



Article

Sustainability Messages in Residential Property Advertising

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Abstract: Companies and brands are increasingly addressing issues of sustainability in their marketing and advertising as they respond to consumers' evolving interests and preferences. While studies have examined the presence of sustainability messages in advertising in general, and in a number of discrete industries, the use of these messages in residential property advertising is critically understudied. Some homebuyers, however, appear interested in these messages, as evidence suggests they ascribe value to certain sustainability claims and features. An analysis of the textual and visual content of 100 property adverts for city centre flats, listed for sale in two English cities in early 2022, afforded detailed insights into the positioning of sustainability in residential real estate advertising. Findings from this analysis indicate that explicit sustainability messages are rare. Property and locational features related to environmental sustainability are mentioned more frequently than those related to social sustainability. Features related to economic sustainability are discussed in adverts targeted at property investors. Sparse explicit discussion of sustainability in adverts might imply that there is little general concern for this issue, either amongst those selling property and/or amongst those buying property. An implication of this might be that pro-sustainability measures targeted at the housing sector may encounter a muted response from actors within the sector, potentially frustrating the implementation of those measures. For homebuyers who are interested in a property's sustainability, the findings suggest that they are poorly served by current practices in property advertising. Estate agents and developers wishing to appeal to these sustainability-minded consumers might do well to incorporate greater commentary on a property's sustainability features in their advertising materials.



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1. Introduction

Firms are increasingly referencing the subject of sustainability in their marketing and advertising as they respond to customers' changing concerns [1,2]. A variety of pro-environmental or green messages and claims, which identify a firm's impact on the environment [3], have been identified in campaigns [4], for example, claims that promote the environmental benefits of a product or service [5]. Alongside growth in such 'green advertising', there has been a proliferation of misleading environmental claims in advertising [6]. The term greenwashing has been coined to describe the practice of firms selectively disclosing positive information about their environmental or social impacts while not disclosing their negative impacts in order to portray an overly positive corporate image [7] (p. 9). Critics of greenwashing claim that it may erode consumer and investor trust, reduce truly pro-environmental efforts on the part of firms and consumers, and hamper the creation of a genuinely sustainable society [6] (p. 371). Studies exploring green advertising and greenwashing have examined the practices in general [5,8,9] and in a number of discrete industries, particularly the fashion industry [10,11].

Relative to the enthusiasm for environmental messages, advertising has appeared more reluctant to include messages pertaining to the social [2,12] and economic [13] aspects

of sustainability found in the widely employed tripartite conceptualization of sustainability [14]. Comparatively few studies have, though, explored the presence of messages that could be linked to the social dimension of sustainability [3], while seemingly none have considered the presence of economic sustainability messages. Social sustainability messages can be defined as messages that highlight a ‘firm’s efforts, commitment and achievements toward contributing to a better society’ [3] (p. 431). This might include messages about a firm’s fair labor practices or community development work [15]. The few studies which have examined the inclusion of social sustainability messages in advertising find that various pro-social claims and actions are promoted. For example, advertising has been found to highlight socially responsible business practices and corporate philanthropy [2,12]. Economic sustainability messages, according to Sander et al. [3] (p. 431), highlight ‘a firm’s ability to respond to short-term financial needs without compromising its ability to meet future needs’. They argue that activities in this economic sphere do not contribute to consumer value in the same way that actions on social and environmental sustainability might. Consequently, when exploring the impact of sustainability messages on consumers’ attitudes to brands, they did not assess the impact of economic sustainability messages. Kriese and Scholz [13] present quite a different understanding of economic sustainability. They interpret economic sustainability as relating to the economic performance or value of a service or product. Statements about the price of a product or service are therefore seen, from their perspective, to constitute economic sustainability messages.

Moving past a narrow focus on advertising’s environmental, social, or economic sustainability claims, some studies have considered the seemingly more expansive concept and practice of ‘sustainability advertising’ [15]. While one might assume such studies would explore advertising’s approach to each dimension of sustainability, assuming also that sustainability is understood as a multi-dimensional construct, usually attention has focused on advertising’s approach to just one dimension [3,15]. Typically, the social, or more commonly the environmental, dimension of sustainability have been the focus of concern [3,15]. Consequently, notwithstanding variations in how sustainability and its constituent dimensions are defined and, therefore, how advertising messages are categorized, research into advertising’s use of environmental, social, and economic sustainability messages remains elusive. It follows, then, that research on how these messages are employed within advertising in specific industries is also scarce. Of interest here, the use of these messages within advertising in the residential property sector is critically understudied [6].

1.1. Sustainability Advertising in the Residential Property Sector

Kriese and Scholz [13] appear to have completed the only detailed analysis of sustainability messages in residential property advertising. They investigated the evolution, since 1870, of the positioning of sustainability in residential property advertising materials. They analysed materials for new build properties in Basel, Switzerland, that were advertised for sale and for rent. They focused on messages relating to the ‘socio-environmental’ dimension of sustainability, setting aside messages linked to the economic dimension [13] (p. 1504). They argued that, other than price, statements related to economic sustainability were unlikely to occur in property adverts, and so they ‘had to leave this aspect [of sustainability] aside’ [13] (p. 1504). They examined advertising materials for sustainability messages pertaining to buildings, such as statements about pro-environmental technology and materials, energy efficiency, indoor environmental quality, flexible layouts, and sustainable building qualities [13] (p. 1508). They also examined these documents for the presence of sustainability messages relating to locations, such as statements about proximity to public transport, services, social infrastructure, and places of work, as well as explicit references to a sustainable location [13] (p. 1508). Finally, they examined these materials for the presence of sustainability messages pertaining to people, such as statements that acknowledged the needs of different groups, that identified diverse groups as possible occupiers of a property, and that constituted ‘explicit social or participatory commitments’, such as commitments to affordable housing [13] (p. 1508). They found that messages about a property’s proximity

to transport, workplaces, social infrastructure, and services were by far the most common sustainability messages included in property adverts. However, proximity was discussed in terms of convenience not in terms of sustainability. The next most common messages articulated how properties or locations addressed children's needs. Explicit sustainability messages were uncommon, especially in marketing materials published pre-1990. Overall, Kriese and Scholz [13] (p. 1521) concluded that, in the residential property industry, other than the issue of proximity sustainability features 'barely merit mention in advertising'.

A small number of studies have examined the prioritisation of discrete sustainability issues, usually relating to environmental matters, in residential property advertising. Aune [16] and Jalas and Rininen [17], for example, explored how energy issues were addressed. They found that energy efficiency and environmental sustainability issues were rarely emphasized in property marketing. Tateishi [6] explored the presence of pro-environmental claims in adverts for greenfield housing developments in a region of Malaysia. He found that these claims were very common and that they usually highlighted ecological benefits accruing to the future occupier of a home, rather than to wider society or the planet. He also found that these claims were usually deceptive, suggesting that greenwashing was widespread amongst the sample of developments he studied [6].

Investigating the position of sustainability within residential property advertising addresses an identified gap in the knowledge. Moreover, it may provide new insights into real estate actors' views on the importance of sustainability, and their assessment of the priority that homebuyers ascribe to sustainability [13]. Additionally, it may help to reveal how society understands and prioritizes sustainability in relation to housing, given that advertising is understood by some as a reflection of existing social and cultural norms and attitudes [18]. The housing sector has an important role to play in producing a more sustainable society with it, for instance, accounting for approximately 25% of the UK's total CO₂ emissions [19]. It is essential, therefore, that society takes seriously the impacts of housing and the measures needed to reduce those impacts [20].

Some building and dwelling-specific sustainability features, intended to reduce housing's more negative impacts, already appear to attract consumer interest, with various studies finding that pro-environmental features are related to higher property prices. Green buildings, for example, have been associated with price premiums [21]. As detailed by Zhang et al. [22], green buildings are defined in different ways by different national building standards, national green building councils, and national and international green building certification schemes, such as LEED (Leadership in Energy and Environmental Design), BREEAM (Building Research Establishment Assessment Method) [23], and SEED (Sustainability in Energy and Environmental Development) [24]. A green building is, though, usually understood as a building that has been designed to minimize its adverse effects on the environment and on resources while enhancing its positive effects [25] (p. 2234). Green building aspects [26], 'green' ratings, such as energy performance ratings [27–29], and green claims in property advertising [6], have also been linked to a price premium. Zhang et al. [30], for example, found that new residential units with the Chinese Green Building Evaluation Label (GBEL) attracted a price premium of 6.9% compared with their non-labelled counterparts. Mesthrige et al. [31] found that, on average, residential units with a Hong Kong Building Environmental Assessment Method (HK-BEAM) rating attracted a 5.3% to 6.7% price premium. Further, they observed significant price premium differences across the different ratings available for HK-BEAM certified buildings. Also in Hong Kong, Hui and Yu [32] (p. 10) found that homebuyers in the region's mass housing market were willing to pay larger premiums for properties in certified buildings than were buyers in the luxury housing market, except when the certification indicated a substantial and actual improvement in a building's environmental or energy performance. Focusing on energy efficiency, Fuerst et al. [27] found that dwellings with a top energy performance rating attracted a 12.8% price premium, while those with the poorest rating attracted a discount of –6.5%. Feige et al. [26] found that, in the absence of a green rating system, rental values were higher for properties that offered features associated with sustainability, especially

features associated with water efficiency. In a similar vein, various stated preference studies have found that individuals report a willingness to pay significant price premiums for homes with green features [25] (p. 2239), while a number of studies have found that people are willing to pay more to live in homes and areas that provide access to environmental amenities associated with environmental sustainability, such as better air quality [33], urban trees [34,35], and better water quality [36]. Turning to property advertising, Tateishi [6] found that greenfield housing developments with green advertising claims commanded a price premium. Responding to such preferences, and to evolving legislative and policy contexts, it is unsurprising that some developers in some territories, such as China [37], are increasingly incorporating green features into new residential schemes [22].

Against this background, the presence of sustainability messages in residential property advertising was explored as part of a larger study on the narratives and images used to sell city centre flats (see Section 1.2 below). The study's findings on the use of sustainability messages in property adverts form the focus of this article. Specifically, the article presents findings from an analysis of the textual and visual content of a purposive sample of 100 online adverts for city centre flats listed for sale in two English cities—Sheffield and Leeds—on a leading Multiple Listings Service between March and April 2022. Informed by the work of Kriese and Scholz [13], the analysis explored an advert's use of social, economic, and environmental sustainability messages. In presenting the findings of this analysis, the article aims to answer the research question, how is sustainability addressed in residential property advertising?

1.2. Researching Residential Property Advertising

The larger study, from which the findings presented in this article are abstracted, focused on the tactics used to sell city centre flats in what have appeared to be, in recent years, challenging market conditions. In the UK, the coronavirus pandemic generated a 'race for space' in housing markets [38], while a far-reaching building safety crisis, that initially affected residential towers [39], garnered significant attention in 2017. The building safety crisis, as commonly understood, concerns the range of fire safety and building defects that have been discovered at apartment buildings across the UK since 2017 when a fatal fire at a block of flats in London, linked to flammable cladding, prompted hundreds of building safety inspections [39]. The leaseholders in affected buildings have sometimes been left with large bills for repair work and mitigation measures [40] and homes that are difficult to sell or re-mortgage [39,41]. The UK's city centre apartment markets were impacted by the pandemic-induced race for space and the building safety crisis in ways not experienced by its suburban and rural housing markets [42]. We were keen to see how city centre properties were being marketed in these seemingly difficult times. Consequently, we analysed the textual and visual content of a purposive sample of online adverts for 100 city centre apartments, located in two English cities (Leeds and Sheffield), that were listed for sale on one of the UK's leading Multiple Listing Services in early 2022. The study was the first to consider the potential influence of the pandemic and the UK's building safety crisis on residential property advertising. It also constitutes one of only a handful of studies to consider the marketing of specific urban locations and properties [43] and to attend to the advertising of city centre flats [44,45]. Moreover, it adds to the small collection of studies that have examined the textual content of property adverts [46–48] and looked at the content of online adverts [47,49–53]. Section 2 outlines the methods employed within the study. The study's findings on the positioning of sustainability in residential property advertising are then presented and discussed, with the implications for future practice in the residential property industry considered.

2. Materials and Methods

We purposively sampled online sales adverts for 100 city centre apartments from a leading Multiple Listings Service (MLS) in the UK between March and April 2022. The adverts related to the 50 most recently listed flats in Leeds city centre, equating to 20% of all

flats listed for sale in central Leeds on the MLS at the time of the research, and the 50 most recently listed flats in Sheffield city centre, representing more than 30% of all flats listed for sale in central Sheffield on the MLS at the time of the research. The sample is described in the Section 3. Leeds and Sheffield city centres were defined according to the geographic boundaries employed by the MLS. Selecting the most recently listed properties meant that adverts from a similar point in time and, therefore, produced against similar national and local market conditions, were analysed. We did not select adverts on the basis of the sustainability rating, such as the energy performance rating, or the independently verified sustainability features, of the advertised property. The sampling strategy was driven by the concerns of the larger study from which the findings presented here are abstracted. Consequently, our findings provide insights into how residential property advertising in general employs sustainably messages, rather than how sustainability messages are used in advertisements for, say, zero-carbon homes. Similar to Aune [16], we focused on the long-form advert associated with a property. This provided plentiful textual and visual data for analysis, which facilitated rich insights into how real estate actors use this material to advertise properties.

Leeds is the third largest city in England, with a population of 812,000 people, while Sheffield, located approximately 46 km away, is the fourth largest city, with a population of approximately 556,500 people [54]. Both cities have established city centre housing markets which are dominated by the sale of flats. The average selling price for a flat in Sheffield city centre in the last year was £134,670 [55], while in Leeds, it was £173,480 [56]. There are multiple examples in each of purpose-built residential schemes, as well as residential projects created through change-of-use and redevelopment. The city centre housing markets in both Leeds and Sheffield have been affected by the building safety crisis and the pandemic. Selecting these cities allowed exploration and comparison of real estate advertising in two comparable markets with experience of these phenomena, which was a key requirement for the larger study. In both cities, property development is governed by national planning policy and national building regulations which provide guidance on, amongst other matters, sustainability. There are building regulations which outline, for instance, energy efficiency standards for new homes [57]. This national regulatory framework informs local spatial regulation. Both the national and local regulatory frameworks are frequently updated. Leeds and Sheffield city centres, therefore, contain residential schemes that were constructed under different sets of policies and regulations. Broadly speaking, in both cities, newer schemes will have been required to meet higher sustainability standards, but the national picture reveals that compliance with these standards is poor [58]. Properties listed for sale (or rent) in both cities have, since 2008, been legally required to have an Energy Performance Certificate (EPC) that details the overall energy efficiency of the property [57]. Under this scheme, which operates across England and Wales, properties are rated from A, indicating high levels of energy efficiency, to G, indicating poor energy efficiency. Property adverts need to clearly show the energy rating of a building, where this rating is available.

Similar to Collins and Kearns [18] (p. 2922), we constructed a database that captured detailed information about each property advert in our sample. For instance, a property's listing agent, price, location, and size (covering number of bedrooms, bathrooms, and floor space, where provided) was recorded. Characteristics highlighted in the opening sentences of a property description, and/or in an initial set of bullet points, were noted. Details of any images and virtual tours were logged. We analysed the database in several ways. Descriptive statistics were used to identify sample characteristics and explore relationships, such as between price and number of images included in an advert. Following past studies, such as those of Collins and Kearns [18] and Gillon and Gibbs [59], attention was focused, though, on producing a thematic interpretation of the visual and textual content of the adverts. Of most relevance to this article, and informed by Kriese and Scholz's [13] work, themes included environmental, social, and economic sustainability. The economic sustainability theme captured any visual and textual content that concerned the economic performance or value of a property. The environmental sustainability theme

captured any visual and textual content that concerned pro-environmental features, such as environmentally-friendly technology and materials, energy efficiency measures, and proximity to transport, services, and so forth. The social sustainability theme captured any visual and textual content about a property's potential suitability for different groups, as well as any that engaged with the needs of different groups or made explicit social or participatory commitments.

3. Results

Our sample included property adverts produced by 40 different real estate actors. The Sheffield sample included adverts from 23 actors and the Leeds sample adverts from 21. Most advertisers were estate agents offering residential sales and lettings services. These were a mix of local agents covering Leeds, Sheffield, or the wider region, agents with a national presence, and online estate agents. Additional advertisers included two online auctioneers, an international property consultancy, a developer, and five property investment agents. The latter promoted 'build-to-rent' schemes [60], including Purpose Built Student Accommodation, and/or buy-to-let properties. These investment agents were responsible for 20% of the adverts in our sample.

Across the entire sample, the average listed property price was £196,268 (SD = £127,280). In the Leeds sample, the average price was £247,516 (SD = £144,948), and in Sheffield it was £145,020 (SD = £78,344). Adverts for studio/one-bedroom flats were the most common, accounting for 48% of all adverts in the sample, followed by adverts for two-bedroom flats (40%) and three-bedroom flats (12%). This pattern was amplified in our Sheffield sample, where 60% of adverts were for studio/one-bedroom flats; however, it was not present in our Leeds sample. In the Leeds sample, the most common property was a two-bedroom flat (44% of adverts). These differences in sample characteristics may help to explain some of the variation in pricing observed between the two city samples.

The majority of adverts in our sample mentioned locational features and/or, less commonly, property and building features associated with sustainability. However, it was rare for these features to be discussed in explicit sustainability terms. Proximity to amenities and places of study and work was the most commonly cited sustainability feature, noted in over 60% of adverts. There was also frequent commentary on a property's proximity to public transport, noted in over 40% of adverts, with references to 'regular', 'great', or 'excellent' public transport links. Adverts highlighted the convenience and desirability of a central location rather than the contribution such a location can make to sustainability. Indeed, adverts highlighted a 'central location' as a flat's primary appeal. A variety of positive adjectives, usually several within a single advert, were used to generate excitement about a city centre location. A central location was 'superb', 'prime', 'exciting', 'perfect', 'convenient', 'enviable', and/or 'vibrant'. The emphasis on a property's central location, particularly the proximity to public transport, might have, at least in part, been related to the limited availability of private car parking at city centre residential schemes and the implications of this for personal mobility. Less than one-quarter of adverts in our sample noted the presence of private car parking. The adverts which did highlight this feature appeared less likely to mention public transport links, perhaps indicating that where private transport is accommodated through car-parking provision, real estate actors assume that occupiers will be less interested in public transport.

The emphasis on location found in the textual content of adverts was not replicated in the visual content which was often entirely concerned with the interior of a property. Some adverts included no external images of the building in which an apartment was located. Images of the view from an apartment were present in fewer than half of the adverts we studied, and images of the surrounding neighbourhood were rare. The lack of external images did not appear to be due to advertisers rationing visual material. Every advert in our sample included images, on average, 9.8 images (SD = 5.1) per advert. There appeared to be a slight association between property price and number of images, with lower-priced properties featuring, on average, fewer images. In addition to images, approximately

one-quarter of adverts in the sample featured virtual tours. Tours ranged from a simple compilation of photographs to sophisticated audio–visual productions involving filmed walk-throughs, music, narration, and/or on-screen text describing a property.

In the limited commentary that adverts provided on the sustainability features at or within a property or building, the most regularly cited item was electric heating. Electric heating can be a more sustainable form of heating when it is generated by renewable energy. Two adverts, both describing new-build properties at a scheme currently under construction in Leeds, noted that the development was ‘powered by 100% renewable energy from sources including wind, solar and hydro’. Environmental sustainability was the explicit orientating theme in this scheme’s advertising strategy. Only in one further case, in adverts for properties at a scheme currently under construction in Sheffield, did we find similarly explicit and prominent messages about sustainability. The messages at this scheme also focused on environmental sustainability. The same Leeds-based developer was responsible for both schemes. This developer claims that it was established with the ‘single purpose’ of accelerating ‘the transition to zero carbon cities’. Adverts for properties at its scheme in Sheffield highlighted various pro-environmental features, including triple-glazing and nearby amenities, ‘smart home technology’ that allows occupiers to ‘manage energy consumption 24/7’, and modern construction methods that produce a thermally efficient home. Properties at the scheme were identified as ‘low carbon’ and ‘sustainable’. Across the sample, a handful of other pro-environmental building features were occasionally mentioned, such as bike storage and double-glazing. Green space, communal gardens, and communal grounds, or views over these areas, were mentioned in several adverts. However, it was sometimes unclear whether these natural spaces were provided at a residential scheme or constituted public resources located close to a scheme. Comments such as ‘surrounded by green space’ and ‘looks out onto green space’ created this uncertainty. Typically, features were not presented as pro-environmental measures. In fact, features were usually mentioned without any commentary on the types of benefits they might provide.

Discursive accounts of some property and building features were found in some adverts. These accounts typically highlighted the originality and/or prestigious qualities of a feature, not its possible contribution to sustainability. Accounts sometimes invoked an aspirational lifestyle fantasy when describing a feature. Properties were identified as ‘high spec.’, ‘luxurious’, ‘stunning’, and ‘beautifully finished’. Adverts picked out high status, possibly unsustainable, fixtures and fittings, such as ‘rainfall showers’ and ‘Merbau (hardwood) flooring’. Modernity was important; properties were ‘truly unique and modern’ and offered a ‘modern layout’ and/or ‘modern appliances’. Adverts highlighted points of originality, such as ‘larger than average’ rooms, and/or they described features in ways that suggested originality, a feature was ‘unique’ or ‘unrivalled’. A number of adverts channeled the lifestyle fantasy of the home as a relaxing refuge from the city. Properties were a ‘retreat from the concrete jungle’, where individuals could relax ‘over a cocktail or three’. Only at the two new-build schemes, where environmental sustainability was emphasised in marketing materials, did there appear to be efforts to invoke a lifestyle fantasy centered on sustainability. Here, items such as ‘lush green spaces’, ‘intimate, car-free streets’, and the opportunity to ‘lower your carbon footprint’ were highlighted. However, even in these adverts, there was an emphasis on ‘high spec’ and high-status features: ‘dual aspect duplex’, ‘open plan’, ‘contemporary high spec kitchen’, and ‘concrete floors’ were, for example, cited. Properties did not offer just a sustainable lifestyle, they offered a sustainable and aspirational lifestyle. Implicit in the messaging seemed to be an assumption that sustainability alone is not enough to entice prospective buyers. Alluding to this, at the scheme in Sheffield, it was noted that homes provided ‘sustainability without the compromise’.

According with the legal requirement for property adverts to clearly show the energy rating of a building, where the rating is available, adverts in our sample often included details of a property’s energy performance. This information could be captured in a

graphic; however, a number of adverts highlighted the rating in the property description. Surprisingly, two adverts highlighted a property's comparatively poor rating, demonstrated in ratings of D and E. This might have been because since April 2020 landlords in England have been unable to let properties with an EPC rating below E [61]. Highlighting an E rating or above, therefore, quickly communicates to investors a property's suitability for renting.

Matters pertinent to social sustainability were addressed in adverts less frequently than were those related to environmental sustainability. Adverts targeted properties at a relatively narrow demographic, appearing to share in the assumption that childless working age adults are the only possible occupants of city centre properties. Proximity to amenities that might appeal to this social group were highlighted, while those which might be of interest to other groups, such as families with children or older adults, were not discussed. The local availability of schools, playgrounds and health centres was not, for instance, considered. The potential for a property or neighbourhood to accommodate changing life stages, such as later life, was not mentioned. There was no commentary on layout flexibility, other than references to properties being 'open plan'. There was no discussion of the social dynamics of an area, such as its diversity, culture, and social infrastructure, which might be of more concern to groups like families who may be more interested in putting down roots and integrating into a community. There were no explicit social or participatory commitments, such as commitments to affordable housing.

Adverts targeted at investors emphasised the economic performance of a property. Positive phrases and adjectives were used to generate excitement about the investment potential of properties: 'excellent buy-to-let opportunity', 'perfect for investors', and 'would make a great investment'. Numerical information was provided to highlight and quantify potential returns on investment: 'previously let at £585 per month', 'currently achieving £6300pa', 'NET yield 5%', and '£37,125 guaranteed returns'. Features that enable a buyer to quickly realise a return on an investment were emphasised: 'tenanted investment', 'fully managed', 'sold furnished', and 'no upward chain'. Perhaps to allay the concerns of novice investors unfamiliar with the work of a landlord, adverts championed the ease and convenience of property investment: 'grab yourself a great ready-made investment', 'tenanted and bringing in income', 'hassle free', and 'instantly earning'. Finally, adverts emphasised the scale of rental demand and presented nearby sources of possible demand, such as places of work and study: 'great track record of letting', 'always lets well', and 'close to the universities'.

4. Discussion and Conclusions

Findings from the first study to provide a systematic analysis of the positioning of environmental, social, and economic sustainability messages in residential property advertising indicate that sustainability is not a prominent issue. Similar to Kriese and Scholz [13], we found that it was rare for adverts to explicitly mention sustainability. Items associated with environmental sustainability were mentioned more frequently than those associated with economic or social sustainability, reflecting patterns identified across advertising [2,12]. The limited explicit discussion of sustainability in adverts might imply there is little general interest in this issue, either amongst those selling property (agents, investors, and developers) and/or amongst those buying property. This might suggest that pro-sustainability measures targeted at the housing sector, such as the pro-environmental measures that researchers and policymakers argue are essential for addressing the climate crisis [20], may encounter a potentially muted response from actors within the sector. Such a response could frustrate the implementation of those measures. For homebuyers who are interested in a property's sustainability, the findings suggest that they are poorly served by current practices in property advertising. Estate agents and developers wishing to appeal to these sustainability-minded buyers might do well to incorporate greater commentary on a property's sustainability features in advertising materials.

Rather than a lack of interest, the limited explicit discussion of sustainability that we observed in property adverts might in fact be due to a delay in advertising reflecting social

and cultural change [13] and evolving public attitudes towards sustainability. It might also be a function of actors choosing not to disclose a property's sustainability features. A small number of studies have considered the factors associated with the disclosure of sustainability information in property adverts. Lee and Wang [62] found that non-disclosure of a property's energy performance rating was more likely when properties achieved lower ratings. Fuerst and Warren-Myers [63] found that the presence of sustainability features, such as energy-efficient heating systems, made disclosure of an energy performance rating more likely. Hyland et al. [29] found that property size and location were related to the decision to advertise an energy performance rating. Adverts for larger homes and for homes in urban locations were more likely to disclose the property's energy rating. Alternatively, the limited discussion of sustainability might simply be a function of the characteristics of the inventory on the market in the cities we studied. Properties may just have had few sustainability features to report. Evidence suggests that much of the UK's housing stock may indeed lack sustainability features, with a majority of homes performing relatively poorly on various sustainability measures [20]. For example, based on an analysis of EPC data for the period to March 2021, the median energy efficiency score for dwellings in England and Wales was equivalent to band D, where band A indicates high levels of energy efficiency and band G low levels [64]. New properties perform better on certain sustainability measures. New dwellings are, for instance, generally more energy efficient than existing dwellings due to factors such as modern construction methods and materials [64]. Consequently, there may be more sustainability features to highlight in adverts for newer properties. We found that adverts for the newest properties in our sample, those under construction, were indeed more likely to emphasise sustainability features, although only pro-environmental features. At the two developments, both under construction, where we found the most explicit and prominent pro-environmental claims, environmental sustainability was positioned as a scheme's unique selling point. The fact that sustainability can, however, be presented as a distinguishing characteristic—as a USP—might suggest that the developers of new schemes are not delivering sustainability as standard in all cases. Indeed, the data show that approximately 12% of homes built in 2018 in England and Wales achieved an EPC rating of C, 7% achieved a rating of D or below, and just 1% achieved the top A rating [20].

The limited explicit commentary on sustainability observed within this study means that we did not uncover evidence of the widespread greenwashing that some, such as Tateishi [6] and Zheng et al. [21], have identified and criticized in residential property advertising. Tateishi [6] (p. 371), for example, argues that misleading green claims in residential property advertising may 'hinder the formation of sound and effective green housing markets' and undermine the development of genuinely sustainable housing. Claims about energy performance were perhaps the most common type of explicit sustainability claim identified in property adverts. The legal requirement to provide energy efficiency information when a property is sold no doubt explains the frequency of these claims. Although included in adverts, energy performance information was not usually emphasised in the property description, similar to past findings on the positioning of energy issues in property advertising [16,17]. This might be a missed opportunity for more energy efficient homes. Studies generally point to a positive relationship between transaction price and energy performance rating [27–29].

Similar to Kriese and Scholz [13], messages about a property's proximity to services, transport, and places of work and study were by far the most common sustainability messages included in adverts. Also matching their findings, adverts were found to discuss this issue of proximity in terms of convenience rather than sustainability. A convenient city centre location, giving immediate access to amenities, work, and a vibrant, mixed-use environment was, reflecting past findings on the marketing of city centre flats [44,45,65], emphasised as a property's primary appeal. Language designed to generate excitement about a city centre location was evident, as was language designed to indicate originality, to suggest prestige, and to tap into certain lifestyle fantasies. Consequently, adverts

demonstrated the linguistic traits commonly identified in property adverts [45,46,48]. The attention paid to an apartment's city centre location meant that place emerged as a prominent item in an advert's property description, confirming past findings on the positioning of place and location in real estate advertising [18,43,66]. Whether city centres readily provide the vibrant, mixed-use location that adverts claimed may, however, be increasingly questioned. Factors such as the 2008 financial crisis [67], the growth in online shopping, the pandemic [68], and decades of gentrification [65,69] and urban restructuring [70] have altered the physical, social and economic landscapes of many of the UK's town and city centres. The image of a thriving 24-hour environment, that pervades adverts for city centre flats, seems in some respects, and in some city and town centres, an increasingly tenuous blend of the authentic and the inauthentic [18,43]. The emphasis on location observed in adverts was largely confined to the written property description. An advert's visual content was overwhelming focused on the interior of a property. The absence of exterior images did not seem to be a consequence of advertisers rationing their use of imagery. Adverts featured, on average, 9.6 images. This is a more extensive use of imagery than previous studies have found. For example, Benefield et al. [51] found that adverts on Multiple Listing Services featured, on average, 6.8 images.

Factors related to economic sustainability were discussed in adverts targeted at landlords and private investors. Adverts emphasised potential rental incomes, returns, and yields. When a property is bought as an investment to rent out, rather than as a home to occupy, the economic dimension of sustainability arguably assumes a heightened importance as buyers are principally (even entirely) motivated by financial concerns. Including messages about the economic sustainability of a property that is framed as an investment and is targeted at investors allows real estate actors to tap into the core motivations of these buyers. In contrast to our study, Kriese and Scholz [13], while not expressly looking for messages about economic value and performance, did not find any economic messages in the advertising materials they studied. This is most likely because of differences in supply and demand dynamics within the particular housing markets that we and they considered.

Factors related to social sustainability were not discussed to any degree in the analysed adverts. Whereas Kriese and Scholz [13] found that marketing materials included relatively regular mention of provision for children's needs, this study observed an exclusive focus on the assumed needs and preferences of childless working age adults, who were viewed as seemingly the only liable occupiers of city centre flats. Kriese and Scholz [13] examined the marketing materials for properties across an entire city, including adverts for suburban housing. As families have traditionally been a strong market for suburban houses [71], real estate actors might have expected strong interest from prospective occupiers in the child-friendly qualities of a suburban home. Therefore, they sought to address these interests in their advertising materials.

Advertising city centre flats to a wider variety of buyers than simply childless working age adults, and considering the needs of diverse buyers in marketing messages, could strengthen the resilience of city centre markets, which have seemed particularly vulnerable to external shocks [72]. A more inclusive approach in property advertising could also produce more socially sustainable residential developments and connect to evolving demographic trends. By 2028, more than 20% of England's population will be aged 65 and over [73]. City centre flats providing modern, open plan, single-level accommodation and situated close to public transport and amenities would seem to provide qualities that may appeal to an older age group. However, the adverts considered in this study did not address this demographic. Our understandings of place, such as our understanding of city centres and for whom they are suitable, are stabilised and incrementally altered by property advertising [43,74]. Actively marketing city centres as appealing residential environments for older adults could help to challenge and modify perceptions, common in the UK, that city centres are primarily for younger residents. A new set of messages that emphasise qualities that are of concern to older adults might be needed. For example, there could be more commentary on items such as lift and step-free access within a building. The mes-

sages employed should, of course, be accurate. Misleading advertising erodes consumer confidence and creates confusion and skepticism [4]. In the context of property markets, misleading advertising may also negatively affect prices [21] and hamper the production of ‘better’ housing, such as more sustainable housing [6]. In the longer term, developers, designers, and real estate agents may need to demonstrate greater innovation in the design and advertising of city centre flats in order to take account of evolving demographic trends and society’s changing preferences, needs, and interests.

Limitations

This study considered the positioning of sustainability in adverts for city centre apartments in two English cities. The findings might not apply to other housing markets in other locations. Accurate, independent information about all sustainability features at the properties considered within the study was not readily available. Properties often had an EPC which could be examined, but these could be quite dated - an EPC is valid for 10 years in England [57]. Further, EPCs focus on energy efficiency not on the wide range of sustainability features considered within this study, and the reliability of EPCs has been questioned [75]. Consequently, we do not know whether adverts under- or over-reported the presence of sustainability features at a property. The under-reporting of features would indicate that sustainability is an even lower-order issue in property advertising than the study concluded. Conversely, over-reporting would imply that value is ascribed to sustainability, perhaps more value than this study concluded.

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