is it the most important thing you pay first? Is it almost the most important? Something that's not that important? It sounds like you do prioritise it quite a lot ...

Paulette: I do, when it comes to my bills, all my bills are my No. 1 priority on everything, any money that I get, it goes for my bills first of all, my rent, obviously gas and electric, council tax, (...) I don't want my little one to have to go through seeing me have all that worry, so I always do try and prioritise bills over anything else. That's why we don't really tend to go anywhere either, I'm not using diesel in the car, we tend to stay here!

This combination of coping strategies and constraints produces a number of specific challenges to energy poor households in relation to the retail energy market. We detail these in the next section.

³ According to OFGEM Customers in 'arrears' are customers who have bills which remain outstanding for longer than 91 days or 13 weeks after they are issued, and who have not yet set up a debt repayment arrangement. Since the question in the survey did not specify energy bills in particular, we are assuming that maybe some households in arrears because they are up to date with part of their bill or some other bill, they are not falling behind.

4.2. Market devices constraining energy poor households

In this section we look at the challenges that energy poor households experience when engaging and interacting with the retail energy market. These are conceived of as market devices, “the material and discursive assemblages that intervene in the construction of markets” [31]. We begin by explaining the challenges associated with accessing information, understanding energy bills and tariffs, and accessing energy grants and schemes. We then document people's experiences when they do manage to change supplier or payment method. Throughout we see that having access to good quality information about the market: bills, efficiency schemes, and tariffs, and having the skills and resources to act on this is a major challenge for some energy poor households. The challenge here is that the design of the market, which relies on adequate access to good information, and yet does not effectively deliver it, constrains energy poor households' opportunities to improve their lot.

From OFGEM [22], 12% of consumers in the UK do not know their approximate annual spend on energy. For the household types in our sample, just 9% of households renting from the local authority are unaware of energy costs. This figure reduces further to 6% of households on prepayment meters. In contrast, 26% of households without access to the internet are unaware of the size of their bills. The variation in people's understanding of their spend on energy is therefore considerable, and is shaped by income levels, billing types, tenure types, and access to the internet.

Retail energy market literacy can also be an issue of concern for energy poor households. The OFGEM survey reveals that 18% of consumers describe themselves as being “not confident” in their understanding of their energy bill and 41% describe themselves as “Not very” or “Not at all” familiar with the features of their energy tariff [36]. For low income households, these proportions rise to 24% and 47%, respectively, and for households in arrears on bills, we find 28% and 52%. The qualitative data revealed that many of the interviewees had difficulty in understanding their bills and energy certificates. Paulette (2016–2017) explains how difficult it is for her to understand the information associated with energy bills, costs of different tariffs and how this is presented:

Paulette: I don't understand any of this kilowatt stuff but they [energy supplier], they're good at getting round you and it was all working out cheaper

I: Do you understand the difference between like say how much you pay on a prepayment, to how much you pay on direct debit and standing order? Do you know which is the cheapest way of paying?

Paulette: I wouldn't have a clue.

The fact that the application process for a number of market activities (changing supplier, applying for energy schemes and grants) is generally online, means that those with no IT skills or access, have difficulties in securing cheaper prices and support. Access and capacity to use the internet is particularly important. Some interviewees do not consider themselves “computer literate”, and an inability to use the internet limits their agency. Overall, just 8% of UK consumers never use the internet and do not have access to online services. This proportion rises to 24% for older households, 19% of social grade DE, 14% of low income households and 21% of disabled households [36]. Stories also revealed that not feeling sure about how to use an IT device might constrain opportunities to change supplier or would force people to choose another means of doing it. Although Paulette (2016–2017) has a tablet, she would not use it to change supplier or go online to use platforms:

But I'm not that great [at using my tablet], I know how to do things I've used for quite a while. (...)

I'm not that computer literate! When it comes to your car insurance, they say “go online and do that Go Compare thing”, I don't have a clue what I'm doing because I'm always worried something won't do be done properly and then suddenly you're not covered, so I'd rather actually

Speak to the people direct and do it that way.

Interestingly, this story reveals that people would much rather speak to ‘an actual person’ than trust in price comparison sites. So, while digital literacy is indeed needed to engage with the market, some people still prefer to trust an actual person to do something on their behalf than just merely use a website. This is also evident when we see that poor households rely on friends and family –supportive network- for engaging with the retail energy market, - even if this actual person then just uses a website- We will further elaborate on the role of a supportive network in section 5.

OFGEM [22] reports that only 36% of households with a member older than 65 years old, manages the energy account online, and 39% of households earning less than £16 k. This means that people either do not access cheaper prices or energy schemes and grants, or they do so through the assistance of a family member. Rose (2017–2018) explains this experience, and how much difference it makes to have her grandson help with this:

I'm not really well up on the internet. I can get round it, but when you, if you click on stuff and, and you've got like, you're asked (...) there is that much on there it would baffle me, it would. I mean it (...) me grandson, he's good (...) let's have a look, and he, he said "Well what about this one (...)" "How did you find that?" "Oh (...)". He knows what he's doing, I don't. If you know what you're doing then, you know, it'd be great, but I'm not (...) computers, he is. People my age weren't brought up with them, were they?

Technological investments and energy efficient appliances or measures often require substantial financial outlays, which are not available for those in our sample. For this demographic, access to improved energy efficiency depends on energy grants. Narratives in our research demonstrated that these energy schemes could be difficult and time-consuming to access. Support initiatives were designed and offered by suppliers, and the Government to encourage energy efficiency, tackle fuel poverty and reduce energy bills. While in principle, this is positive, energy schemes are not made equally accessible. The length of the application process is a burden in many cases: the process might start with asking for advice, considering different options, and then waiting for a response that in some cases can take months. Rose explains her frustration about the matter:

So I initially applied and I waited, I applied in the, hmm, November/December-ish and six months later I was still chasing it up, ringing them up, because obviously that had taken me all through winter, and they weren't being, the company that I was using wasn't being very helpful (...)

Having access to energy grants and schemes sometimes depends on an adequate level of energy literacy and IT skills. This can result in people being unsure about what they are entitled to, what they really “need” or would be “useful”. Advisory services sometimes leave the decision in the hands of the occupants of an energy inefficient house, rather than advising them on which option would be the most appropriate in their case. Further, sometimes the options available are restricted, or strongly shaped by the provider. Mathilda and Charles (2004) describe how they ended up with the “second best” boiler-according to them-, when they did not have advice on which was best, and they did not feel empowered to argue for their preference- a combi boiler.

Well with getting something for nothing that will do better than what was original and I compromised on that idea (...) I mean a combination boiler would have been better, but this is second best and I wasn't going to argue on that (...) Rather than, you know, demand, I didn't know my rights with regard to cost or anything like that, I accepted that this is what happened and that was it.

4.3. Opportunities to exercise agency in the market

Some of our interviewees are able to exercise agency in the retail energy market, thus increasing their ability to meet their needs. The recurrent mechanism, for those that can manage it, is switching tariffs or energy supplier. Many of the stories revealed that switching tariffs, energy supplier or payment method helped people to adapt and deal with challenging situations. However, the quantitative data shows that these opportunities are not available to all, and switching supplier or tariff is an option that is consistently less open to those in our ‘likely disadvantaged’ quantitative sample.

Overall, 64% of UK consumers have switched their energy supplier during their lifetime, and 45% have changed their tariff [22]. Those without access to the internet are least likely to switch supplier and tariff (just 45% and 28%, respectively), as are private renters (51% and 31%) and social grades DE (53% and 33%). Older households, low-income households and disabled households switch at the same levels as the average consumer. Although reasons for switching vary from person to person, seeking a change in tariff or supplier is typically triggered by a rise in prices or a period of repeated high bills. OFGEM reports that price was the most important reason given to switch for 92% of consumers who switched supplier, and 90% of consumers who switched tariff. We find similar results when focussing solely on those households in our quantitative sample.

In order to engage in tariff or supplier switching, people have to have overcome the barriers associated with accessing the internet, and understanding energy tariffs and bills as detailed above. OFGEM shows that in 2018, 64% of customers used the internet to find out about deals on switching supplier and 54% for changing tariff [36]. Social grades DE were less likely to use the internet to find out about switching (41% and 41% respectively), alongside older households (50% and 33%), local authority renters (34% and 33%), those without access to the internet (16% and 0%) and customers on PPMs (27% and 32%).

The consequences of switching tariffs or supplier differ. Some people did not see any financial difference. According to data from OFGEM, 81% of consumers say that they are paying less after switching supplier and 74% pay less after switching tariff [36]. However, for households in arrears on bills, 63% report that they are paying less after they switch supplier and 54% report paying less after changing tariff. When switching is successful, bills are reduced, people gain more control over what they spend, and by saving money on energy they see an indirect improvement in their diet or quality of life. Romina and Jack explain how with the money they saved in the energy bills they can now have access to the food that they prefer:

I suppose we eat a bit better than we used to. When I say we eat a bit better, I buy, I can now, I get more fresh meat than we used to. We have some steak once a week, pork chops and so on. We get them fresh though we don't buy any of the pies now like we were getting, and mince, fresh mince, we get and we're buying more of that every week now.

In the interviews, we observed that people have some strategies to give them more sense of control of the situation they are experiencing. This is a protective mechanism for households that are managing on limited budgets. The sense of control is reflected in both the type of tariff people are in and the type of payment method they prefer. According to OFGEM [22], 53% of all UK consumers are on a fixed tariff. This proportion falls to 37% for social grades DE, 38% for local authority renters and those in arrears on bills, and just 25% of consumers on PPMs are on a fixed tariff. Bills can be spread over the year, or paid according to use in the month or day (PPM). Those paying according to use, feel they need to be more cautious about how and when they use energy, e.g. when to put the heating on. For some of the interviewees, a monthly payment- whether for gas or electricity - gives them more control and flexibility in when and how to use electricity and gas. The uncertainty of not knowing what would happen to them if they did not have money to afford the payment, makes some

households more inclined to pay cash, so they have more control. As Colin (2016–2017) explains:

I: What do you mean, it goes out without you having control?

Colin: Well yeah, I know what I got in the bank and that's how I like it, I mean I like to pay cash, yeah, I don't want direct debit.

I: Is that because you just feel more in control that way?

Colin: Yeah, well the only direct debit I've got is my telephone, that come out and that's it.

Nevertheless, what works for some individuals might be a cause of stress for others. As per OFGEM data, people who pay by direct debit have to always have enough money to pay the bills and 77% of UK consumers use this method of payment for energy. Direct debit payment is less popular with local authority renters (47%), those on PPMs (7%)⁴ and those in arrears (52%).

Our results from both survey and lived experience research show that there are opportunities to exercise agency in the retail energy market which can provide relief. But as stated at the beginning of the section, those opportunities are not equally accessible and available to everybody.

5. Explaining market engagement through socio-economic attachments

Until now we have provided a descriptive account of energy poor households' experiences and how market devices, so far understood rather simply as energy bills, energy metering, etc. enable or constrain their engagement with the retail energy market. We have also illustrated how being part of an energy poor household affects people's agency. We now present a more analytical output from our research and our reading into the sociology of money and markets. Here we look at how people's engagement with market devices are shaped by socio-economic attachments: the varied ties between people and things produced in the interaction between economic and social systems [47]. While the challenges and opportunities in the retail energy market for those at risk of or experiencing energy poverty were widely apparent, we also noticed that these were strongly associated with, and in some cases mediated by, particular types of relationships: between people and their families and friends, and between people and energy companies. We show here how agency for accessing the retail energy market is shaped by these socio-economic attachments.

5.1. A supportive network as gateway to the retail market

People's ability to interact with others and maintain relationships is important in both allowing them access to the market and in shaping that access. However, this is not always the case: sometimes people's networks are not strong enough to provide support, either because people do not have many others to turn to for help, they do not have the ability or resources to ask for help, or because family and friends are far away.

People use their support network - mostly family - as a way to save money, and reduce energy bills. Having family and friends around to help, to provide information, to guide within the process of applying for energy schemes, appears to be a determinant which enables people to act in the market [19]. OFGEM data (Appendix 1) shows that 8% of UK consumers had a friend or family member help them to switch their energy supplier or tariff [36]. For older households, the proportion is higher (16%). This is also the case in low income households (15%), disabled households (16%) and those without access to the internet (15%).

In a typical experience in the qualitative data, we quote Etienne and Louise (2009–2010) describing their experience of seeking support

from family, in this case, support with organising the installation of an energy supplier. They asked Louise's sister to help: she did some research on the internet, found the cheapest option and managed to get the installer to come to their house.

I: And do you swap back yourself then, do you ring them up and swap back yourself.

Etienne: No.

Louise: The installers came from my sister you see.

Etienne: She'll send somebody to see us you see.

Louise: She tracks them.

Etienne: She tracks them and they'll come.

Louise: I think we've swapped.

Etienne: Ooh a lot of times.

Louise: Four or five times.

I: And what would you do if you didn't have that; if you didn't have your sister there to help you do that would you look yourself?

Louise: Well our daughter.

A supportive network can shape people's access to the retail energy market in this way. Information from others in people's close networks who know which options and opportunities are available can lead people to understand their own situation differently and look for alternatives. Others' experiences give people insights into which energy companies are cheaper, and how to change energy suppliers.

5.2. Trust in, and loyalty to energy companies

Beyond family and friends, relationships with other actors in the retail energy market (e.g. charities, local councils, energy companies etc.) also have an important role in shaping people's ability to act or having adequate energy performance. "For example, Alice explained how the council came and checked the radiators and boiler in her home."

These actors play a role in mediating access to the market for those experiencing energy poverty. These relationships, even those that we might think of as quite emotionally distant, are frequently imbued with qualities more typical in a friend or family relationship. Agencies providing advice are often trusted to give the best advice, as Prunella reveals, non-profit making organisations are seen to be both knowledgeable and neutral.

I think I'd go to somebody like the (National Charity), (National Charity), I wouldn't ask a neighbour, because wherever you go (...) in past, like they always add a bit on or they don't tell yah the full story, I tend to go (...) they don't (...) put you in touch with, if you know what I mean?

In our qualitative data, trust in and loyalty to particular energy companies was a frequent topic of interest for our interviewees. We identified trust and loyalty as key attributes of socio-economic attachments that shape people's relationships with energy companies.

Our analysis revealed that trust in the energy supplier is an important determinant of whether people will engage with the market, or remain 'loyal' to their existing supplier. Loyalty is a consequence of trust and often results in a reluctance to change energy suppliers who could offer a better deal. As we outlined above, 41% of respondents to OFGEM's survey 'engaged with the market' in OFGEM's terms in 2018: either switching supplier, changing tariff or comparing tariff [22]. This belies a rather limited response to the call to act as 'purchasing consumers' and suggests that trust and loyalty levels are rather high.

The OFGEM survey reveals that level of trust in energy suppliers always giving consumers a fair price is indeed quite high among UK households (65%). Social grades DE, older households and those without internet access are more likely to trust the supplier (74%, 69% and 77%, respectively). Those in arrears on bills are less trusting (53%). When it comes to changing supplier, OFGEM [22] shows 64% of consumers are wary of switching to a supplier that they had not heard of.

⁴ It can be possible to have direct debit for one bill (gas) or PPM for electric.

For older households this rises to 74%, but private renters would be more likely to switch to a supplier they previously were unaware of (only 58% are wary). 35% of consumers have not switched because they say they are satisfied with their existing supplier and this figure rises to 40% for older households [36].

We found numerous stories of people's socio-economic attachment to energy companies, where their trust of a supplier related in their loyalty to the company. Astrid and Gilles (2009–2010) were asked explicitly about their thoughts on energy companies and they clearly revealed that main driver for them when choosing an energy company was loyalty.

I: what do you think about any energy companies in that, like the trust in them, do you think they're.

Astrid: There isn't any.

I: And how do you think that could be resolved?

Gilles: Yeah, what I don't like is, I'm going to politics again now. Most of the energy companies are, they all, there's only one I think that belongs to a British, everybody else comes from France and Germany and Spain, and all the profits goes to there. It goes to shareholders as well obviously, but extra profit goes to there. We don't own them do we?

I: So does loyalty and things like that for you come in over price?

Gilles M: Yeah it does.

Prunella (2017–2018) reported how somebody in the energy company helped her to apply for an energy grant and which documents to complete. Note here, that the energy company was mandated by law to “give” these things), but our respondents still saw them as a gift. This ‘gift’ and the warm response of the customer service operator on the phone lead to positive feelings about the energy company:

(...) Yeah, they were. He, he was, he was really nice and he's, he's left me his number and he said if I need anything, any more help, then he said I just give 'em a ring and he'll get back to me. (...) he explained everything. Like you get some and they don't, you know, they can be a bit standoffish, but he wasn't, he was really nice. (...)

This is reminiscent of our finding in Section 4.2: that interactions with specific individuals tend to have positive effects and shape people's relationship with the energy market.

Elsewhere we see that when people perceive that the energy company did something good for them, for instance ‘giving’ them a voucher to pay for gas, or giving access and information to energy schemes, this can lead into gratitude and loyalty to the energy company. Rose's story (2017–2018) is a good example of this: she had a negative experience when applying to a National Energy Scheme to change her boiler with “Energy Company 1” and ended up applying to this scheme with another company. Talking about her experience:

I think the fact that they fobbed you off for a very long time, I think if they give you a realistic timeframe ... you get increased customer satisfaction and less frustration. So that would have been helpful; ... if they'd have said to me in the December or the January, right, well we've got no money until July, that would have been far better than saying it's just round the corner, constantly, which I think it was frustrating.”

Despite this experience, Rose still turns to “Energy Company 1” as a source of information on cheap tariffs, or other benefits. This is because most of the time, her experience of their customer services, website and platforms is rather positive. Here, Rose explains why she remains loyal to this company, and we can see how good customer service overall can overrule one bad experience:

Their website's very user friendly, you can easily input yer data, yer meter readings, they give you an annual summary, it's broken down by month, broken down by the year ... they email yer to remind yer about yer Warm Home Discount, they ring yer to advise you on possible new tariffs, you get an email if a new tariff comes up and you'd be better off

with that tariff. So I, I've got a bit of a customer loyalty with them because of that. It's, when you sign up they say “if within however long another deal comes up and you'd be better off, whether it's us or another provider, we'll tell yer”; and they do”. She continues “I kind of now, I like (ENERGY COMPANY 1), I like the customer services, I like when you ring them the fact that they speak to you very plainly, give yer the information you require. I think that's invaluable.”

Trust and loyalty are not to be taken for granted by energy companies, however and we can see some examples of more negative responses once trust is broken. Gilles, (2009–2010) a pensioner who had lost trust in his previous energy company articulates this sentiment particularly well:

Gilles: I wouldn't go to [old energy company] if they were cheaper than any ... I don't care how much cheaper they were I wouldn't go back to them.

Bad experiences with a supplier can result both in a loss of trust, and compromise people's agency. Kate, for example, sometimes struggles to pay her bills at the end of the month, and prefers to pay a fixed amount in order to spread her payments out in the year. When the energy company increased her monthly payments, she had no choice in the matter, and this resulted in a loss of trust:

I asked them and they said, ‘Oh no you're using more’ and I'm thinking, ‘No I'm not.’ ... I made sure they had a reading every month because I just thought, ‘I don't want an estimate because you never give me back you just put it in credit.’”

Further, the tendency for energy companies to credit accounts – as she references here – rather than refunding the extra money paid is a concern for people who have very limited resources, and is part of her loss of trust.

In this section we have shown how our participants' experiences of the retail energy market cannot be understood only as the rational acts of a ‘purchasing consumer’. Their agency in this market is shaped by their relationships with both friends and family, and with other actors in the energy market, particularly with energy companies. People who have a supportive network have the opportunity to engage in the market through helpful others (friends and family), and this help shapes their experience of the market. People's relationship with energy companies also has a role in determining whether they ‘engage’ or not: feelings of trust and loyalty (sometimes justified, sometimes misplaced) can make the difference between people staying with a supplier or looking elsewhere.

6. Discussion

Our analysis of secondary qualitative interviews and quantitative data from the OFGEM report, demonstrates that the members of energy poor households can exercise agency in the retail energy market, through a wide range of ways beyond merely switching supplier, and these are not limited to the role of ‘purchasing consumer’. However, they face barriers to doing so associated with difficulties in accessing the internet, and in understanding the retail energy market. These amount to ways in which specific market devices (for e.g. the goal of a competitive market, underpinned by a belief that people can act rationally in response to information, and a belief that good market information exists and can be disseminated) are barriers to people's agency. When the market is built in a way that requires people to access the internet and to have a certain level of literacy, it also excludes some people from participation. Some energy poor households have these skills, or can access them through their support network, but those that cannot will need extra help.

Our findings here have more to say than merely ‘some people are excluded from the market’. Our explanation of how people experience the market is relational rather than rational. For the energy poor

households in this research, the retail energy market is performed by a distinct set of actors – people and organisations – such as energy companies, local council, energy advisor, installers, as well as friends and family that help to access the best prices or particular grants and schemes. This suggests that despite the market being designed under EU competition law, and with a ‘purchasing consumer’ in mind, this is not always how people experience it or use it. In effect this tells us that despite the strong ideas that shape the British market and its regulation [20] the practices of people who experience energy poverty do not follow the same logic. People are not acting on (perfect) information to make rational choices about their energy supply. Instead, they understand the tariffs, mechanisms for switching, subsidies and grants from government mediated through their relationship with loved ones, and with the various agencies and companies active in this space. Also, speaking to and with actors in the energy market directly seems to act as a positive driver for effective engagement with the energy market.

Here, despite a performativity based on ideas of rational choice, our respondents take a relational approach to the retail energy market, in itself intriguing evidence that people do not merely perform the roles that are designed for them in markets [47]. This also presents a very challenging rebuttal to OFGEM’s highly persistent subject of the ‘purchasing consumer’ as critically documented by Errington Blakelock [20]. Her critique is that energy poor households are ill-served by OFGEM as a regulator, given that the retail energy market is designed for a purchasing consumer, rather than a vulnerable one. Our evidence supports this view, but we can take this further, and point out that people are not using the market rationally, and therefore OFGEM’s ambition to promote rational behaviour is at least misfiring, if not merely misplaced. Perhaps, as the sociology of money and markets would have it, people do not act rationally within markets, and attempting to make them do so is a project doomed to failure.

So what recommendations can we make from the insight that people operate relationally rather than rationally in this market? It is clear from Errington Blakelock’s comprehensive analysis of OFGEM regulation between 2000 and 2016, that the belief in the ‘purchasing consumer’ is central to OFGEM’s self-image as a market regulator, and is not at risk of being reversed by a qualitatively driven paper like our own, no matter how well evidenced. We are heartened to see considerable movement in the way that this regulator understands vulnerability, shifting from a deficit to a multi-dimensional understanding since 2012 [20,48]. Indeed in a recently updated ‘Consumer Vulnerability Strategy’ OFGEM identify the importance of good customer service in enabling people to switch supplier, and the role of consumer groups and other charities acting on these issues on people’s behalf, both of which relate to our findings above [48]. Perhaps in conjunction with this more complex understanding of vulnerability, OFGEM can also consider that people are accessing support from a range of sources, including friends and family alongside these other organisations.

Indeed, we can see in our data that people frequently engage with the retail energy market through different intermediary actors such as people in charitable organisations, installers of insulation, and advice services and grant providers. Whilst there is a growing literature on the roles of intermediaries and ‘middle’ actors in energy transitions [49,50] this has so far only rarely touched on the roles these actors perform for energy vulnerable groups with a few exceptions [51–54]. Our qualitative data extends the concept of intermediary actors to include the roles often played by family members and friends who helped our interviewees to access and express agency in the market. In many of our interviewees’ lives, the role of these different intermediaries is crucial. Their perceptions and views of the market, are heavily determined by how different intermediaries interact with them, and how successful that interaction is. Knowing that intermediaries are important makes us think differently about how to engage with energy poor households, suggesting that finding trusted intermediaries to lead this engagement is likely to be the best strategy. Here the length of relationships is likely to be important to building trust, as well as the nature of connection to

the person or organisation concerned.

When we consider the potential for radical change in the energy system envisaged in a sustainable energy transition, including decarbonisation of energy in the home, smart technology and systems and more, there is a strong need to avoid leaving a large proportion of the population behind (e.g. older people, people without the internet, people with no family or friends to help them, people with low energy literacy). This might require going beyond energy policy and engaging social services or concerned organisations, which are involved in day-to-day work with affected households. There may also be a role for a wider public conversation about helping others to access the retail energy market. Indeed, it is friends and family that really seem to make a difference to people engaging effectively with the retail energy market: to help each other seek out the best deal and sign up to it.

7. Conclusions

We have illustrated with our research that while the experiences of the retail energy market of those energy poor households are diverse, some households struggle to engage in it, lacking the skills and resources to do so. Challenges especially relate to internet and market literacy, which allow people to find a better deal, and understanding how to access rare grants and schemes to improve their access to energy efficiency. When people do not have such skills, their capacity to participate in the retail energy market is somewhat constrained, especially when they do not have a supportive network of friends and family to assist them, or when they have limited ability to cultivate and maintain a supportive network. Equally, the relationship with the energy supplier is also critical: sometimes greater trust than is deserved is fostered by people’s loyalty to companies that may be overcharging them. On the other hand, there are real opportunities for companies to work to earn this loyalty by promoting good practice.

We also find that our respondents experience their interactions with the energy market as predominantly relational, rather than rational. By this we mean that in the interviews we analysed, people understood the retail energy market through their interactions and history with friends, family and intermediary actors, especially the energy companies themselves, and that their decision-making is based on these relationships, rather than on a narrowly rational economic logic (this one costs less than that one). In light of this understanding of the retail energy market, there is a need for policy-makers and regulators to broaden their conception of how people operate in this market, acknowledging the role of social relations in shaping decisions.

In effect, despite relatively low market participation, explained in our work by uncovering a more relational than a rational conception of the market among our sample, the governance institutions associated with energy at EU and in the UK persist in framing rational decision-making by individuals as the best way of solving this problem. While there is a recognition in these institutions that some people need direct and trusted help to engage in switching, there is much room for improvement in how this is implemented. If we set up the market to work according to a rational logic, and people are acting relationally, outcomes for energy poor households will not be satisfactory.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

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Reference

- W. Anderson, V. White, A. Finney, Coping with low incomes and cold homes, *Energy Policy* 49 (2012) 40–52.
- A.C. de Chavez, The triple-hit effect of disability and energy poverty, in: N. Simcock, H. Thomson, S. Petrova, S. Bouzarovski (Eds.), *Energy Poverty and Vulnerability*, Routledge, 2017.
- C.N. Grey, T. Schmieder-Gaite, S. Jiang, C. Nascimento, W. Poortinga, Cold homes, fuel poverty and energy efficiency improvements: a longitudinal focus group approach, *Indoor Built Environ.* 26 (7) (2017) 902–913.
- N. Longhurst, T. Hargreaves, Emotions and fuel poverty: the lived experience of social housing tenants in the United Kingdom, *Energy Res. Soc. Sci.* 56 (2019) 101207.
- F. McKague, M. Scott, B. Woolcroft, R. Lawson, Understanding the energy consumption choices and coping mechanisms of fuel poor households in New Zealand, *N. Z. Sociol.* (2016).
- L. Middlemiss, A critical analysis of the new politics of fuel poverty in England, *Crit. Soc. Policy* 37 (3) (2017) 425–443.
- A.M. Tod, A. Lusambili, C. Homer, J. Abbott, J.M. Cooke, A.J. Stocks, K.A. McDaid, Understanding factors influencing vulnerable older people keeping warm and well in winter: a qualitative study using social marketing techniques, *BMJ open* 2 (4) (2012) e000922.
- R. Walker, C. Liddell, P. McKenzie, C. Morris, S. Lagdon, Fuel poverty in Northern Ireland: Humanising the plight of vulnerable households, *Energy Res. Soc. Sci.* 4 (2014) 89–99.
- N. Willand, R. Horne, “They are grinding us into the ground”—the lived experience of (in) energy justice amongst low-income older households, *Appl. Energy* 226 (2018) 61–70.
- S. Bouzarovski, S. Petrova, A global perspective on domestic energy deprivation: overcoming the energy poverty–fuel poverty binary, *Energy Res. Soc. Sci.* 10 (2015) 31–40.
- L. Middlemiss, R. Gillard, Fuel poverty from the bottom-up: characterising household energy vulnerability through the lived experience of the fuel poor, *Energy Res. Soc. Sci.* 6 (2015) 146–154.
- R. Day, G. Walker, N. Simcock, Conceptualising energy use and energy poverty using a capabilities framework, *Energy Policy* 93 (2016) 255–264.
- R. Gillard, C. Snell, M. Bevan, Advancing an energy justice perspective of fuel poverty: household vulnerability and domestic retrofit policy in the United Kingdom, *Energy Res. Soc. Sci.* 29 (2017) 53–61.
- K. Großmann, A. Kahlheber, Energy poverty in an intersectional perspective: on multiple deprivation, discriminatory systems, and the effects of policies, in: N. Simcock, H. Thomson, S. Petrova, S. Bouzarovski (Eds.), *Energy Poverty and Vulnerability*, Routledge, 2017, pp. 30–50.
- K.J. Baker, R. Mould, S. Restrick, Rethink fuel poverty as a complex problem, *Nat. Energy* 3 (8) (2018) 610.
- S. Meyer, L. Holzemer, B. Delbeke, L. Middlemiss, K. Maréchal, Capturing the multifaceted nature of energy poverty: lessons from Belgium, *Energy Res. Soc. Sci.* 40 (2018) 273–283.
- S. Petrova, Encountering energy precarity: Geographies of fuel poverty among young adults in the UK, *Trans. Inst. Br. Geogr.* 43 (1) (2018) 17–30.
- C. Robinson, S. Bouzarovski, S. Lindley, Underrepresenting neighbourhood vulnerabilities? The measurement of fuel poverty in England, *Environ. Plann. A: Econ. Space* (2018) 0308518X18764121.
- L. Middlemiss, P. Ambrosio-Albala, N. Emmel, R. Gillard, J. Gilbertson, T. Hargreaves, C. Mullen, T. Ryan, C. Snell, A. Tod, Energy poverty and social relations: a capabilities approach, *Energy Res. Soc. Sci.* 55 (227–235) (2019).
- E.S. Errington Blakelock, What Role did Knowledge of ‘Consumers’ Play in the Formulation of GB Energy Market Regulation between 2000 and 2016? School of Politics, Philosophy, Language and Communication Studies University of East Anglia, Norwich, 2020.
- R. Moore, Definitions of fuel poverty: implications for policy, *Energy Policy* 49 (2012) 19–26.
- OFGEM, Consumer Engagement Survey 2018: Data Tables, 2018.
- OFGEM, Consumer engagement in the energy market 2018: Report on a survey of energy consumers, 2018.
- T. Pallesen, R.P. Jenle, sOrganising consumers for a sdecarbonised electricity system: Calculative agencies and user scripts in a Danish demonstration project, *Energy Res. Soc. Sci.* 38 (2018) 102–109.
- A. Silvast, Energy, economics, and performativity: Reviewing theoretical advances in social studies of markets and energy, *Energy Res. Soc. Sci.* 34 (2017) 4–12.
- F. Cochoy, M. Giraudeau, L. McFall, Performativity, economics and politics: an overview, *J. Cult. Econ.* 3 (2) (2010) 139–146.
- T.M. Skjølsvold, C. Lindkvist, Ambivalence, designing users and user imaginaries in the European smart grid: insights from an interdisciplinary demonstration project, *Energy Res. Soc. Sci.* 9 (2015) 43–50.
- C. Grandclément, A. Nadai, Devising the consumer of the competitive electricity market: the mundane meter, the unbundling doctrine, and the re-bundling of choice, *J. Cult. Econ.* 11 (5) (2018) 440–457.
- C. Cherry, C. Hopfe, B. MacGillivray, N. Pidgeon, Homes as machines: exploring expert and public imaginaries of low carbon housing futures in the United Kingdom, *Energy Res. Soc. Sci.* 23 (2017) 36–45.
- N. Fligstein, L. Dauter, The sociology of markets, *Annu. Rev. Sociol.* 33 (2007) 105–128.
- F. Muniesa, Y. Millo, M. Callon, An introduction to market devices, *Sociol. Rev.* 55 (2) (2007) 1–12.
- V. Zelizer, *The Social Meaning of Money*, 2nd ed., Princeton University Press, Princeton, New Jersey, 1997.
- A. Wilks, *The Moral Power of Money: Morality and Economy in the Life of the Poor*, Stanford University Press, Stanford, California, 2018.
- F. Cochoy, From social ties to socioeconomic attachments: a matter of selection and collection, in: F. Cochoy, J. Deville, L. McFall (Eds.), *Markets and the Arts of Attachment*, Routledge, Abingdon, 2017, pp. 22–37.
- L. McFall, F. Cochoy, J. Deville, Introduction, in: F. Cochoy, J. Deville, L. McFall (Eds.), *Markets and the Arts of Attachment*, Taylor & Francis, Abingdon, 2017.
- D. Helm, Energy policy: security of supply, sustainability and competition, *Energy Policy* 30 (3) (2002) 173–184.
- BEIS, *Annual Fuel Poverty Statistics Report, 2018 (2016 Data)* Department for Business, Energy and Industrial Strategy, 2018.
- A.M. Tod, P. Nelson, A.C. de Chavez, C. Homer, V. Powell-Hoyland, A. Stocks, Understanding influences and decisions of households with children with asthma regarding temperature and humidity in the home in winter: a qualitative study, *BMJ open* 6 (1) (2016) e009636.
- B. Boardman, *Fuel Poverty: From Cold Homes to Affordable Warmth*, Belhaven Press, London, 1991.
- T. Hargreaves, L.J.N.E. Middlemiss, *The importance of social relations in shaping energy demand*, 2020.
- N. Longhurst, T. Hargreaves, The emotions of fuel poverty: energy vulnerability and the lived experience of social housing tenants in the United Kingdom, *Energy Res. Soc. Sci.* 56 (2019).
- S. Irwin, Qualitative secondary data analysis: Ethics, epistemology and context, *Progress Dev. Stud.* 13 (4) (2013) 295–306.
- N. Ruggiano, T.E. Perry, Conducting secondary analysis of qualitative data: should we, can we, and how? *Qual. Soc. Work* 18 (1) (2019) 81–97.
- N. Emmel, *Sampling and Choosing Cases in Qualitative Research: A Realist Approach*, London, 2013.
- I.F. Dufour, M.-C. Richard, Theorising from secondary qualitative data: a comparison of two data analysis methods, *Cogent Educ.* 6 (1) (2019) 1690265.
- G. Walker, Decentralised systems and fuel poverty: are there any links or risks? *Energy Policy* 36 (12) (2008) 4514–4517.
- F. Cochoy, From social ties to socioeconomic attachments: A matter of selection and collection, in: J. Deville, L. McFall, F. Cochoy (Eds.), *Markets and the Arts of Attachment*, Routledge, Abingdon, 2017, pp. 22–37.
- OFGEM, *Consumer Vulnerability Strategy 2025*, 2019.
- Y. Parag, K.B. Janda, More than filler: Middle actors and socio-technical change in the energy system from the “middle-out”, *Energy Res. Soc. Sci.* 3 (2014) 102–112.
- M. Martiskainen, P. Kivimaa, Creating innovative zero carbon homes in the United Kingdom — Intermediaries and champions in building projects, *Environ. Innov. Societal Transitions* 26 (2018) 15–31.
- S.J. Darby, Coal fires, steel houses and the man in the moon: local experiences of energy transition, *Energy Res. Soc. Sci.* 31 (2017) 120–127.
- A. Reeves, Exploring local and community capacity to reduce fuel poverty: the case of home energy advice visits in the UK, *Energies* (2016).
- M. Martiskainen, E. Heiskanen, G. Speciale, Community energy initiatives to alleviate fuel poverty: the material politics of Energy Cafés, *Local Environ.* 23 (1) (2018) 20–35.
- M. Lacey-Barnacle, C.M. Bird, Intermediating energy justice? The role of intermediaries in the civic energy sector in a time of austerity, *Appl. Energy* 226 (2018) 71–81.