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what makes landlords act?**

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**Improving energy efficiency in private rented housing: Why don't
landlords act?**

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Abstract

The private rented sector in England contains some of the least energy efficient properties in the country and houses more vulnerable households than any other sector. Occupants endure dangerously cold homes and fuel poverty but have no direct influence over the energy performance of their homes. The choices that occupants make regarding energy are constrained by the material characteristics of a property: something only the landlord can alter. Enduringly poor conditions in the sector indicate that an initiative that convinces landlords of the benefits of improving energy efficiency remains elusive. Based on a review of existing research and 30 interviews with landlords, this paper identifies factors which deter landlords from acting to improve energy efficiency. Factors include lack of knowledge regarding the consequences of energy inefficiency and possible solutions, the absence of direct financial incentives (the principal-agent problem), local housing market and cultural factors. It also identifies a number of motivating factors that may encourage landlords to invest in energy efficiency. It is argued that policies to tackle energy inefficiency in the sector should take account of these factors in order to improve effectiveness.

Key words

Private rented sector, domestic energy efficiency, principal-agent, The Green Deal, private landlords, split incentive

Introduction

The private rented sector (PRS) in England contains some of the poorest quality and least energy efficient properties in the country as well as housing more vulnerable households than any other sector. Similar issues exist in many countries around the world including New Zealand and the USA [1].¹ Occupants of such properties endure dangerously cold homes and fuel poverty but have little direct influence over the energy performance of the properties they live in. The choices that occupants make regarding energy consumption and the amount of money they spend on it are, to a large extent, constrained by the material characteristics of a property (such as its thermal performance and mode of heating): something only the landlord can alter.

Enduringly poor conditions in the sector attest that not enough is known about how to persuade private landlords to improve the energy performance of their properties. By drawing on insights from a case study of private landlords of poorly performing properties in a town in the north of England, this paper aims to add to our understanding of what discourages landlords from taking action to improve energy efficiency and how these barriers might be overcome. By better understanding landlords' decision making processes, the paper also aims to identify factors which may be harnessed to motivate landlords to invest in energy efficiency.

Energy efficiency in the English private rented sector

The PRS in England has grown rapidly since the end of the last decade (English Housing Survey 2012/13). Of the 22.8m households in England in 2011, 4 million were living in privately rented housing: an increase of 1.6m in six years [2].

Despite this huge growth, levels of energy efficiency within the sector are very poor compared to other sectors as attested by various figures provided by the Association for the Conservation of Energy (ACE) [2]. ACE report that the PRS contains a higher proportion (11%) of the most energy inefficient homes (those in bands F and G of the Energy Performance Certificate (EPC) scale than any other sector.² By comparison, less than 2% of social housing is F or G rated. In 2011 nearly half the households living in privately rented F and G rated homes were in fuel poverty: higher than in both the social rented and owner-occupied sectors [2].³

The consequences of these conditions for residents of the sector are equally well documented and the evidence paints a clear picture of vulnerable tenants enduring dangerously cold homes that are unaffordable to heat [2, 3, 4, 5]. Indeed, the PRS has the highest incidence of 'excess cold' of all English housing tenures. Over 400,000 private rental homes – 15 per cent of the total – are classified as a Category One 'excess cold' hazard under the Housing Health and Safety Rating System (HHSRS) [6] meaning that they are so cold that they pose a threat to health.^{4 5}

Compounding these issues, the sector houses a higher proportion of vulnerable individuals than any other sector [7]. Previous research has established that vulnerable individuals are, despite being the most adversely affected by poor living conditions, amongst the least empowered consumers and therefore unlikely to lobby landlords for improvements [1,3,8]. The position of dissatisfied tenants is weakened further by unsupportive case law which has established that any person taking on a lease for a property takes it as it stands [1], giving tenants little recourse to request improvements once living in a property. In 2007, there were 3.1 million vulnerable households living in private housing, of which 61 per cent occupied 'non-decent'

accommodation, as defined by the UK government.^{6 7} Of this 61 per cent, 48 per cent were private rented sector tenants [7].

The absence of minimum energy efficiency standards within the PRS, mean that options for tackling the problem of widespread energy inefficiency and its many corollaries are limited. Indeed, the only regulation of quality within the sector comes in the form of the HHSRS under which local authorities can require improvements to be made to properties deemed to represent an excess cold hazard (as previously defined). However, this system arguably doesn't go far enough in terms of addressing energy inefficiency, as it requires conditions to be extremely poor before it can be implemented and relies on such conditions being brought to the attention of the local authority, either by the tenant or a third party. Energy Performance Certificates (EPCs), which provide information about a property's energy performance (rated on a scale of A-G) and costs and how this might be improved, have also been mandatory for all rental properties let since 2008. However, although they may raise awareness of energy performance amongst both landlords and tenants, there are currently no consequences for letting out a poorly performing property.

There is a reasonable level of consensus within the policy literature as to how poor conditions in the PRS have become entrenched. Dominant explanations cite market factors which emphasise how high demand and low supply leave consumers in a weak position, combined with a lack of regulatory intervention. Shelter describes this situation in their report on conditions within the PRS, which states that: *'where demand outstrips supply, renters lack basic consumer power to bargain for better conditions.'* Barton [1] elaborates by highlighting how, for various reasons, low

income groups are often in the weakest positions in terms of negotiating improvements to their homes, stating that *'poor people tend to live in rental housing [they are] more likely to have weak market power to bargain [...] about the state of the dwelling.'* This is particularly the case in Great Britain where reforms to the housing benefit systems since 2010 have resulted in fewer landlords being willing to offer housing benefit claimants a tenancy, forcing the most vulnerable in to the least desirable locations and properties [9,10,11,12].

There is no doubt that demand for PRS properties continues to rise in a post 2008 climate where house building rates remain low, mortgages are difficult to secure and the social housing sector is contracting [13]. It is also clear that as demand increases, housing choice amongst private renters becomes increasingly constrained at the same time as rent levels continue to rise [13]. Under these conditions, the majority of landlords will have little difficulty letting their properties and continue to experience steady growth in rent levels [13]. There is therefore little incentive for them to invest in anything other than essential repairs. This situation demands a robust regulatory response or powerful financial incentives [5].

In 2011, a response from the UK government was finally forthcoming in the form of the Energy Act 2011 which states that from 2016 legislation to drive up environmental performance in the sector will be introduced. From April 2016 landlords will be unable to refuse requests from tenants for 'reasonable' energy efficiency improvements and from April 2018 all PRS properties must achieve a minimum EPC rating of E (where this is physically and economically possible). There are some obvious flaws in this legislation which suggest that it is unlikely to impact significantly on the problem, particularly at the lower end of the market. First, the

2016 legislation relies on tenants feeling sufficiently empowered to request improvements [1,3] and landlords making the requested improvements. Questions remain regarding how the legislation will be enforced and what will be considered a 'reasonable' request. The legislation, as it stands, permits exemptions on various grounds including where the achievement of an E rating would result in a net decrease in a property's value. Although welcomed as a step in the right direction, the legislation has been criticised for not going far enough due to the various caveats and exemptions it sets out and its reliance on finance mechanisms that may not exist when it comes into force [2].

There are many reasons why regulatory action has been slow to manifest and heavily caveated when it has arrived. A key concern relates to chronic housing shortages in the UK which gives rise to nervousness that the enforcement of minimum quality standards within the PRS may lead to an exodus of landlords from the market [9,10,11,12]. Although it seems unlikely that landlords will try to sell on properties when owner occupation continues to fall and property prices remain below 2008 levels for much of the country [14]. Concerns about an exodus are possibly more valid within London and the South East where property values continue to rise sharply. However, other more immediate concerns such as reductions in the Local Housing Allowance and the direct payment of housing benefit to tenants appear more likely to encourage landlords at the lower end of the market to take their properties out of the rental market [9,10,11,12].⁸

Landlords of pre-1919 properties are also concerned that it may be practically and financially difficult for them to improve energy performance to the required level [15]. Whilst it is true that pre-1919 properties are both difficult to treat and prevalent within

the PRS (accounting for 37 per cent of the sector compared to 7 per cent in social housing and 20 per cent of owner occupied properties) [16], these concerns are refuted by a number of recent publications.⁹ One such example includes research by Griffiths [17] which found that, of a representative sample of 3000 houses in Great Britain, every dwelling was capable of achieving an EPC rating of E at a cost of between £1,400 and £3,500 per property and without resorting to unconventional measures beyond the building regulations. Moreover, a similar study by the Energy Savings Trust [15] found that even the hardest to treat F and G rated homes (those with average fuel bills of £2,700 per annum) would cost an average of £5,800 per property to improve to a D rating. This latter study also revealed that even the most modest investments (i.e. loft insulation at £900) could yield annual energy bill savings of £190 per household. Another recent study from the Department of Energy and Climate Change (DECC) [18] also suggested that there may even be longer term benefits for landlords willing to invest in energy efficiency, stating that such investments will be recompensed by property value increases of between £15,000 and £42,000 depending on location.

Furthermore, research from New Zealand, where climatic conditions and private housing conditions mirror that of the UK, gives a clear indication that the benefits of energy efficiency improvements extend beyond financial gains to impact significantly on the health of tenants [19].

In advance of the Energy Act, efforts to improve energy performance in the PRS rely on voluntary incentive based initiatives such as the UK government's current flagship domestic energy efficiency programme, The Green Deal and linked scheme, The Energy Company Obligation (ECO). The Green Deal is a financing mechanism using private finance (provided by an accredited Green Deal provider e.g. an energy

provider or other private company) to pay for domestic energy efficiency improvements. The loan is repaid by the occupant using the savings they make on their energy bills as a result of the measures installed. The Green Deal has ostensibly been designed to protect the consumer via a clause known as 'The Golden Rule' whereby the loan repayments should not exceed the amount saved on energy bills through the measures funded. In other words, tenants' bills should not increase as a result of taking out a Green Deal loan.

The obligation to repay the loan is passed from tenant to tenant in the PRS or owner to owner in owner occupied properties. The consent of both the landlord and the tenant are required to take out a Green Deal loan. Vulnerable groups and those living in properties deemed by a Green Deal Assessor to be 'hard to treat' may be eligible for subsidised measures under the ECO. The Green Deal and ECO can be used in tandem to finance improvements.

The Green Deal has been widely criticised for its technical and legal complexity, regressive nature, for being unattractive to the consumer (due to high interest rates and perceived impacts on property values) and for being tailored to the requirements of middle class home owners over and above the low income groups least likely to adopt energy saving measures [1,20,21,22]. The initiative has, however, been designed to ensure that there are no capital costs to the landlord ostensibly in a bid to tackle one of the most commonly identified barriers to improving energy efficiency in the PRS: the so-called 'landlord-tenant' problem, discussed in more detail in the following section, whereby the landlord is not willing to invest in energy efficiency improvements as the benefits will be felt by the tenants and are unlikely to impact on the rent they are able to charge [1].

Due to its departure from classic grant-based initiatives common in the past in the UK, academic and policy interest in the Green Deal has been significant, even beyond the UK. Indeed New Zealand academic Barton [1] stated that *'Once the Green Deal gets underway, it will provide insights into a determined effort to bring energy efficiency improvements into the private rental sector.'* In stating this Barton underlines the need for research into the effectiveness of the Green Deal as an approach to improving energy efficiency in the PRS which aims to tackle the 'landlord-tenant' problem by passing responsibility for the cost of energy efficiency measures on to the tenant.

Take up of the Green Deal has been unprecedentedly low with just a few hundred loans having been taken out since its introduction in 2012 [23]. ECO, which, if taken alone, reflects a more traditional grant-based approach, has been more successful, having delivered insulation improvements to around half a million homes [23]. However, the success of ECO is relative to the poor performance of the Green Deal and is likely to have impacted very little on the situations of the almost two million vulnerable households living in 'non-decent' accommodation in the UK [7], not least because ECO support is not exclusively available to vulnerable households and can be issued to more affluent households living in 'hard to treat' homes.

The failure of the Green Deal, ECO and a raft of previous and parallel initiatives (including EPCs) to impact on the problem, as attested by enduringly poor conditions in the PRS, gives a strong indication that not enough is known about what deters landlords from taking what policy makers believe is rational action [1]. Indeed, the majority of research into the attitudes and perceptions of PRS landlords has been quantitative and has neglected to explore the psychological and social factors behind landlords' decisions and behaviour [24]. Overall, it is evident that little progress has

been made over at least the last two decades, since the 1991 English House Condition Survey first highlighted the problem of poor energy performance in the PRS, to develop policies and initiatives that convince landlords of the benefits of making energy efficiency improvements [25].

This paper seeks to help address this deficit in our understanding of what deters and motivates landlords to act through the provision of empirical evidence revealing insights into their decision making processes regarding investment in energy efficiency. Before reporting the findings of this research, it is important to establish what can be gleaned from the existing literature about what prevents landlords from acting to improve energy efficiency.

What do we already know about what prevents landlords from acting?

A handful of key sources [1, 22, 25, 26] point to a 'mismatch' within the PRS between the party paying the costs (the landlord) and the beneficiaries of the improvements (the tenant). This, they argue, represents a failure of the market dubbed the 'tenant-landlord problem' [27] and is the predominant reason for poor energy performance within the PRS. This problem has been described variously as the 'principal-agent' or 'split incentive' problem. These concepts are used to describe a situation whereby the landlord (the agent) determines the level of energy performance within a building, while the tenant (the principal) pays the energy bills [28]. This well established argument continues that, where principals are poorly informed about energy efficiency then they are unlikely to be willing to pay a premium for an energy efficient property. Knowing this, the agent is unwilling to invest or will underinvest in energy efficiency on the basis that they will not be able to recoup the cost of their

investments through sale or rent of the property [29]. The 'split-incentive' theory operates similarly [2].

Jaffe and Stavins [29] and Jakob [30] introduce another dimension to this debate in their respective discussions of energy saving technology adoption rates, positing that it is costly and time consuming for individuals to learn enough about an innovation to understand whether it is profitable and how to use it. This, they contend, is a significant market barrier to innovative technology adoption. The argument continues that landlords are less likely to dedicate time to acquiring knowledge regarding the drawbacks, benefits, supply, financing and installation of an innovation than those who pay the energy bills. The tenant however, does not have a mandate to make such decisions. Moreover, they contend that even if landlords were persuaded to dedicate time to this, they would likely find inconclusive evidence regarding likely payback periods, particularly given uncertainties over future energy prices, rendering them unable to reach an informed decision. Hope and Booth [24] also point to a lack of knowledge regarding energy efficiency amongst landlords surveyed through their research, having identified that the majority considered the energy performance of their properties to be good, when this is unlikely to be the case. However, they go on to caution that educating landlords is unlikely to automatically foster pro-environmental behaviour as the drivers of this are rather more complex than that [24].

The principal-agent/split incentive problem and issues of knowledge deficit resonate across different contexts, having been widely identified in the UK, USA, Europe, Australia and New Zealand. There is, however, less coverage within the literature regarding solutions and policy responses. Jaffe and Stavins [29] offer some relevant opinions in relation to increasing uptake of energy saving technology arguing that where barriers have a market dimension (i.e. the principal-agent problem) then

government should intervene. In relation to non-market issues, incentives should be applied. Economic incentives and regulation can be equally effective under different circumstances, they assert. This point is supported by Bradbrook [22] who concluded that a combined 'carrot and stick' approach was desirable, bringing together incentives such as tax credits alongside legal requirements and Scanlon and Kochan [31] argue that incentives are essential to promote action amongst landlords operating as small businesses. Gabriel and Watson [32] and Hope and Booth [24] add that, in relation to both regulations and incentives, the problem requires a more targeted response tailored to the particular dynamics of different segments of the PRS (i.e. large and small landlords), something that energy policy has so far neglected to do [31,33].

The existing literature therefore offers a number of hypotheses that can be taken forward in the analysis of the empirical data presented later in this paper, including market and non-market barriers to landlords investing in energy efficiency, such as: a lack of knowledge amongst landlords in relation to energy efficiency [24,29,30], the presence of the principal-agent problem, high demand for rental properties [3] and a lack of demand for improvements amongst disempowered tenants [1,8].

This paper aims to add to the existing literature in two main ways. First, by providing contemporary insights into factors deterring landlords from investing in energy efficiency, gleaned through detailed qualitative research. Second, by providing a case study of a current policy intervention (the Green Deal) and analysis of possible reasons why it may have failed to impact on the problem it was designed to tackle. As Barton emphasises, exploring the factors behind the disappointing performance of the Green Deal is particularly important in light of the fact that it should, in passing

the cost of the improvements on to the tenant, circumvent the principal-agent problem.

Methods

The data informing this paper was collected as part of a research contract between the author and a local authority in a town in the North of England. The research was commissioned to enable a better understanding of how the local authority might encourage landlords to improve the energy performance of their properties particularly through the Green Deal and ECO, launched at the time of the research in 2012.

To gain a detailed and nuanced understanding of landlords' attitudes towards making improvements, in depth qualitative interviews were employed. A total of 30 interviews were conducted over three months. This approach goes some way towards rebalancing the evidence base in relation to landlords' attitudes and perceptions of energy efficiency, which has to date been largely quantitative in nature, neglecting to shed light on the reasons underpinning landlords' inertia and the less tangible aspects of their decision making processes [24].

All interviews lasted between 45 and 90 minutes and covered a number of standard themes including: becoming a landlord, portfolio and business models, awareness of energy efficiency policy and likelihood of taking up the Green Deal.

All of the landlords in the sample had poorly performing properties within their portfolios with a Standard Assessment Rating (SAP) of 38/100 or below.^{10 11} A SAP rating of 21 to 38 is equivalent to an F rated property on the EPC scale and 1 to 20 is a G. The town suffers multiple deprivation and the majority of participating landlords

owned low value properties let to low-income tenants. Like most former industrial towns in England, the housing stock is predominantly pre-1919.

Interviewees varied in terms of the size of their portfolios, owning anything from one to 200 properties in the area.

Due to the relatively small sample size and the fact that the research was focussed in one location, it cannot be claimed that this study is representative of the sector as a whole. Instead, the data collected sheds light on the perceptions of landlords operating at the lower end of the rental market and whose properties are amongst the most poorly performing (although fairly typical of the English urban housing stock). The sample could therefore be said to represent a group of landlords who face particularly stubborn barriers to property improvement. It is likely that the findings presented would resonate across similar contexts, certainly across the urban north and midlands of England and perhaps more widely still (housing market dynamics in the South and particularly the South East tend to operate differently) [9].

Recognising the heterogeneity of the sector and of landlords [32], it is strongly advocated that similar studies are conducted across a diverse range of contexts to enable the most comprehensive insights possible into the motivations and decision making processes of different types of landlords.

Findings: Why don't landlords act on energy efficiency?

70 per cent of respondents perceived no benefits to making energy efficiency improvements to their properties. Those who would consider this said they would only do so if grant funding or subsidy was made available. This section explores the

reasons behind landlords' reluctance to improve the energy efficiency of their properties in the case study area.

Lack of knowledge and misinformation

The work of Hope and Booth [24] highlighted a paucity of knowledge and understanding in relation to energy efficiency amongst landlords and Jaffe and Stavins [29] and Jakob [30] highlight how this knowledge deficit can deter landlords from taking action. If landlords are not aware of the deficiencies of their properties and the associated consequences for both tenants and the physical fabric of the property then there will, of course, be no impetus to act. Moreover, even if landlords are aware of such deficiencies they may be deterred from acting by a lack of knowledge of the potential solutions and by misconceptions about cost or practical feasibility. As Jaffe and Stavins [29] and Jakob [30] emphasise, understanding the issues and potential solutions requires a significant investment of time and can be confusing without technical knowledge. Recognising these issues, discussions with landlords commenced by exploring their awareness of the energy performance of their properties.

The majority (around 70 per cent) of respondents were aware of the energy performance ratings of their properties as detailed in the EPC. Most also understood that their properties performed poorly (most rated as E or below on the EPC scale). However, respondents were keen to qualify and 'normalise' this situation, emphasising their belief that there would be very few properties in the town that achieved anything above a D rating due to the prevalence of pre-1919 housing.

'I know that it's [the property] an E rating from the EPC but I also know that it's no different to the vast majority of houses in [the town]. They were all built at around the

same time and are not up to modern standards. So I'm offering the same product as everyone else.' (Landlord, 10 properties)

It appeared that poor energy performance was regarded as the 'norm' in the town and that poor conditions were largely accepted by landlords. The previous quote also suggests that the heterogeneity of the local housing stock dis-incentivises improvement as there is very little 'competition' within the market from better performing properties. Several landlords also felt a sense of hopelessness, questioning how much impact they could make on such a widespread problem. Perceptions that the housing stock locally was no longer fit for purpose were common but equally, there was recognition that mass demolition was not practically possible or politically palatable.

'There's a bigger problem here than me improving my few little houses isn't going to solve and that's the fact that the housing in this town as with many others needs rebuilding. We need to start again but for many reasons that just can't happen.' (Landlord, 4 properties)

Landlords' also frequently questioned the extent to which it was possible to improve the energy performance of individual properties. Misconceptions about the degree to which pre-1919 housing of the type prevalent in the town could be improved to above an E rating as forthcoming legislation will require, were common. The quote below illustrates this but also alludes to another issue: the conflation by landlords of general improvements and maintenance with energy efficiency improvements. For example, the landlord appears to believe that a new roof should contribute to uplift in energy performance. The quote also suggests that only 'traditional' insulation and gas central heating have been considered as a means of improving energy

performance. No mention is made of micro-renewables or solid wall insulation (SWI), for example.

'We renovated the property when we bought it. Extended it, re-roofed it, put in gas central heating, insulated the loft and it's still only an E rating. It's misleading because with a period property like this, that's about the best you'll ever achieve.' (Landlord, 2 properties)

The belief that a pre-1919 terraced property cannot exceed a D or E rating is challenged by the results of the 'Super Homes' project which found that that traditional terraced housing of the type found in the case study area can achieve an A rating.¹² This does however require significant investment and respondents were wary of investing more money in their properties than their value can support. This issue is revisited later in the paper.

Despite evidence that the requirement for EPCs had raised landlords' awareness of the energy performance of their properties, the majority of respondents viewed them as a bureaucratic exercise and saw little value in them. These views were reinforced by the perception that tenants reportedly seldom asked to see EPCs or asked questions about energy costs. The majority of respondents contended that the condition and location of the property and a 'fair' rent remained tenants' primary considerations.

'Nobody is interested in EPC ratings, all tenants are concerned with is the condition of the place and how much you are charging.' (Letting agent, 200+ properties)

The principal-agent problem

The principal-agent problem emphasises the mismatch between who pays for energy efficiency measures (usually the landlord) and who benefits from them (usually the tenant). Under this arrangement the landlord has little incentive to invest, due to the widely held belief that it would yield no financial benefits for them in terms of capital growth or an increase in rent [1]. This idea is challenged, to some extent, by research from DECC suggesting that capital appreciation may occur following energy efficiency improvements [18]. However, the views of respondents accorded with the principal-agent problem as the dominant perception remained that they have little to gain from energy efficiency investment, not least as tenants wouldn't withstand a rent increase, they believed.

'Unfortunately, much as we would like to be able to improve energy efficiency in our properties, it's effectively dead money as we'd never see it back. No tenant would be happy with a rent increase to help cover the costs.' (Landlord, 40 properties)

It should therefore follow that were the landlord to be responsible for the payment of energy bills, they would be more likely to invest in energy saving measures. However, due to a number of factors including: a long established culture of tenants taking responsibility for energy bills, fears on the part of landlords that flat fees for energy will lead to overuse and substantial rises in energy prices within the UK, it is highly unlikely that landlords would take on this responsibility. Moreover, all respondents were clear that they considered the temperature of the home and energy costs to be firmly the responsibility of the tenant.

'The temperature of the home is a very personal thing. Personally I wouldn't have my heating on above 20 degrees, ever. Now, if my tenants want to have it on at 25

degrees all the time because they like it warm then that's up to them....as long it doesn't get in the way of them paying the rent.' (Landlord, 16 properties)

This position is unsurprising as it would be very unusual for a landlord to pass opinion on tenants' decisions regarding energy use (unless they were in some way damaging the fabric of the property). It does, however, imply a strong element of choice on the part of the tenant. The landlord quoted above does not appear to consider that a poorly insulated home and/or one with an inefficient boiler for example, will cost more to heat than a better performing property.

In order to further test the resonance of the principal-agent problem in the case study area, landlords were asked to consider a hypothetical scenario where they were responsible for their tenants' energy bills. Those that responded to this gave a clear impression that in this scenario, their interest in energy saving measures would increase substantially.

'That would very rarely happen [the landlord paying energy bills] because it would simply be abused in many cases, but if that was the case then obviously I would want to make sure I was saving money wherever I could whether it's through insulating or whatever. It's just good business sense.' (Landlord, 50 properties)

The discourse used by landlords in this context is significant here in so far as they tended to use the language of finance rather than energy savings when reflecting on this issue. It is therefore clear that landlords' motivations would be financially driven.

However, while most landlords see no justification for taking on responsibility for energy bills, some did recognise the potential for high energy costs to impinge on the ability of tenants to meet rent payments. In this sense, an incentive does exist, to some degree, for landlords to help reduce tenants' energy costs. It is, however,

unlikely that any action would be taken until the point where tenants were struggling to make rent payments and, in a climate of high demand for rental properties, eviction/non-renewal of tenancies and the replacement of tenants are arguably just as likely [9,10,11,12, 24].

It does, however, seem possible that the progressive tightening of the budgets of low income tenants as the UK government continues to implement welfare cuts is more likely to compel landlords to take an interest in reducing tenants' bills. The work of Beatty et al [9,10,11,12], however, provides evidence that the response of landlords to tenants finding it difficult to pay their rent will depend on the dynamics of the local rental market. In buoyant areas such as much of London, many landlords will have the option of replacing struggling tenants with more affluent ones. Yet, in areas where the local rental market is dominated by low-income groups, they are more likely to work with existing tenants. This is true in the case study area, where landlords acknowledge the lack of diversity of tenants.

'Yes, demand is high for rental properties here like it is everywhere but you have to think about what type of tenants on offer. This is a poor area and most people are in the same boat, so that dream middle class tenant doesn't exist round here. The best you hope for is a tenant that is reliable and keeps the place nicely.' (Landlord, 16 properties)

Prioritisation of cosmetic improvements

A key area in which the findings from this study add to our understanding of how landlords approach decisions regarding energy efficiency investment is in providing evidence of the landlords' prioritisation of cosmetic improvements over and above any other forms of investment in a property.

Around half of respondents reported that they had made improvements of some kind to their properties in the last five years. The improvements reported were primarily aimed at improving appearance and function, including: decorating, new carpets, replacement of kitchens and bathrooms and the installation of new windows and doors. There were two primary motivations for such improvements: the need for a general periodical upgrade and requests from tenants.

One third of those that had made improvements considered that they had, in undertaking improvements, increased energy efficiency in some way: further evidence of the tendency to expect general improvement to lead to improved energy performance. Whilst in some cases, it may be legitimate to expect this, for example, the installation of double glazing will yield both cosmetic and energy efficiency benefits, in other cases there is little or no relationship (e.g. a new kitchen).

'We re-wired, put in new kitchens, decorated and put in double glazing, what more can we do?' (Landlord 50+ properties)

Such misconceptions were common and reinforce the finding that respondents have a limited understanding of what is required to improve energy performance. For most landlords, improvements which yielded only energy efficiency benefits (such as insulation) were seen as a lesser priority than those that enhance appearance and amenity such as new bathrooms, kitchens or carpets, for example. This strategy was pursued on the basis that tenants are perceived to attach little importance to energy performance, but are very concerned with appearance and functionality.

'I've never known anyone to ask whether the loft is insulated but people do notice how old the kitchen is or if the carpets are stained.' (Landlord, 12 properties)

The replacement of inefficient boilers and heating systems were also viewed as a priority by some landlords as tenants reportedly expect an effective heating system and unreliable equipment leads to more callouts. It therefore seems reasonable to suggest that the replacement of central heating systems and/or boilers and the installation of double glazed windows are the energy efficiency improvements landlords are most likely to fund due to their dual amenity and energy efficiency benefits.

The majority of respondents chiefly aspire to keep their properties well maintained to ensure they are 'liveable' and 'lettable'. Providing a well-insulated property was only considered part of this by a less than five respondents.

The housing market

Several landlords cited the relative weakness of the local housing market including low rental yields and low equity levels as significant barriers to action. The primary concern was that money invested in what landlords deemed 'non-essential' improvements would not be reflected in rent levels or property values. The following quote illustrates this point, as a landlord recalls being quoted almost twice the value of their property to make various improvements to a property required by a voluntary landlord accreditation scheme, which would include bringing energy performance up to an E rating. An investment of this scale in such a low value property would push this landlord into negative equity.

'I'm wary of trying to make a silk purse from a sow's ear. We've previously been quoted £68,000 to bring a £35,000 flat up to standard.'

This quote also serves to highlight that the improvements that landlords are faced with will not be confined to energy efficiency and may include compliance with fire regulations and repairs to the fabric of the property, for example. Therefore, energy efficiency improvements form just one part of a host of investment considerations facing landlords and in the absence of minimum energy performance standards and given the pervasive view that improved energy performance does not impact on rent levels or capital values; they are unlikely to rank highly in landlords' priorities.

A local letting agent introduced another dimension to this debate, suggesting that investment in non-essential improvements may be reflected in rent levels and capital values to a greater extent in 'better' neighbourhoods. For example, improving a property in a desirable neighbourhood to a higher standard can help ensure it remains competitive. He also added that higher capital growth in such areas enables and encourages such investment. In low value areas the opposite is true.

'There is a cut off point for rent in the area and if you create this little palace in the middle of [low value neighbourhood], no one will thank you for it. If you spend loads of money on it then you have to get that back through the rent and no one is going to pay more for your slightly better terrace than they will for the average one next door. The area serves a certain market- people on low incomes and benefits; there is a limit to how much they can pay in rent regardless of condition.' (Letting agent, 200+ properties)

However, as previously outlined, research by the [15, 17] regarding the costs of upgrading F and G rated properties suggests that landlords in the study area may have been overestimating the amount required to bring their properties up to an E rating or above.

Landlords' perceptions of the Green Deal

The Green Deal was rejected by the majority of respondents, 26 out of 30 of whom said they would not support their tenants to take out a Green Deal loan. Many of the concerns cited related to responsibilities placed on the landlord under the Green Deal. In particular they were concerned about the requirement to make repayments on the Green Deal loan during void periods or if tenants defaulted. Concerns were also raised about the potential issues that might arise around a change of tenant or the sale of a property as a result of having a Green Deal loan attached to it.

Many were concerned that their properties might become more difficult to let with a Green Deal loan attached to them, not least due to potential misconceptions on the part of tenants that this is a conventional loan on which they would have to make repayments in addition to the payment of their energy bills. There was also concern about pay back periods, and many landlords felt that many tenants would not remain in the property long enough to witness any savings on their energy bills as a result of the works.

'The savings are likely to be minimal and I know my tenants won't want to take on the debt as they perceive it. The majority of them are on low incomes and are opposed to debt. I think unless they were seeing the savings instantly then they will never go for it.' (Landlord, 12 properties)

In this scenario, it was not felt that the 'Golden Rule' would be of much reassurance to tenants who many landlords felt would not trust that their bills would not increase as a result of the loan. This reflected broader concerns that any potential savings made will be negated by further rises in energy costs, therefore lengthening the time

it takes to pay back the loan. More positively, it was generally accepted that, in the short term, tenants may benefit from warmer homes.

'I accept that tenants would be getting a warmer property and that in reality may not actually be paying any more in terms of repayments and bills compared to other properties that had not had these improvements but it's easy to say these things in principle but in reality, who knows?' (Landlord, 40 properties)

Landlords also expressed a general aversion to any kind of loan finance. The majority of respondents operated a business model whereby, with the exception of essential repairs, they would only make improvements to their property if they had sufficient cash or equity within the property.

'I would only consider it if there was an essential repair that I couldn't fund any other way. Even then I'd rather sell the property on than resort to borrowing. Borrowing's not in my business plan. I only buy properties when I have the cash.' (Landlord, 18 properties)

Discussion

The data presented provides a clear indication of a lack of willingness to act to improve energy efficiency amongst landlords, a conclusion reached by many previous studies in this area [1,3,5,20,21,25,32]. It reveals that, although their awareness of the energy performance of their properties is good (ostensibly as a result of EPCs) this had not translated into an increased propensity to improve them. Several possible explanations for landlords' reticence emerged from the study, some of which reinforced the findings of previous studies, such as a paucity of knowledge amongst landlords regarding possible solutions and their costs [29,30], the existence

of the principal-agent problem and housing market factors (particularly high demand for rental properties).

In relation to the principal-agent problem the findings emphasised the absence of any direct relationship between the energy costs incurred by tenants and landlords' business models. And, in terms of housing market factors, the study revealed more nuanced insights into the specific issues confronting landlords operating at the lower end of the rental market such as lower levels of equity and ceilings on the rent that tenants could or would be willing to pay.

The study also revealed a number of previously unidentified factors including insights into landlords' business models and specifically how essential and cosmetic improvements are prioritised over energy efficiency improvements and the range of competing financial pressures landlords face. It also revealed myths regarding the extent to which the energy performance of pre-1919 housing can be improved and overestimations of the costs associated with this. Misunderstandings were also evident in the belief expressed by several respondents that general improvements may also improve energy performance. Cultural and contextual factors also emerged in so far as poorly performing properties were considered to be the 'norm' in the case study area and the lack of competition from better quality properties acted as a further disincentive to action.

In terms of the effectiveness of the Green Deal in addressing the problem of poor energy performance within the PRS, findings from this study suggest that the initiative is poorly suited to the addressing energy performance in the PRS. In essence, the Green Deal does not appear to have gone far enough towards mitigating the principal-agent problem. Respondents perceived the initiative to be too

risky citing uncertainties around the impact of a Green Deal loan on the re-saleability of their properties and its attractiveness to prospective tenants. There was a clear sense of mistrust that safeguards such as The Golden Rule would function as they were intended to and landlords were particularly concerned about the need to make repayments on the loan during void periods. Critically, landlords were also sceptical that tenants would experience financial savings as a result of the Green Deal during their tenure, suggesting that the initiative is better suited to owner occupiers who both live in a property and have a longer term stake in it.

A clear set of factors preventing landlords from acting therefore emerge and can be used to inform much needed further research into how energy efficiency in the PRS can be improved. These factors can be broadly categorised as follows:

- **lack of knowledge and misinformation** regarding potential consequences of energy inefficiency and the range of possible solutions (exacerbated by a lack of time and technical knowledge amongst landlords)
- **lack of direct financial incentives to landlords** to invest (compounded by lack of awareness of research to the contrary)
- **local and regional housing market factors** including 'ceilings' on rent and property values in low value areas and associated lack of equity to aid investment.
- **cultural and contextual factors:** poorly performing pre-1919 properties of the type pervasive in the UK have become accepted as the 'norm'.
- **transience within the rental market:** occupants rarely have a long term stake in a rental property so are unlikely to contribute to the cost of energy efficiency improvements.

- **low trust in government initiatives** amongst landlords.

The study also identified a number of factors which might motivate landlords to act to improve the energy performance of their properties, which can be categorised as follows:

- **financial:** many landlords' acknowledged the potential threat that high energy bills may pose in terms of tenants' ability to meet rent payments. However, landlords' responses to tenants who experience such difficulties will depend greatly on the dynamics of the local rental market.
- **maintaining attractive properties:** the importance to landlords of keeping their properties in a good state of repair in order to protect their asset and attract and hold on to good tenants was underlined.
- **dual benefits:** landlords' were more likely to invest in improvements that yielded both amenity and energy efficiency benefits.

Conclusions

As the PRS continues to grow and energy prices continue to rise, the need for a robust response to the pervasive energy inefficiency found within the sector grows increasingly urgent. Evidence from this and previous studies cited in this paper suggest that if policies and initiatives (whether regulatory or incentive based) to address this considerable challenge are to succeed in convincing landlords to take action then they should take account of three factors. First, they should be based on a detailed understanding of the business models within which all investment decisions taken by landlords are ultimately made, including local variations in housing market dynamics. Second, they must take account of both landlords

concerns and what might motivate them, however ill-informed some rationales may seem. Third, such policies should be accompanied by efforts to raise awareness amongst both landlords and tenants of evidence regarding the consequences of energy inefficiency and the likely costs and benefits associated with the full range of available solution. This will help ensure informed decisions can be reached and may also help empower tenants. These factors will also be critical in understanding landlords' likely responses to the provisions of the Energy Act forthcoming in 2016 and 2018.

This paper also underlines the need for further research into the barriers (both actual and perceived) faced by landlords and equally, the factors that may motivate and enable investment in energy saving measures. In particular, this paper draws attention to how barriers to and enablers of investment may vary according to local housing market dynamics and thus highlights the need to better understand how policies to encourage investment in energy efficiency may impact differently across different geographical and market contexts.

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Declaration of author's contributions

The named author is the sole author of and contributor to this paper.

Declaration of Conflicting Interests

The author declares that there is no conflict of interest.

Notes

¹ The private rented sector is a housing tenure comprised of privately owned properties being rented out.

² EPCs provide information about a property's energy use and typical energy costs as well as recommendations about how to improve a property's energy efficiency.

The give properties an energy efficiency rating of from A (most efficient) to G (least efficient). EPCs are mandatory when selling or letting a property and a part of an EU wide directive.

³ Fuel poverty in England is now measured by the Low Income High Costs definition, which considers a household to be in fuel poverty if: they have required fuel costs that are above average (the national median level); were they to spend that amount they would be left with a residual income below the official poverty line.

⁴ A home that cannot be economically maintained at temperatures of 18 to 21°C. Even when it is minus 1°C outside, the heating system should be capable of maintaining these temperatures inside.

⁵ HHSRS is the method used by local authorities to assess housing conditions. It is based on the principle that: Any residential premises should provide a safe and healthy environment for any potential occupier or visitor.

⁶ Defined as low-income tenants of rented housing most of whose rents are covered by housing benefit; and elderly owner-occupiers.

⁷ A 'decent home' is defined by the UK government as one which is 'wind and weather tight, warm and has modern facilities' (ODPM, 2004)

⁸ The Local Housing Allowance (LHA) is a housing benefit paid in the UK that helps those on a low income to pay the rent if they rent their home from a private landlord. From 2010, reforms were introduced which reduced the amount of LHA paid to tenants and paid the benefit to tenants who are expected to pass it on to the landlord. Previously, landlords received the payment directly from government.

⁹ Due to their construction, pre-1919 properties are difficult to insulate as they have no wall cavity and often have attics rather than lofts, reducing scope for insulation.

¹⁰ SAP is the official, government approved system for assessing the energy rating for a domestic property. A SAP Rating is a way of comparing energy performance of different homes – it results in a figure between 1 and 100+ (100 representing zero energy cost and anything over means you are exporting energy). The higher the SAP rating, the lower the fuel costs and the lower the associated emissions of carbon dioxide.

¹¹ The lower the rating, the higher the energy costs and Co2 emissions.

¹² See <http://www.superhomes.org.uk/news/old-home-superhome-project-shortlisted-for-award/>

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