

EARLY STAGE EVALUATION OF THE SOCIO-ECONOMIC BENEFITS OF BUILT ENVIRONMENT HOUSING REGENERATION PROJECTS

Julius Akotia and Chris Fortune

School of the Built Environment, University of Salford, Greater Manchester, M5 4WT, UK

In recent years, sustainable regeneration has been recognised as being of major economic and social concern in the world. In the UK for instance, government has initiated a number of policies and evaluation methods to deal with some of the environmental problems associated with regeneration projects. However, the post construction evaluation of these projects has often resulted in them being seen as not achieving their set objectives. Attempts aimed at evaluating the implementation of sustainability by built environment professionals have primarily been limited to their assessment of the projects' potential environmental impacts with the associated socio-economic aspects being neglected. While there have been a number of studies on sustainability and its evaluation in relation to regeneration projects in the UK, there has not been any well-defined built environment research that has been able to deal holistically with the broader issues of sustainability in terms of benefits/impacts of the regeneration projects to the end-user and the communities concerned. The findings of an exploratory study that adopted a semi-structured interviews approach for data collection from six senior regeneration managers of construction industry organizations involved in housing regeneration projects in the UK are presented in this paper. The findings reveal a lack of a mechanism to evaluate the socio-economic benefits of sustainability in relation to housing regeneration projects at the early stage of the project's development. The results suggest that the environmental factors of sustainability continue to be the most dominant factor of sustainability considered by built environment practitioners as compared to the consideration of a project's potential socio-economic benefits.

Keywords: socio-economic benefit, sustainable housing, regeneration projects.

INTRODUCTION

The concept of sustainable development and regeneration has been an essential focal point of government policy for sometime in the UK and it has contributed to the enhancement of many communities' physical structures (Haran *et al.* 2011). Many of the earlier initiatives that were meant to tackle socio-economic disparities have focused on improving the physical and environmental aspects of regeneration. In more recent times, there has been a number of research projects which sought to study and analyze how the UK built environment is responding to the challenges of integrating sustainability into regeneration projects (Dixon, 2006). The Sustainable Development Commission, (SDC, 2003), suggested that the development of regeneration has proved to be a testing and on-going challenge for government agencies, construction industry

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practitioners and communities within the UK. The appreciation of such challenges has led to the development of various management strategies and systems to guide and direct industry practitioners to achieve higher and improved sustainability standards.

However, attempts aimed at implementing sustainability assessment have primarily been limited to the assessment of the environmental performance of building. According to Brandon and Lombardi (2011), previous works undertaken on sustainable regeneration have shown that they lack a conceptual clarity related to sustainability assessment. Brandon and Lombardi (2011) identified sustainable regeneration/development as an evolving field and suggested the need for further study as they asserted that there had not been a well-defined evaluation framework developed that was able to deal with the issues of social and economic benefits/impacts and their evaluation in a comprehensive and a decisive manner. It is quite clear that the present project management systems, the industry and its governance structures, and the nature of the assessment systems all have an influence on the current construction industry practices' related to the delivery of regeneration programmes. Consequently, the quest for the delivery of sustainable housing regeneration calls for an exploration of new ways of evaluating, at an early stage, sustainable regeneration projects that are under-pinned by strong socio-economic considerations; and which better address sustainability concerns in a holistic manner to maximise the sustainability benefits of these projects.

The early stage evaluation of socio-economic benefits of sustainable housing regeneration projects in the UK is explored in this paper. Initially, literature is reviewed on sustainable housing development and regeneration, pre-project evaluation practices and their limitations. A discussion is then presented on the findings from an exploratory study that adopted semi-structured interviews with six senior managers of leading construction industry organizations involved in sustainable housing regeneration projects in the UK, and draws a conclusion. The work draws from on-going research which is concerned with the development of a framework for socio-economic benefit evaluation of regeneration projects in the built environment.

LITERATURE REVIEW

Sustainable housing a driving force of regeneration

According to Winston (2009) the quest for regeneration has largely been dictated by the need to provide much higher levels of new and affordable housing facilities, which has traditionally been unresponsive to meet the demand. Traditionally, the UK regeneration strategy has focused on housing conditions of the poorer communities (Special Economics Research Center Strategies (SERC), 2011). It sets out to provide high quality housing that contributes to the creation and maintenance of sustainable communities. The government's Green Paper (HM Treasury, 2007) outlined the need to increase the level of house building and tasked the UK government to meet a target of three million new homes by 2020. A recent study by Maliene *et al.* (2008) has recognized the housing sector as a major concern requiring an intervention of government and other key stakeholders. Maliene *et al.*'s work underscored the fundamental importance of housing provision within the community regeneration programmes. Generally, the focus on sustainable housing development echoes the important role housing plays as a major driving force of regeneration schemes (Haran *et al.* 2011). Because it is often seen as an indicator for growth and sustainable development of an area (Winston 2009).

Bailey (2010) described the housing sector as a symbol that represents the entire scope of urban development and regeneration process, which should be considered as the “heartbeat” of regeneration concept that has considerable potential to drive local regeneration and provide substantial benefits in terms of creating sustainable local communities (Smith, 2006). To deliver sustainable housing as advocated by the government’s Green Paper (HM Treasury, 2007) will require a strong and strategic approach to housing development to meet local needs. It can be seen that housing is directly rooted in our community set up, for that reason, focusing on housing development has enormous potential to drive the regeneration process towards the attainment of a sustainable community (Smith, 2006). The growing pressures on national and local governments to meet the decent homes demands by way of regenerating areas of poor housing facilities; particularly the social housing sectors (Smith, 2006) make the call for sustainable regeneration timely. If the supply of sustainable housing is not matched to the rapid growth of human population, there is a possibility that the government agenda to achieve sustainable housing target for all by 2020 will be hampered (Mezher, 2011).

In such a case, the socio-economic condition and the quality of life of society will also be affected. Housing has a key role to play in delivering regeneration that addresses the socio-economic decay in areas that have the potential for growth (HM Treasury, 2007). Housing-led regeneration can contribute to the sustainable development of a community through the creation of new and affordable houses. An empirical study by Gibson *et al.* (2011) found a linkage between poor housing, employment and quality of life. Poor housing facilities can be damaging to people’s self-esteem and their general welfare (Gibson *et al.* 2011). Adair *et al.* (2003) indicated that the improvement of the physical structures in the housing sector would provide the driving force for regeneration policy and initiatives to strive in a complex and unstable environment. It has been acknowledged that, a successful housing regeneration programme that is centered on the socio-economic well-being of the people concerned is more likely to deliver tangible and sustainable benefits (Haran *et al.* 2011). However, a pre-requirement to the attainment of such benefits is to improve the current early stage project evaluation systems to ensure that such regeneration projects deliver sustainability benefits in a holistic manner.

Pre-project evaluation practices

The significance of early consideration of evaluation of sustainability factors has been acknowledged by (Lee, 2006). Lee argued that the timing of the evaluation process for any project is paramount since potential project outcomes can be ascertained during the pre-construction stage. This argument was supported in a subsequent work by Smith and Jagger (2007: 38) who argued that, the decisions taken during the early project development stages (for example at the briefing, feasibility or inception) result in “more far reaching economic consequences than the relatively limited decisions which can be made later in the process”. Evidence to-date points to the fact that, evaluating projects’ success factors early at pre-development stages is central to unearthing any risks associated with the projects leading to more desirable and acceptable project outcomes. A case study conducted by Ugwu *et al.* (2006), indicated that incorporating project sustainability evaluation early at the design stage has the potential to provide cost savings and facilitate value for money business decisions. Ugwu *et al.* (2006), went on to suggest that, many decisions that influence project success outcomes are established during the “front end” rather than the “back end” approach currently being adopted by practitioners to evaluate the sustainability of

their projects. Yet the absence of any comprehensive and well structured framework makes such early stage evaluation practices progressively more problematic and doubtful.

However, with a greater demand for sustainable buildings coupled with the requirement to develop such systematic and multi-dimensional sustainability assessment models (Ding, 2008), requires an understanding of the current state of evaluation practices within the industry. Lee (2006) advocated a paradigm shift toward assessment systems that constitute a satisfactory integrated approach to the evaluation of sustainability impact rather the current mechanistic approach currently being adopted. The bottom-line is, for projects to attain their sustainability objectives, things have to be done differently. While some sustainability factors may be easier to identify and quantify using methods such as BREEAM and LEEDS, other indicators relating to socio-economic sustainability may be difficult to quantify using the same BREEAM and LEEDS approaches. Therefore, it is essential that emergent evaluation systems clearly set out and define their boundaries and parameters. It can be argued that an evaluation framework that advocates the proactive assessment of sustainability dimensions (such as the social, economic and environment factors) in a holistic and integrated manner presents a greater chance of arriving at a more satisfactory sustainability-driven project related decision.

Limitations of current evaluation methods

Although a number of evaluation methods have been developed and applied in the construction industry over the period, their focus and attention has remained limited to evaluating the environmental impacts of a proposed building at its design stage (Hurley and Horne, 2006). Such evaluation objectives and procedures have traditionally been limited to design cost and environmental factors, and their validity and reliability for evaluating socio-economic sustainability factors at both pre-project and post project stages still remain to be tested. Brandon and Lombardi, (2011) pointed out that the current list of available methods including cost benefit analysis do not reflect the complexities of issues they were designed to address especially if evaluation of individual projects is required. They noted that most of the existing evaluation methods were based on environmental criteria that were derived from ideas and assumptions of individual practitioners. Studies carried out by Cole (2005) and Ding (2008) identified data intensiveness, impracticality and late application as some of the major criticisms that have been labelled against current evaluation tools. Cole (2005) went on to suggest that a number of the current evaluation methods were still functioning as voluntary and market place mechanisms and this was undermining their importance and usefulness. Similarly, over generalization and reliance on environmental factors were also recognized by the industry practitioners as some of the weaknesses inherent in the current evaluation systems (Jeswani *et al.* 2010). These weaknesses have played a major role in contributing to the poor performance of the current evaluation systems (Ding, 2008) and their inability to offer a comprehensive evaluation approach to maximize the sustainability benefits of the projects.

RESEARCH APPROACH

In order to explore the main sustainability issues to meet the objectives of the study, a qualitative research approach was adopted with semi-structured interviews utilised to collect data. This approach reflected an interpretivist philosophical position that made use of inductive research strategy and qualitative methodology. A qualitative research approach is considered as an effective method that occurs in a natural setting which

enables the researcher to develop a level of detail from involvement in the practice (Creswell, 2009). Initially, 15 leading construction organisations in the UK were selected, based on their experience and knowledge in sustainable housing regeneration projects, through a purposive snow balling sample technique. Formal letters were then sent out to these organisations as an invitation to participate in the study. Follow up telephone calls were also made to these organisations to explain further the purpose and the context of the study. In all, a total number of six (6) organisations agreed to participate in the study. The profiles of these agreed organisations are shown in the table 1 below. Face-to-face in-depth semi-structured interviews were then undertaken (between September 2011 and February 2012) with the senior sustainable/regeneration managers of these respective organisations. Each interview lasted for between 30-45minutes. The interviews were formatted around a range of open-ended questions to explore the sustainability issues under investigation. The responses to the exploratory nature of the questions were analysed to identify the emerging themes and issues in the current practices related to early stage evaluation of sustainable regeneration projects.

Table 1: Profile of leading industry organizations interviewed.

Respondent	Position	Type of organization
A	Senior manager, sustainability/regeneration	Contractor organization
B	Senior manager, sustainability/regeneration	Contractor organization
C	Senior manager, sustainability/regeneration	Contractor organization
D	Senior manager, sustainability/regeneration	Contractor organization
E	Senior manager, sustainability/regeneration	Contractor organization
F	Senior manager, sustainability/regeneration	Contractor organisation

DISCUSSION OF RESULTS

The objective of the study was to explore the state of the art in early stage evaluation of sustainable housing regeneration projects and how in particular the socio-economic sustainability factors were being articulated and evaluated during the early stages of projects. The main themes that emerged from the data analysis included sustainability factors, sustainable regeneration objectives/benefits, the evaluation framework and socio-economic impact/benefit. The gap between theory and practice has also been summarised and illustrated in figure 1 below.

Sustainability Factors

The first interview question put to the interviewees explored their organizations' understanding of sustainability and the importance the practitioners and their organizations attached to such sustainability factors when evaluating project viability. A significant theme that emerged from their responses was the lack of conceptual clarity of sustainability factors by the respondents. All the interviewees provided relatively simplistic definitions and understanding of sustainability in relation to their business operations. Typical of the comments made were as follows:

"Sustainability is something ingrained and inherent in our business processes something that the business has to pay attention to in order to stay competitive...It is about protecting our business from the risks of today and ensuring that we respond to the challenges and opportunities that tomorrow brings..." (Respondent E).

“I think sustainability is being one of the key driving forces behind our operations. It has a short to long term benefits to our business. First and foremost it fits with the vision and values of our business. Adopting sustainability makes us competitive in the environment we operate... It helps us to reduce our carbon footprint, enhances our long-term values...” (Respondent B).

The responses highlighted the limitation in the practitioners’ perception and understanding of sustainability. The ambiguity of what constitutes sustainability was also identified as a major problem in works done by Evans and Jones (2008) and Brandon and Lombardi (2011).

Sustainable regeneration objectives and benefits

When the practitioners were further asked about their understanding of the main objectives of sustainable regeneration projects, the respondents provided mixed responses. Some interviewees commented:

“To achieve decontamination, re-use site soils in a sustainable manner and create the proposed landform that will enhance public amenity and wildlife biodiversity” (Respondent F).

“...To ensure comfort and safety. To be aware of the social and physical environment and to endeavour to improve the quality of life to residents...Is about achieving the right balance through our innovative design solution and area transformation, while maintaining a clear focus on the overall objectives of creating a robust infrastructure and services ...”(Respondent C).

“All regeneration needs to be profitable and if isn’t profitable, there’s no point doing it, if there won’t be any kind of benefit. So without the benefit element, no regeneration happens unless you get a philanthropic developer who just wants to spend millions of pounds to make people happy for things to happen.” (Respondent A).

Discussing the issues further about the benefits to their organisations and the end-users, most of the respondents indicated that company reputation and profit making was the main benefits for adopting the sustainability principles by their organisations. However, the majority of respondents were of the opinion that issues related to energy usage and in particular cost savings on fuel bills was the main benefit to the end-user.

Evaluation and evaluation framework/mechanisms

According to Kazmierczak *et al.* (2009), the evaluation process provides an effective management mechanism on which decision-makers can base their judgement in a variety of ways. In exploring the evaluation mechanisms currently in practice, many of the interviewees indicated BREEAM as being the main evaluation mechanism used for their projects. As some interviewees noted:

“BREEAM is the main assessment method used for our projects as it focuses on low or zero carbon technologies and designs...It is a vital part of our culture and scheme to promote the adoption of cohesive sustainable solutions across all our specialism as a best practice to meet our sustainability objectives” (Respondent C).

“...BREEAM is easy to use as it provides a guideline and specifies the environmental impact of the final products. BREEAM ultimate benefits are recognisability in a sense that it tends to capture the main environmental aspects of projects...Compliance with the existing environmental legislation and principles and best practices” (Respondent D).

Evidence from the responses showed that sustainable regeneration practitioners still consider environmental factors to be the most dominant feature of sustainability and they tend to neglect the consideration of any socio-economic factors. Most of the respondents emphasized on the environmental credentials of BREEAM and also regarded its application as representing the industry’s best practice relating to sustainability. It is worth noting that BREEAM parameters are prescriptive in nature and largely based on quantitative assessment which tends to ignore the processes and issues relating to socio-economic factors of sustainability of the projects. This finding is also consistent with the earlier work done by (Essa and Fortune, 2008). When asked further about just when the evaluation frameworks were being applied during the project life cycle, there were mixed responses. Some of the interviewees noted:

“This varies from project to project. If our property business is involved then we are involved at concept stage through design and construction. Most of the time we would be contracted at RIBA stage D and E” (Respondent A).

“Ultimately it depends on the nature and duration of the project...We adopt a flexible and innovative approach based on the requirements of the project we are involved in by demonstrating compliance with the specific targets and key performance indicators agreed by all parties on sustainability relating to the construction and operation of the facility...” (Respondent D).

In addition, another interviewee who alluded to the use of an evaluation model commented:

“We do not have a structured evaluation framework per se, what we do have is some models for planning and benchmarking...Yes we tend to apply our models throughout our project duration to identify and address actions as soon as possible where the greatest sustainability impact may be available...This provides our sustainability team with a brilliant opportunity to look at a broad range of performance issues against the set of our sustainability targets and benchmarks” (Respondent F).

These responses however revealed the lack of a structured evaluation framework and a lack of an appreciation of early stage evaluation mechanisms for appraising the direct and indirect socio-economic benefits/impacts of their sustainable housing projects.

Socio-economic impact/benefit

Finally, when interviewees were asked for their views about the socio-economic impacts of their housing regeneration projects on the communities, a significant misconception emerged between sustainable regeneration projects, community redevelopment and renewal projects. Although all the respondents interviewed were involved in sustainable regeneration projects, their responses indicated a limited knowledge of socio-economic aspects of sustainable regeneration projects. This was demonstrated by the comments given by some of the interviewees as:

“Remediation of an existing hazardous environment in a sustainable way. Creation of public amenity, the improvement of public access on site and improved existing wildlife habitats that will encourage greater biodiversity on site...Redevelopment of site for use of both commercial/residential and public open spaces” (Respondent E).

“It is the social and economic impacts that we find most problematic. Our main goal across all our disciplines is to take a responsible attitude toward renewal of our communities. We are keen on providing modern community facilities, improving the physical environment of our communities as well as safeguarding the environment as a whole for the benefit of our communities” (Respondent B).

Many of the interviewees expressed their views in line with the potential environmental benefits of a project and also gave emphasis to sustainability factors that fitted within their own understanding and agenda (Evans and Jones, 2008). The limited consideration given to socio-economic factors in practice was also identified in a study carried out by (Carpenter, 2011).

THEORY AND PRACTICE - THE CURRENT GAP AND BARRIERS

Much of the sustainable regeneration literature has shown that the concept of sustainability has not been well understood by many stakeholders within the built environment. The concept of the “triple bottom line” of sustainability places equal importance on the economic, social and environmental dimensions (Essa and Fortune, 2008) which are fundamental ingredients in any regeneration project. The gap and barriers identified within the exploratory study with the practitioners are presented in figure 1 below. The current gap and barriers existing between theoretical concepts and the ‘reality’ in practice was revealed from the findings as all the six practitioners have consistently placed emphasis on the environmental credentials of projects to the neglect of the social and economic sustainability aspects of projects. This was evident in the trend of responses in all the main areas explored. This is highlighted in figure 1 below, in which practitioners' practical knowledge and understanding of sustainability has acted as a major barrier to the pursuance of social and economic aspects of sustainability in practice. Following the exploration of the issues with the practitioners, it can be seen that the challenges associated with the current delivery of regeneration housing projects are products of the key players’ knowledge, perception and understanding of sustainability. Consequently, this is reflected in the way sustainability has been articulated and applied in practice (see fig. 1). It can also be suggested that the high emphasis placed on the environmental features could partly be attributed to the government policy on green building and the existing evaluation tools such as the BREEAM which are focused on measuring the environmental impacts of projects. However, it is argued that environmental sustainability by itself cannot function properly in any successful regeneration project if it is not accompanied and complimented by social and economic benefits.

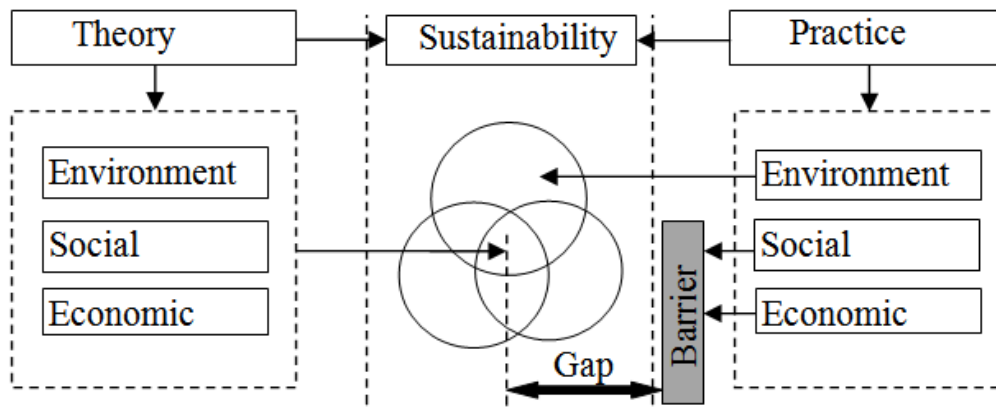


Figure 1: Summary of the findings

CONCLUSION

The early stage evaluation of socio-economic benefits of sustainable housing regeneration projects in the UK has been explored through an initial study that used a semi-structured interview approach to collect data from six practitioners in the field. The study identified a disparity between the theoretical concept and the reality in practice of sustainability factors on a personal and organisational level. The main findings from the study established that the consideration of sustainability was still viewed as being concerned with environmental issues by built environment professionals to the neglect of the socio-economic factors in sustainable housing regeneration projects. Another major limitation that was identified in the interviews was the lack of any existing early stage evaluation frameworks or mechanisms for evaluating the direct and indirect impacts/benefits of socio-economic outcomes of sustainable housing regeneration projects. The findings also identified that while all the interviewees seemed to have accepted the sustainability concept in principle; their responses indicated a lack of appreciation of the wider meaning and understanding of the composition of sustainability. The results of this initial study support the need to collect more data from other built environment regeneration projects to enhance the reliability of the findings.

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