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Article

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The Concept of Subjective Well-being in Housing Research

Abstract

The aim of this article is to review the ways in which subjective well-being has been conceptualized within housing research, with a view to evaluating the use of the concept, the insights it has generated, the problems that have been experienced, and the possible range of lessons that might be taken forward. The article begins with an analysis of the reasons why subjective well-being has become popular as a conceptual tool in many fields. The article continues with a discussion of the range of definitions that appear in the literature which leads into discussions of the research techniques and methodologies that have been used in empirical research. Empirical studies which focussed on the impact of physical housing conditions and tenure on subjective well-being are reviewed in order to evaluate what is known about the impact of housing on both personal and collective subjective well-being. This review highlights issues of status, reference groups and adaptation that are important insights from the subjective well-being approach that should set the agenda for further research in this area. The conclusion is that the relationship between housing and subjective well-being is a complex one that repays further study in order to understand the rich texture of the role of housing in people's lives. The article concludes with suggestions for both conceptual and methodological approaches and the focus of future research.

Introduction

The aim of this article is to review the use of the concept of subjective well-being in housing research, with a view to evaluating the use of the concept, the insights it has generated and the problems that have been experienced. There have been previous reviews of the link between housing and mental health (Clark et al., 2006; Thomson et al., 2001; Gibson et al., 2011), but the concept of subjective well-being is relatively new in housing research. This paper examines the roots of the term in different disciplines such as economics, epidemiology, psychology and public policy studies, and charts its progress into housing studies. Its many roots show that the concept is inherently interdisciplinary and this is one of its strengths, although it is also a weakness as it has resulted in many different definitions and approaches to its operationalization as a concept to guide empirical research.

The second section reviews some of the differences in definition and measurement that have become apparent in its use. For example, some studies rely on simple definitions and measures that are focused around questions of life satisfaction. Others examine the psychological factors that are said to underpin subjective well-being such as self-efficacy, self-esteem, social identity, and social embeddedness, and use them to monitor the outcomes of changes in housing. Studies that have operationalized subjective well-being as 'life satisfaction' tend to be based on large-scale surveys such as the British Household Panel Survey (BHPS), whereas the more psychologically orientated studies have tended to use established measurement tools based on self-report in small scale surveys. The section reviews these studies in general, and specifically those focused on housing, and discusses the justifications put forward for the different approaches and their strengths and weaknesses.

The article then focuses on the results of some studies of subjective well-being in housing to ascertain what they have contributed to knowledge. This section is not intended to be an exhaustive review of the empirical literature on housing and subjective well-being, rather, the focus is on two aspects of housing which are commonly examined in the subjective well-being literature – physical conditions and housing tenure- both of which raise important issues surrounding social status and adaptation, that should inform future research in the area.

The final section reflects on the conceptualization, measurement, pattern of findings, and lessons that we might draw for housing research. It draws conclusions on definitions and approaches that have been most illuminating so far and the aspects of housing that seem to offer the most scope for an analysis based on the concept of subjective well-being.

Before we start, it is worth being clear about the terminology we use. As Angner (2005) notes, researchers often use terms like ‘well-being’, ‘subjective well-being’, ‘welfare’, ‘happiness’, or ‘utility’ without specifying what they mean by these terms. This can lead to confusion as different people (and different academic disciplines) interpret these terms in different ways. The term ‘well-being’ (or ‘wellbeing’) for example, has been used variously to refer to preference fulfilment, opulence and free-choice (see Gasper 2007 for discussion of the various conceptualisations of ‘well-being’). In this paper, we rely on two terms; ‘well-being’ and ‘subjective well-being’. We elaborate on these terms throughout the paper, but for now it should suffice to define ‘well-being’ as the underlying, intrinsically good, psychological and emotional state which utilitarianism equates to justice (others refer to this as ‘utility’ or ‘happiness’); and ‘subjective well-being’ as an individual’s attempt to estimate their own ‘well-being’.

Furthermore, before charting the growth of subjective well-being as a proxy for well-being, it is also worth outlining first why well-being is important and second, why it is only one among other goods associated with progress. The first task is easier. Everyone (with the possible exception of some fundamentalist egalitarians or libertarians) would agree that well-being, as we have defined it, is a self-evident good. The second task is more difficult. For a utilitarian, the morality of an act should be judged purely in terms of its effect on well-being. However, adopting a utilitarian philosophy – as many researchers (implicitly) do – leads to some unpalatable moral judgements (as detailed by Sen, 1979, 2011). If the morality of an act is defined purely in terms of its effect on well-being, no act is intrinsically right or wrong. If Roman spectators derived enough well-being from seeing Christians thrown to the lions in the Coliseum, then this violent practice would be morally justified. In a similar vein, making moral judgements purely on the basis of well-being can be deeply unfair to those who are persistently deprived as people adapt to changes in life circumstances. If deprived people such as oppressed minorities, women in sexist cultures, or exploited child labourers ‘come to terms’ with their deprivation as a way of coping, then is such a state of affairs *just*? Amartya Sen has been one of the most effective (and thoughtful) critics of utilitarianism, arguing that if these ‘deprived groups’ accept their position, then they are participating in their own marginalization. Like other value-pluralist thinkers (e.g. Isaiah Berlin and John Gray) he argues that well-being is an important but partial reflection of human functioning (e.g. Sen, 2011). Liberty, equality, and fraternity could all be considered important in their own right, and therefore need to be included in any idea, or metric, of justice. As the philosopher Bernard Williams (1990)

has noted, 'No apparent morality could easily accept some of the apparent consequences of utilitarianism. And yet no attractive morality could avoid giving happiness and misery a central place.' Thus, the first limitation of this paper is that we only look at housing in terms of well-being (through subjective well-being indicators). In doing so, we overlook other components of justice or progress. In the concluding paragraphs of this paper, we briefly address this limitation, but until then, our focus is on the relationship between housing and well-being, as proxied for using subjective well-being.

The roots of subjective well-being

In this paper, we demonstrate that the concept of subjective well-being has its roots in a number of disciplines and four, economics, social epidemiology, psychology, and public policy will be considered here, because they are the disciplines that have dominated the focus of the research represented within the housing studies literature. Each also has important implications for how we might measure well-being in the future.

Economics

The roots of subjective well-being in economics can be traced back to the utilitarianism of Jeremy Bentham, who argued that it would eventually be possible to measure well-being directly; a view shared by other influential economists of the late 19th and early 20th century (Read, 2007). However, with the 'marginalist revolution' of the 1870's, there emerged severe doubts over the measurability of well-being. As Jevons, one of the leaders of the marginalist revolution argued, 'Every mind is inscrutable to every other mind and no common denominator of feeling is possible' (Jevons 1871). Economists therefore became increasingly reliant on choice behaviour as a proxy for well-being. They recognised that this was not ideal as people's choices did not always maximise their well-being. Francis Edgeworth, for instance, felt that 'the concrete nineteenth century man is for the most part an impure egoist, a mixed utilitarian' (1881, p.104). But it would have to do.

From the 1930s onwards though, economists increasingly subscribed to the assumption that individuals are rational maximisers of their own well-being. This shift (the 'ordinal revolution') was initiated by Pareto who showed that, under the assumption that individuals can rank combinations of goods, happiness can be expressed by indices that represent the preference ranking of the individual (Read, 2007). Adopting this assumption dissolved any need to measure well-being directly, as choice behaviour could be directly equated to well-being.

In recent years, economists have started to move back to Bentham's position, and have sought to measure well-being directly, through subjective well-being indicators. This reversal can be attributed to at least three factors. First, the assumption that individuals are rational at maximising their well-being has been progressively undermined. Phenomena such as the paradox of voting (or 'Downs paradox', 1957) and other instances where individuals act in the name of fairness (see Rabin, 1993) clearly indicate that individuals are not always motivated to maximise their own well-being. Furthermore, various studies from behavioural economics indicate that individuals are not capable of maximising their well-being, because of the structure of decision-making situations (see Marsh and Gibb, 2011, for a review in relation to housing). The second factor is the growing acceptance among economists that subjective well-being indicators are a valid and reliable proxy for well-being, an issue which will be discussed later in the paper. The

third factor is the development of national panel datasets which has allowed researchers to look at how changes in an individual's life from one year to the next relate to changes in their subjective well-being, thus making it easier (through fixed-effect regressions, for example) to robustly examine the determinants of subjective well-being. Together, these factors have caused a surge of interest in 'happiness economics' (MacKerron, 2012).

Social Epidemiology

Within social epidemiology, there has been a focus on the factors that influence poor physical and mental health. Much of this work has mirrored the Easterlin paradox (that increases in income and wealth above a certain level do not seem to add to the subjective well-being of societies) and has also pointed to income and wealth inequalities as major factors in the incidence of poor health between countries. Wilkinson and Pickett (2009) analyse the elements of poor health and social problems that have an income gradient within countries (i.e. are more prevalent amongst low income people) such as life expectancy, drug use, physical and mental health, obesity, educational performance, teenage births and violence. They show that the overall incidence of these factors is greater in countries with greater inequality. They attribute this relationship, in part, to the anxiety and stress caused by being *relatively* poor, which resonates with the work of Marmot (2004) who similarly found a negative relationship between social status, and health and longevity. As well as highlighting the importance of *relative* income and social status – a point we will pick up on later – this work has reinforced the economic analysis of well-being by mirroring its focus on different measures of the success of a country rather than focusing on single measures of GDP (Gross Domestic Product).

The increasing focus in social epidemiology has been on developing causal explanations of subjective well-being and this has guided the types of questions asked, the data sets used (usually longitudinal), the outcomes generated (measurable in secondary data), and the statements that are able to be made about the role of housing in subjective well-being. The focus on subjective well-being has involved analysis at the individual level that is in contrast to the previous dominant concern with overall populations. As we shall see this approach has also been the dominant one in studies of subjective well-being and housing.

Psychology

A third disciplinary approach used has been that of personality and social psychology. Psychology has long been concerned with individual's perceptions, motives, and behaviours as influences of well-being (for reviews see; Diener et al., 1999; Haslam et al., 2009). In spite of the fact that subjective measures of well-being are often described as a recent phenomenon, as Angner (2005) has discussed, their history can be traced back to the 1920s and 1930s, when they were used in both theoretical and applied work in the domains of marital success and educational psychology. However, after a half a century of scientific inquiry, and while there is still interest in understanding the traits and facilitators of personal subjective well-being, emphasis focuses more squarely now on exploring the underlying mechanisms motivating people's subjective perceptions. Diener et al. (1999), in their review, aptly identified four avenues for future development, two of which are of greatest importance to this paper. These are first, understanding the relationship between inter-personal factors and the settings in which people find themselves (also see Luke, 2005), and second, understanding ways in which individuals apply problem solving strategies and adapt over time to pursue their subjective well-

being. These two dimensions cover person-centred factors (such as personal dispositions and motives) and situation-centred factors (such as demographics, prior experiences, and other factors), as well as other factors likely to mediate the impact of stress or circumstance on an individual's response and perceptions over time such as personal resources.

This ties to another important point, which has to do with the more global focus on the elements that create 'unhappiness', and how these might be assessed. Contemporary work, Wilkinson and Pickett (2009) follows Elstad (1998) in focusing on the emotive aspects of the measures, suggesting that an essential quality of subjective well-being is the importance of avoiding shame (Lundberg et al., 2009), which has a strong link to mental ill-health and depression. However, this is conceived of in conjunction with the views of others within a social context. This second aspect of the dimension, views of others, forms the evaluative framework by which we view ourselves and feel either pride or shame and are related to our social status as we are either able to draw a sense of esteem and value from them, or conversely may see them as toxic and resulting in lowering our value and self-esteem (Kamau et al. 2013). This focus on shame mirrors that of those more heterodox economic thinkers (such as Adam Smith and Amartya Sen, in *The Wealth of Nations* and *Development of Freedom*, respectively) who consider the avoidance of shame to be a key driver of human behaviour (and consumption).

The introduction of subjective well-being and its rise to prominence in the psychological literature has signalled a change in emphasis in the discipline away from a focus on negative emotions and ill health, towards measuring positive emotions (Ryan and Deci, 2001). In part, as Seligman and Csikszentmihaly (2000) argue, this change can be traced to the Easterlin paradox considered above. Paralleling this development has been that of enhanced research interest in understanding the role of individual agency in determining motives and behavioural outcomes (e.g., Bandura, 1991). However, by the same token, there have also been a number of developments within the group processes literature, bringing our attention back to the central role of context in individual attitudes and behaviour. Well-being could be derived from an individual's decisions, as commonly assumed in the economics literature, but equally it could be achieved through membership of a collective (Crocker and Major, 1989; Luhtanen and Crocker, 1992).

In searching for indicators of personal and collective subjective well-being, economists and epidemiologists have often borrowed concepts from psychology in attempts to move beyond formulations of 'economic man' to more complex decision making. Within psychology, Ryff and Keys (1995) have argued that there are six factors that lead to well-being. These are autonomy, personal growth, self-acceptance, life purpose, mastery, and positive relatedness. There are other measures that have been used, but the important point here is not that this is an exhaustive list, but that within this discipline the emphasis has been on the development of multi-dimensional subjective well-being indices, which are considered to lead to an ability to gauge an individual's well-being, rather than that of a single indicator such as those which dominate the economics literature.

Public Policy Evaluation

A fourth important factor in the growth of interest in subjective well-being has been the focus on the measurement of the impact of public policies (Davies et al., 2000). The emergence of subjective well-being as a large-scale measure of social progress can be

traced back to the social indicator movement of the 1960s, which sought to find a broader and more sensitive set of measures in order to provide a fuller description of people's lives, a vision which later materialised in the Human Development Index (Anger, 2005). Bache and Reardon (2017) have categorised these developments as a first wave of interest in subjective well-being as an objective of public policy and as a means of measuring its impact. However, this wave ebbed in the 1980s under the pressure of lack of interest from neo-liberal governments and its own lack of a common conceptual framework and clear rationale and conceptual justification (Bache and Reardon, 2017).

A second wave of political interest in subjective well-being started in the 1990s with a focus on use of the concept both as an indicator of the 'health' of the society as a whole, but also as a measure of the outcome of particular policies. In Britain, this focus was adopted by the Blair governments, who highlighted the importance of doing 'what works', and placed renewed emphasis on attempting to define and measure the impact of public policies in a way that moved beyond traditional cost-benefit analysis and used a wide variety of impact measures. Although much of the work did not use the term subjective well-being, or use measures of psychological functioning or life satisfaction, it reinforced a focus on the search for a broader set of factors that would improve society – not just economic growth- and the concepts and measures such as subjective well-being that would be indicators of this. Also, authors such as Judt (2010) have drawn attention to a growing disillusionment with public services among the electorate and have linked this to the growing conditionality in services and a lack of focus on ensuring that the outcomes improve the well-being of those that receive them. Clapham (2010) has argued that the improvement of well-being is an appropriate objective by which to judge the success of housing policy. It can be argued that a focus on well-being is a pre-condition of the survival and popularity of public services, because it can reinforce a focus on the subjective situation of the individual receiving services that is likely to increase their valuation of the service provided.

In summary, the use of the concept of subjective well-being as a way of judging the success of societies and public policies has come from a number of directions with different emphases and foci. This is at the same time a strength, as it enables the use of different concepts and measures from different traditions, and a weakness, as we shall see in the following sections that emphasise the often conflicting and confusing differences in definition and measurement of the concept.

Defining and measuring well-being

Much of the difficulty in measuring well-being stems from the disagreements over definitions. Until this point, we have defined 'well-being' very broadly as a psychological and emotional state which has intrinsic value. There are, however, a wide range of psychological and emotional states which, it could be argued, are to be valued in themselves, and that should therefore be incorporated in any definition of well-being, and any measurement of subjective well-being: high spirits, exuberance, joy, elation, contentment, ease, confidence, "in the zone", purpose, satisfaction with one's life....the list could go on, and these are only the positive emotional/psychological states, and ignore those negative emotional/ psychological states such as pain or listlessness.

Despite, or perhaps because of, the complex and variegated nature of well-being, much of the empirical literature, particularly in economics, has adopted life satisfaction as a single metric of subjective well-being. Life satisfaction is typically approximated by asking an individual how satisfied they are with their life on a numerical scale. The justification for the focus on life satisfaction measures is that they offer a cost-effective means of capturing a meaningful portion of subjective well-being. In addition, they are both *valid* and *reliable*. As Diener et al (2013) note, they are *reliable* in that they yield similar scores when administered in the same condition and are quite stable over time particularly in the case of multi-item scales. They are also *valid* in that they reflect thoughtful and reasonable evaluations people make of their lives. When reports on the estimated life satisfaction of target participants are collected from family and friends, they show moderate correlations with the targets' self-reports (see Diener et al., 2013). Furthermore, the U-shaped pattern of life satisfaction across the adult lifespan that is found in many highly-industrialized nations is mirrored by the use of antidepressant medications, which peaks in the late 40s (Blanchflower and Oswald 2012).

According to the model of Van Praag et al. (2003), life satisfaction judgements are a function of different domain satisfaction judgements, including housing satisfaction. Therefore, while housing satisfaction is not a component of well-being itself (it is difficult to argue that being satisfied with one's house is a self-evident good) a substantial proportion of the effect of housing on well-being is likely to operate *through* (i.e. mediated by) housing satisfaction. This is the implicit logic behind the many papers which look at the determinants of housing satisfaction.

The main weakness of life satisfaction indicators is that they only capture a part of well-being. Someone can be satisfied with their life but still be reasonably judged to have low well-being. A husband who cares for his terminally ill wife may be thoroughly depressed and bored, and at the same time feel a sense of meaning and fulfilment, and may therefore be satisfied with his life, but are we really to consider him to have high well-being? While life satisfaction, it could be reasonably argued, is a component of well-being in its own right, few would argue that it can be directly equated to well-being.

The 'theory of subjective well-being' (as opposed 'subjective well-being' more generally, which we define simply as an individual's perception of their own well-being) addresses this weakness by supplementing life satisfaction with two other components of well-being; high frequencies of positive affect (joy, elation, contentment, pride, affection, ecstasy), and low frequencies of negative affect (guilt, shame, anxiety, stress, sadness, depression) (e.g. Pavot and Diener, 2008). Note that some definitions omit negative affect (e.g. Della Fave et al., 2011). This approach has been notably adopted by the OECD (Guidelines on Measuring Subjective Well-being, 2013) and The World Happiness Report 2015 (Helliwell, Layard and Sachs, 2015). While these three components are correlated, they are also distinct (e.g. Zou, Schimmack, and Gere, 2013). Thus, according to the 'theory of subjective well-being', well-being is not one continuum but three and by only looking at one component, we only gain a partial understanding of well-being.

A distinction is often made between hedonic and eudaimonic theories of well-being. Whereas the former focus on outcomes (as in the 3-fold approach outlined above) the eudaimonic approach focuses more on the factors that are said to underlay life-satisfaction such as meaning, purpose, autonomy, self-acceptance, being curious, vitality,

and taking part in activities that make one feel alive (Kashdan et al., 2008) This dichotomy, however, can be criticised on several grounds (see Kashdan et al., 2008). Most notably, the empirical evidence generally suggests that hedonic and eudaimonic well-being are not distinct psychological concepts (see Kashdan et al., 2008 for review). For example, the correlations between the eudaimonic factors and well-being are often larger than correlations among the components of the three-fold approach outlined above. (Watson, 2000; Lucas et al 1996). Kashdan et al., (2008) thus conclude that the hedonic versus eudaimonic distinction does more to confuse than clarify our understanding of well-being. Nevertheless, there is clear merit in many so called eudaimonic theories of well-being, and the idea that well-being involves more than three dimensions is a useful one. There is, for instance, good reason to believe that autonomy, environmental mastery and purpose and other emotional states are themselves constituents of well-being. On this basis, the use of more wide-ranging measurements of well-being, such as the General Health Questionnaire (GHQ)¹, is to be welcomed.

Ultimately though, there are always going to be differences in how people define well-being and it seems unlikely there will ever be one theory which reconciles these differences. The price we pay for accepting that well-being is an inherently ambiguous concept, is that every individual cannot be precisely ranked in terms of their subjective well-being. Nor can it consistently be said whether an individual has higher subjective well-being in one state than another. This ambiguity should not, however, impede an examination of the determinants of subjective well-being. Indeed, the empirical evidence suggests that different measures of subjective well-being are either moderately or strongly correlated, so an individual who has high well-being according to one definition is also likely to be high according to another definition (Kashdan et al. 2008). Because the different hypothesised components of well-being are closely related, it is not necessary to decide on one theory or measurement to estimate the determinants of well-being. Instead, the adoption of as wide-ranging a measurement as possible to account for the multi-dimensional nature of well-being would seem to be the most useful approach.

The studies of subjective well-being reviewed below usually use Likert scaling (Likert, 1932) that employs an ordinal scale to assess the underlying continuous variable. Likert assumes that response labels on scales reflect the variable adequately and that the intervals are of equal distance. Thurstone (1934), argues that the distance between 1 and 2 might not be the same as that between 4 and 5 on such scales. However, in subsequent work, Likert demonstrated that there was higher reliability associated with his technique of scaling, but that the overall process does assume that attitudes are fairly static and not as dynamic as thought by Thurstone. This concern is inherent in the process of the measure construction however. An additional concern, of course, as highlighted by Lord (1946), is whether one can apply statistics to interval or ratio data, which ask people to make evaluations of their interpersonal processes, with any success. But as Lord and countless others have argued since, the application of statistics does provide us with meaningful understandings if we also observe the limitations of the data. In terms of life satisfaction, the issue of whether we can assume equal distance between intervals (i.e. assume cardinality) has been largely allayed by Ferrer-i-Carbonell and Frijters (2004),

¹ Originally developed as a first-stage screening tool to identify those in need of psychiatric care, but since adopted as a measure of subjective well-being, the GHQ is constructed from the responses to twelve questions (6 positive and 6 negative worded items) where individuals are asked how often they are experiencing certain feelings (e.g. depression, strain, happiness) compared to their 'usual' state.

who have shown that ordinal and cardinal approaches usually lead to qualitatively very similar results. Nevertheless, it is a concern that some of the studies of subjective well-being reviewed in the next section have unquestioningly used the Likert scales and have not considered the underlying rationale for this or the constraints that it places on interpretation of the data. The multi-dimensional nature of well-being is best served by greater use of multi-dimensional scaling to reflect the intricacies inherent in the concept.

The different approaches to definition and measurement highlighted in this section make it difficult to compare the outcomes of the different studies that have been undertaken of the relationship between housing and well-being. Nevertheless, it is to this that we now turn.

Research Exploring Housing and Well-being

In the first section of this paper, we reviewed conceptual and measurement issues associated with exploring subjective well-being within housing research. The aim of this section is to examine the evidence by exploring what is known from existing subjective well-being research as it relates to housing. We realize that this overlaps in part with work on health and housing, but equally much of the health literature make only inferential reference to housing. We therefore highlight studies in which housing is a main focus and not a peripheral finding.

Our review focusses on two aspects of housing in particular; the physical condition or quality of the house, and the tenure, and seeks to compare the effect magnitudes of these variables with other life events. These two aspects are chosen partly because they have been the emphasis of a substantial amount of scientific investigation, and also because of their perceived importance to determining subjective well-being, and the interesting issues that they raise. Two of these issues, namely adaptation and status effects are then discussed, as they are important for future research priorities and to uncovering the causal factors through which housing influences subjective well-being.

While we try and reference all those studies which meet the above criteria, we devote most attention to those studies which come closest to establishing a causal relationship between housing conditions/tenure on subjective well-being, through addressing the various biases which can confound this relationship (hence the focus on large scale national panel datasets which allow the researcher to control for 'time-invariant unobservables').

A consequence of limiting the scope of our literature review to tenure and physical housing conditions is that we exclude a number of studies, - such as Reeves et al. (2016) who rigorously demonstrate the negative effect of housing benefit cuts in the UK on mental health, and Tomaszewski and Perales (2014) who show that people's housing expectations depend on their gender, age and ethnicity - because they fall outside of our main focus.

As we will see, most of the empirical studies on housing and subjective well-being draw on the national panel datasets of the UK (BHPS), Germany (GSOEP) and Australia (HILDA), which follow large numbers of households (e.g. BHPS started with 5000

households) over time, interviewing them annually on a wide range of social and economic variables.

The impact of housing on well-being

The table below shows the magnitude of the different effects of housing conditions and tenure on subjective well-being, and compares them with the effect magnitudes of different life events. To ensure that coefficients are somewhat comparable, we only look at those studies which i) used OLS, ii) controlled for fixed effects and iii) used either BHPS (Foye et al., 2017; Foye, 2016; Fujiwara, 2013, Clark and Georgellis, 2013) or GSOEP (Zumbro, 2014; Clark et al., 2008). Even still, the results below should not be viewed as perfectly comparable, as each of the different studies used different independent variables, and achieved different levels of robustness.

Nevertheless, the table below suggests the effects of housing tenure/conditions on subjective well-being are much smaller than life events, but are still substantial. For example, the decrease in life satisfaction associated with reporting damp, neighbour noise, or poor light in the BHPS is about a tenth of the size of the decrease associated with widowhood (for females). Notably, in the BHPS at least, the status effects of housing tenure are of a comparable magnitude to physical housing conditions. For instance, if the importance of home-ownership (home-ownership values) among one's 'cohort' increased from the 25th to 75th percentile -thus increasing the stigma associated with renting- this would decrease the life satisfaction of renters by .12 and their GHQ Caseness² by .4. Both effects are larger than any of those found for physical housing conditions and we will explore this later.

Effect description	Magnitude	Author(s)
Data: BHPS Indicator: Life Satisfaction (1-7)		
Becoming a widow (females)	-0.56***	Clark and Georgellis (2013)
Becoming unemployed (males)	-0.35***	Clark and Georgellis (2013)
Positional good effect (owners)	+/- 0.12**	Foye et al. (2017)
Social norm effect (all renters)	+/- 0.12**	Foye et al. (2017)
Social norm effect (owners)	+/- 0.06**	Foye et al. (2017)
Damp	-0.05***	Fujiwara (2013)
Neighbour noise	-0.05***	Fujiwara (2013)
Poor lighting	-0.05***	Fujiwara (2013)
Living Space: one room per person (males)	+/- 0.04**	Foye (2016)
Condensation	-0.03**	Fujiwara (2013)
Rot	-0.03*	Fujiwara (2013)
Vandalism	-0.02**	Fujiwara (2013)
Data: BHPS Indicator : GHQ Caseness (1-12)		
Becoming widow (males)	2.72***	Clark and Georgellis (2013)
Social norm effect (<i>social</i> renters)	+/- 0.4**	Foye et al. (2017)
Getting married (females)	0.32*	Clark and Georgellis (2013)

² The Caseness score of the GHQ counts the number of questions for which the response is in one of the 'low well-being' categories, higher scores indicating lower levels of subjective well-being. For ease of interpretation, the scales are usually reversed (i.e. 12=0....,0=12), as in the studies reviewed.

Damp walls (females)	-0.22**	Foye (2017)
Poor light (males)	-0.18**	Foye (2017)
Social norm effect (all renters)	+/- 0.18*	Foye et al. (2017)
Social norm effect (owners)	+/- 0.15**	Foye et al. (2017)
Rot (males)	-0.12*	Foye (2016)
One room per person (males)	+/- 0.11**	Foye (2016)
Data: GSOEP Indicator: Life Satisfaction (0-10)		
Becoming a widow (males)	-1.02***	Clark et al. (2008)
Becoming unemployed (females)	-.53***	Clark et al. (2008)
Becoming home-owner (financially secure)	0.09***	Zumbro (2014)
Becoming home-owner (financially insecure)	-0.13***	Zumbro (2014)

Physical characteristics

The table above shows that physical housing conditions, or the quality of the house, impact on subjective well-being. The physical aspects of housing have been the focus of several studies in the UK. Using the BHPS, Fujiwara (2013) examined the effect of changes in housing variables (as reported by the respondent) on changes in life satisfaction and frequency of feeling happy, and found that poor lighting, not having a garden, wet or dry rot, and local vandalism all had a significant negative impact on life satisfaction. Neighbour noise, damp and condensation had a negative effect on both frequency of happiness and life satisfaction. Pevalin et al. (2008) conducted a similar study on the BHPS and found a similar set of variables to have an impact on physical and mental health (using the General Health Questionnaire). One limitation of Fujiwara (2013) and Pevalin et al. (2008), is that their findings could be driven by reverse causality bias. For example, an individual may be more likely to report neighbour noise as a housing problem when they have low subjective well-being. Also using fixed effect regressions with the BHPS, Foye (2016) found an increase in living space (rooms per person) to have only a (weak) positive linear effect on the life satisfaction and mental health of men.

An important study on the effect of physical housing conditions on subjective well-being was conducted by Cattaneo et al. (2009). They exploited the geographical variance of a government programme to compare the mental well-being (and physical health) of individuals who resided in one region in Mexico where dirt floors had recently been replaced by concrete floors, with residents of similar demographics in a neighbouring region where they were not replaced. Examining these two groups (control group and treatment group) before and after the intervention, they were able to identify a positive effect of the concrete floors on the health of children, and the subjective well-being of adults, which was captured with lower scores on depression and perceived stress scales. Their study is an exemplar of empirical rigour for several reasons which could prove instructive for future research on housing and well-being. Foremost among these is the quasi-experimental design of their study. Their control group and treatment group both lived in the same socio-economic area (even if they straddled an administrative boundary), and came from census blocks of similar socio-economic characteristics. The only apparent difference is that one group was in the region that received the concrete floors, and the other was not. Through careful sample selection, the authors go a long way to ruling out concerns of endogeneity, and isolating the causal relationship of interest.

Thus, physical housing conditions clearly have an impact on subjective well-being. However, as we shall see in following sections the causal factors here are complex and difficult to unravel.

Housing Tenure

Beyond the physical characteristics of housing, the rights and responsibilities that an individual has over their living environment is also likely to determine their well-being. These rights and responsibilities are typically categorised in terms of housing tenure. There is mixed evidence of a causal effect of tenure on subjective well-being. Using cross-sectional data and propensity score matching to control for selection effects, Manturuk (2012) found that perceived sense of control mediated a positive effect of home-ownership on mental health. For other evidence of a home-ownership effect on subjective well-being, see Rohe and Stegman (1994); Rohe and Basolo (1997); Stillman & Liang (2010), Cheng et al. (2014) and Ruprah (2010). Other studies, however, have found no effect of tenure on subjective well-being. For example, Popham et al. (2015), drawing on BHPS data, examined the mental health of individuals before and after they exercised the right to buy (i.e. changed tenure but not home) and found no evidence that becoming a home-owner reduced psychological distress. (See also Bucchianeri (2009).) Similarly, using the Australian national panel dataset (HILDA), Baker et al. (2013) also found that, although home-owners had better mental health than renters, becoming a home-owner had no positive impact on mental health, indicating that observed differences in mental health by tenure were compositional rather than causal.

The absence of any clear home-ownership effect may be due to the increased financial pressures, both immediately and in the long term, that offset any positive effects associated with becoming a home-owner. Taylor et al. (2006) used the BHPS and found that having housing payment problems and entering mortgage arrears had a negative effect on mental health (measured by GHQ). The effect was stronger among home-owners than tenants, and was independent of financial hardship more generally. Similarly, Bentley et al. (2011) found that the mental health of low income home-owners in the BHPS decreased when their housing costs became unaffordable (i.e. took up more than 30 percent of gross household income). However, this finding did not translate in the Australian context, where Mason et al. (2013) found unaffordable housing costs to only have a negative effect on the mental health of private renters. Zumbro (2014) examined the German Socio-Economic Panel Study and, using fixed effects regressions, found becoming a home-owner to be positively associated with life satisfaction for home-owners with a low-financial burden, but negatively associated with life satisfaction for home-owners with a high-financial burden, implying that financial security moderates the effect of home-ownership on subjective well-being. The evidence generally suggests that any positive effect of home-ownership on subjective well-being is dependent on the owner being financially secure.

One major limitation of the empirical literature on housing and subjective well-being is that it generally fails to test how these relationships are mediated. Understanding the effect of tenure, house size, or housing problems, on subjective well-being is valuable, but unless we are able to examine how these effects are mediated, we are hindered in our ability to make policy recommendations. We must understand why/how these effects occur (e.g. Manturuk, 2012). Taking tenure as an example, those studies which find a positive effect of home-ownership on subjective well-being generally attribute it to one

or more of four factors. The factors are as follows. First, autonomy; people have a natural possessive instinct and the desire to mark out their own territory which home-ownership fulfils (Saunders, 1990) Second, housing conditions. Home-ownership improves living conditions because home-owners have a greater financial stake in their home than renters (Gatzlaff et al., 1998; Iwata & Yamaga, 2008). Third, security. Homeownership can offer greater security, as home-owners cannot be involuntarily moved from their home by a landlord. Fourth, home-ownership increases social status (Gurney, 1999). The point is that each of these four mediators has different policy implications. The first three mediators at least overlap in providing support for the expansion of home-ownership, but the fourth may not, as we discuss below.

The discussion now focuses on some important issues in understanding the causal relationships between housing and subjective well-being that flow from the research reviewed above and which are crucial to informing housing policy designed to increase well-being.

Status

As illustrated in Table 1, social status effects are an important element of the impact of housing on subjective well-being. From this we can see that subjective well-being is not an isolated phenomenon; it depends to a degree on the housing conditions and views of our social reference group, those individuals to whom we compare ourselves. For example, if house size is a positional good (as several studies have proposed; Foye, 2016; Leguizamón and Ross, 2010; Frank, 2013), then a substantial portion of the well-being that individuals derive from an increase in house size will be attributable to the social status that a larger house brings to them. As such, increasing an individual's size of living space is likely to have a positive effect on that individual's subjective well-being; however, it is also likely to have a negative effect on the subjective well-being of others, who are more likely to consider their house size as inadequate as a result of their lower social status.

Social status is also likely to play a mediating role in the relationship between housing tenure and well-being. For example, if home-ownership is a social norm, as most notably advanced by Gurney (1999), home-owners will benefit from higher social status conveyed to them through conforming to the norm. In contrast, renters will suffer from lower social status through deviating. Foye et al. (2017) found evidence to support this hypothesis. They demonstrate that increases in the strength of the social norm of home-ownership among one's reference group (people of a similar age, education and side of the country) are associated with substantial increases in the subjective well-being of home-owners, as well as substantial decreases in subjective well-being of those renting accommodation. Foye et al. additionally conceptualise home-ownership as a positional good, which Frank (1985) defined as a good whose well-being (or 'utility') depends strongly on the consumption of others. Specifically, they propose that if rates of home-ownership increase among one's reference group, the relative wealth that home-ownership signals will decrease, and so will the status and subjective well-being of home-owners. Foye et al. (2017) also find evidence to support this hypothesis. The crucial point is that if the effect of home-ownership on subjective well-being is mediated by social status, then increasing rates of home-ownership may increase status and subjective well-being of first-time buyers, but this will be at the expense of existing home-owners and those renters left behind, both of whom will suffer from reduced social status.

Social status may also mediate the effect of other housing conditions (e.g. damp, poor lighting) and neighbourhood conditions on subjective well-being. Our point is that researchers must understand *how* all the different dimensions of housing affect subjective well-being (and other social outcomes such as health and education) if they are to make proper policy recommendations. If housing interventions (e.g. tax breaks for home-owners) improve individual subjective well-being but this effect occurs *through* increasing their social status, then this calls into question the efficacy of such interventions. Understanding the relationship between housing, social status and subjective well-being could have profound implications for housing policy if housing is as a zero-sum game in which one person's gain is another's loss.

When it comes to understanding the influence of social status on subjective well-being, a key question concerns the composition of one's reference group; who do individuals compare themselves with? Some attempts have been made to explore this issue. In Wave 3 of the European Social Survey (ESS), the two most important stated reference groups for income were work colleagues (36%) and friends (15%). Japanese respondents also cite work colleagues and friends as the two most important reference groups (Clark, 2013).

Little is known, however, about how reference groups are constructed in the field of housing. Batty and Flint (2013) show that people living in deprived areas generally tend not to compare their circumstances with that of others and, if they do, focus on those around them rather than those above them in the status hierarchy. However, they limit their definition of social comparisons to envy, when in fact, as Frank (2013) argues, people who simply aspire to a 'normal' level of housing consumption (e.g. carpet on their floor, enough space to have guests) are also engaging in social comparisons. More research is needed to understand how social comparisons work in housing and the influence they have on attitudes, perceptions, expectations and subjective well-being. The findings could have profound implications for policies of segregation and social mixing among others.

Adaptation

When examining the relationship between housing conditions and subjective well-being, researchers should also bear in mind that the effect of a change in housing on subjective well-being may not be same after five years, as after one year. That is to say; individuals may adapt. Thus, according to adaptation theories, individual housing preferences, or expectations, depend not only on reference group housing conditions, but also on an individual's past housing conditions.

Some insight into the importance of adaptation in housing has come from studies that have tracked the subjective well-being over time of individuals who have *moved* house. This methodology allows testing for adaptation, whereby changes in objective living conditions lead to an initial increase (or decrease) in subjective well-being, but over time subjective well-being judgements revert to their previous level. Nakazato et al. (2011) and Foye (2016) discuss theories of adaptation in relation to improvements in living conditions and increases in living space, respectively. Using the GSOEP, Nakazato et al. (2011) found that moving for 'housing related reasons' led to an initial increase in housing satisfaction that was partially sustained over the next four years, but they found

no significant effect of moving on life satisfaction. Using BHPS data, Foye (2016) and Findlay and Nowok (2012) both found housing satisfaction to take a downward post-move trajectory after moving house (Foye only looked at those who moved for 'larger accommodation'). Only two studies have found a significant effect of moving house on life satisfaction. Frijters et al. (2011) looked at movers in Australia (HILDA) and found a positive effect of moving house (for all reasons) on life satisfaction but consistent with adaptation theories, this effect only lasted for six months. In contrast, Nowok et al. (2013), found no evidence of adaptation in life satisfaction judgements. Again, using the BHPS, they found that moving house (for any reason) was preceded by a period when individuals experienced a significant decline in life satisfaction. Moving house brought life satisfaction back to initial levels where they remained for the next 5 years (and perhaps longer).

In sum, it has been shown that any increase in subjective well-being associated with an improvement in living conditions may diminish over time, as the standard of housing that an individual considers adequate rises with the standard of housing that that individual experiences. Does this mean that all housing improvements will have a similar temporary impact? More research is needed to help determine where housing investment can have the greatest long-term impact on subjective well-being.

Conclusions and avenues for future research

This paper has shown the different approaches to conceptualizing subjective well-being that have been applied to the study of housing. Most studies drawing on large scale datasets have conceptualised subjective well-being as life satisfaction. These studies have shown that physical conditions, housing tenure, and status all have an influence on subjective well-being, but have, in most cases, fallen short of providing definitive answers to the processes that bring about these outcomes.

There are key questions relating to the conceptualisation of subjective well-being and the research methodologies used. The approach based on single measures of housing and life satisfaction is very useful in showing relationships and establishing hypotheses, but understanding of the relationships involved would be furthered by more qualitative research focused on the perceptual factors involved. The field would benefit from multi-method research that has not been pursued to any extent up to now.

The broadening out of research methods would go hand in hand with a broadening of the conceptual basis of subjective well-being. Life satisfaction and housing satisfaction measures clearly offer considerable insight into housing phenomena, but employment of a broader approach would add further understanding to what are complex factors. The application of the psychological factors that drive satisfaction has been restricted, although the approach would add to knowledge and understanding in many other areas that have been researched using the hedonic approach.

There is a myriad of crucial issues that deserve further study. More research is needed to understand who individuals compare their housing to and the mechanisms through which social comparisons operate. For example, the evidence above suggests that living in *relatively* small accommodation will be detrimental to individual subjective well-being. Is this because the individual feels a sense of shame (internal sanction) or is it because

their reference group (whoever this is) imposes external sanctions on them, such as mocking or ostracising them? Qualitative research -such as that conducted by Gurney (1999) and Knight (2002) – could prove fruitful in answering these important questions. The issue of adaptation is also key. People adapt to the circumstances they find themselves in, and we should aim to uncover the processes that are involved in this.

Additionally, research exploring subjective well-being should also inform the work of housing economists. One does not have to be a neo-classical economist to recognise that subjective well-being plays an influential role in determining individual choice behaviour. Clark (2003), for instance, shows that those whose mental health fell the most on entering unemployment are less likely to remain unemployed. Housing economists could use the above findings on status (and perhaps adaptation) to develop hypotheses about housing market behaviour. For example, the above literature implies that i) the likelihood of an individual entering home-ownership will be positively related to the strength of the social norm among their reference group, and ii) that house size is likely to be subject to what Robert Frank has termed a 'positional arms race', whereby an increase in reference group levels of living space increases the likelihood of an individual upsizing (either through an extension, or moving house). Social status may also drive neighbourhood choice, as proposed in the theoretical model put forward by Huu Phe and Wakely (2000). But, while social status may well have an effect on personal well-being, it is less clear what the relationships between status and collective and personal well-being might be for the communities and neighbours themselves. Therefore, understanding the potential differential impact of personal and collective well-being in this context might also be important (Abrams and Christian, 2007).

A further task is to integrate the well-being perspective with the capabilities approach. The core claim of the capability approach is that judgements about justice or equality, or the level of development of a community or country, should not primarily focus on resources (like welfare economics does), or on people's mental states (as utilitarianism does), but rather on the effective opportunities that people have to lead the lives they have reason to value – their capabilities (Robeyns, 2005). To give just one example, providing a homeless person the option of shelter at night represents progress (or a more just state of affairs) even if the homeless person turns down the offer, because their *capabilities* have still been enhanced. Coates et al. (2013) note that, despite the growth of interest in the capabilities approach as a way of structuring social science and policy analysis, there is relatively little substantial research that applies the capabilities approach to housing. This gap clearly needs to be addressed.

Research examining the determinants of subjective well-being is vital in this context because it can help us identify those capabilities which individuals have good reason to value. Although there is no consensus over where exactly subjective well-being fits into the capabilities approach, most agree that it should be central. Amartya Sen (1985: 200), for instance views well-being (or 'happiness' as he refers to it) as a 'momentous functioning', while Binder (2014) argues that the specification of capabilities should be based purely on what increases subjective well-being (for reviews of how subjective well-being literature relates to capability approach, see the two special issues introduced by van Hoorn et al. 2010; and Comim 2005, respectively). In any case, there can be little doubt that research into the relationship between housing and subjective well-being has a valuable role to play in identifying those capabilities (in relation to

housing), thus helping us to fine-tune the ways that policy might bring about a more just society.

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