Towards the delivery of sustainable regeneration projects' types in the UK: an exploration of the role and level of involvement of key practitioners

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Sustainable regeneration is a vital aspect of the UK sustainable development agenda in which a lot of efforts have been made over the years. Traditionally, the UK regeneration strategy has evolved from the provision of affordable housing through to the provision of other public sector projects and private sector commercial projects. While the concept of sustainable regeneration has been a key facet of UK sustainable development agenda over past decades, it can be said that the delivery of sustainability benefits of major projects has been determined by numerous factors. Paramount among the factors which have affected and continue to determine the delivery of sustainability outcome of regeneration projects are the construction industry practitioners who are tasked with the responsibility in the delivery of these regeneration projects. The paper presents the findings of a study which explored practitioners' level of involvement in the delivery of the three types of sustainable regeneration projects in the UK, using a mixed-method research to obtain 21 and 193 responses from practitioners through semi-structured interviews and questionnaire survey respectively. The findings reveal that housing-led regeneration project is most involved type of regeneration project by practitioners, while the least involved project is private sector commercial regeneration project.

Keywords: Main types of sustainable regeneration projects, key practitioners, level of involvement

Introduction

In the context of this study, the three main types of sustainable regeneration projects are housing projects, public sector commercial projects and private sector commercial projects. Housing regeneration projects refer to dwelling or residential houses, while public sector regeneration projects refer to other regeneration projects (other than housing and projects with commercial inclinations) which are provided only by the public sector (e.g. schools, hospitals, etc.). Private sector commercial regeneration projects on the other hand, are types of regeneration projects which are provided by the private sector or with the private sector as a partner, which have commercial inclinations (e.g. retail/shopping centres, office buildings, etc.). The aim of this paper is to explore the key practitioners' levels of involvement in the delivery of in the three main types of sustainable regeneration projects (housing, public and private sector commercial projects) in the UK. To achieve this, the paper begins by providing the background literature on sustainable regeneration and the sustainable regeneration projects' types, and goes on to present the findings from data obtained from 21 and 193 practitioners who participated in the study through semi-structured interviews and questionnaire survey.

LITERATURE REVIEW

The Concept of Sustainable Regeneration

The objective of the sustainable regeneration concept according to Communities and Local Government (CLG), (2009); Glossop, (2008) and Sustainable Development Commission (SDC), (2003), is to transform society by creating sustainable places where people want to live, work and feel secure. It also means meeting the sustainable development needs of the people in a way which delivers social progress, economic growth, environment protection, and a better quality of life (OGC, 2007; SDC, 2003). In

more recent times, there has been a number of research works which sought to study and analyse how the UK built environment was responding to the challenges of integrating sustainability into regeneration projects (Dixon, 2006). The Sustainable Development Commission (SDC, 2003), for example, suggested that the development and delivery of regeneration projects has proved to be a testing and on-going challenge for government agencies, construction industry practitioners and communities in which regeneration projects have been sited. In their seminal work, Jones *et al*., (2003) argued that achieving successful sustainable regeneration has proved to be elusive and difficult to deliver due to the lack of understanding and over generalisation of sustainability factors. Winston (2009) for instance, identified many such problems associated with the successful delivery of sustainable regeneration initiatives to be of a social and economic nature rather than the environmental aspects of the projects. The Audit Commission Report (2007) has also revealed that many sustainable regeneration projects are yet to have a consistent and positive impact on the most deprived localities in which the projects have been implemented. For example, the report indicated that the level of long-term unemployment in such 'so called regenerated' communities has remained static and targeted work to develop skills and access to sustainable jobs and employment for these communities has remained under developed.

According to Brandon and Lombardi (2011), previous works undertaken on sustainable regeneration have shown that they lack a conceptual clarity related to the evaluation of sustainability outcomes of the projects. They argued that most of the existing evaluation methods designed for regeneration projects were based on environmental indicators that were derived from ideas and assumptions of individual practitioners. Numerous attempts aimed at delivering sustainable regeneration have primarily been limited to the environmental performance of the projects (Akotia, et al, 2016; Reyes et al., 2014). Although a number of evaluation systems have been developed over the period, their focus and considerations have largely remained limited to evaluating the environmental impacts of the projects. Many of the earlier regeneration initiatives that were meant to address socio-economic disparities have focused on improving the environmental aspects of regeneration. This has resulted in many sustainable regeneration projects' inability to deliver their required sustainability objectives.

However, it has been suggested that improving the socio-economic sustainability aspects of regeneration projects can potentially enable sustainable regeneration projects to deliver better sustainability outcomes to address the socio-economic disparities that were entrenched in the communities (Haran *et al.*, 2011; Adamson, 2010; CLG, 2008; SDC, 2003). In this regard, Smith (2006) argued that sustainable regeneration projects should not only focus on addressing environmental aspects, but should also consider the broader issues of social and economic sustainability factors of the projects as well. Similarly it is also suggested that sustainable regeneration projects can reinforce a sense of community confidence, make an important contribution to the local economy and act as a catalyst for improving the wider community (Office of Deputy Prime Minister (ODPM), 2005), if the social and economic sustainability deliverables are well incorporated and delivered as outcomes of the projects. However, this will require innovative practices and evaluation mechanisms that are capable of embracing other dimensions beyond the current mainstream consideration of sustainability, and not the one that just focuses only on environmental dimension (Dixon, 2006; SDC, 2003). In this regard the built environment practitioners also have a key role to play in ensuring that sustainable regeneration projects deliver their required socio-economic sustainability benefits.

Key Practitioners' Roles, Responsibilities in the Delivery of Regeneration Projects

In the context of this study, the roles of practitioners refer to their professional background (i.e. architect etc.), while the responsibilities refer to the core duties (i.e. preparing design, and specification, etc.) they perform in the delivery of the projects. Also, the practitioners identified to be mainly involved in the delivery of regeneration projects, who participated in the study, are referred to as key practitioners. Similarly, the involvement of these key practitioners means engaging them as participants in the discharge of their responsibilities in the delivery of regeneration projects. In this regard, the words 'involvement' and 'engagement' are used interchangeably to mean the same thing in this study. Below are the identified key practitioners, their roles and responsibilities in the delivery of sustainable regeneration projects:

- Architect: is the practitioner tasked with the responsibility of producing the drawings and the design solutions of the project to meet the client's needs/requirements.
- The client's representative: for the purpose of this study, the client representative is any practitioner representing the client's interests on the project. The responsibility for achieving the client's requirements lies with the client's representative, who is one of the most influential practitioners in the construction project delivery processes.
- Project manager: is the practitioner responsible for managing and coordinating processes, resources (including other practitioners on a daily basis), and facilitating effective delivery of all the projects' deliverables, to meet all the requirements of the projects, and also provides other construction information on progress and variations. A key practitioner for the adoption and implementation of decisions etc., for the project.
- Commercial manager: is the practitioner responsible for managing and controlling the cost aspects of the project.
- Sustainability manager: is the practitioner responsible for the sustainability aspects, including the environmental aspects of the project. They are responsible for ensuring that all other practitioners, including the client's representative, are aware of their sustainability responsibilities in relation to sustainable construction projects.
- Regeneration manager: is the practitioner responsible for developing regeneration strategies for the project and ensuring that sustainable regeneration features are incorporated into the project, to deliver a wide range of regeneration outcomes for stakeholders, including the local community. They provide advice on sustainable regeneration deliverables to the project team/practitioners.
- Training/corporate social responsibility (CSR) manager: is the practitioner responsible for ensuring that the local content is incorporated in the project. This includes recruitment and procurement of local labour and materials, and training and apprenticeships and work placements etc., for local people on the project.

Involvement of Key Players (Practitioners) in Sustainable Regeneration Projects

In terms of delivering sustainable regeneration, the involvement of key players in the delivery of projects is fundamental to the projects' sustainability outcomes. It is important to establish the roles and the levels of involvement of practitioners, as these are crucial towards the adoption and implementation of sustainability features in any regeneration project. Generally, the interactions and cooperation existing among such key players, (tasked with the responsibility to deliver the project) ultimately influence and determine the overall performance of the projects sustainability objectives (Takim, 2009). It has also been argued that engaging key practitioners appropriately in the project delivery

processes can help to influence efforts towards the adoption and implementation of a wide range of sustainability deliverables for the projects (Mathur, *et al.,* 2008). Numerous challenges associated with the management of projects' teams identified by previous contributors include inadequate involvement and undefined roles of key stakeholders among others factors (Yang *et al.,* 2009). Sustainable construction projects, and in particular, regeneration projects consist of a number of complex and interactive activities which require a number of practitioners to deliver them. It has been said that sustainability features in regeneration projects are multifaceted and often subjected to different processes and interpretations during different stages of the projects' delivery, and therefore require a collective approach to drive the sustainability processes of such projects. Feige, *et al.* (2011) pointed out that the sustainability concept in itself causes various forms of challenges to different groups of practitioners and stakeholders. According to Mathur *et al.* (2008), the contesting nature of sustainability issues and the benefits associated with the delivery of sustainability projects, provide a compelling case to effectively engage key players in their delivery processes. The processes and activities involved in delivering sustainable regeneration projects are also often considered as complicated. Such complexities have also been cited as one of the reasons for many practitioners' inability to adopt and implement sustainability features on their projects in practical terms (Tippett *et al.,* 2007).

The complexity and the multifaceted nature of sustainable regeneration projects, coupled with the implications and impacts of sustainability, make it even more crucial to engage key players in the delivery of sustainable regeneration projects (Mathur *et al.* 2008). Hence, the requirement to adopt and implement sustainability features in regeneration projects, taking into account the multi-dimensional issues and impacts, calls for a "multi-scale, trans-disciplinary and pluralistic approach that is able to integrate and synthesise the many different perspectives" for the projects (Lombardi, 2009: 179). In that way, many sustainability challenges associated with the execution of such complex activities and processes can well be dealt with. It is only then that such projects' sustainability deliverables can be addressed collectively. The performance and achievement of the projects' sustainability outcomes largely depends on the inputs from these players. It is believed that sustainability features would be best executed when key players are actively represented in such regeneration delivery processes. Adequate involvement of key players will also ensure effective collaboration to overcome any possible difficulties and divisions, which are likely to undermine the projects' successes. Active and effective involvement, particularly at the conception stages of the projects, is considered as fundamental towards the adoption and implementation of sustainability factors in regeneration projects. It is suggested that focusing attention on the selection and formation of the main project team early in the planning stages is fundamental in achieving the successful delivery of a project's objectives (DBIS, 2013; Rowlinson *et al.,* 2008). It is believed that a project team, if well- formulated, with individual practitioners well represented in the team formation process, would enable such practitioners to understand what is required to be achieved in terms of sustainability (Mathur *et al.,* 2008). Such an approach may well help to foster a strong spirit of corporation among practitioners, overcome divisions and oppositions to new ideas, build consensus to create "a context-specific interpretation of sustainability" and align the project's sustainable objectives with practitioners' perspectives (Mathur *et al.,* 2008: 606). In order to enhance the understanding of practitioners' levels of involvement in regeneration projects, it is also vital to explore the literature behind the main types of regeneration projects.

Types of Sustainable Regeneration Projects

Sustainable regeneration is a vital aspect of the UK sustainable development agenda in which a lot of efforts have been made over the years to provide regeneration projects in the areas of housing and other flagship projects (SDC, 2003). The UK's regeneration strategy has conventionally been designated and defined by area-based initiatives mainly by the public sector and the property development industry (Dixon, 2006). The literature review has shown that the regeneration initiatives have conventionally and fundamentally been centred on three main types of projects; housing, public and private sector commercial projects (Dixon, 2006; SDC, 2003). Traditionally, the UK regeneration strategy has evolved from the provision of affordable housing through to the provision of other public sector projects, and later to private commercial regeneration projects. The growing pressures on national and local governments to meet the infrastructural needs of communities have accounted for this development. The formation of these project types has set the context and served as an indicator for performance evaluation of the sustainable regeneration agenda by built environment practitioners. Using these project types (Dixon, 2006) has created a broader framework on which regeneration practitioners have continued to espouse and measure the performance of a range of sustainable regeneration projects.

It is believed that combining the efforts and benefits from this range of sustainable regeneration projects would have a more far-reaching impact than if it were just one form of regeneration project. Consequently, the provision of these types of project assumes a greater significance within the paradigm of the sustainable regeneration development agenda. The delivery of housing-led regeneration, for an example, can contribute to improving the wellbeing of communities through the provision of affordable houses, while the provision of public and private sector facilities such as schools and shopping centres, has the potential to deliver other socio-economic sustainability objectives such as jobs, etc., for communities. The linkages between housing, school building and shopping centres provide an opportunity to deliver various types of regeneration projects. It is believed that different regeneration schemes designed to improve sustainable infrastructure will give additional impetus to the creation of sustainable regeneration and development of an area. The notion that regeneration is about creating places where people want to live and work should mean that a good balance of regeneration projects would have to be achieved to help satisfy this notion (CLG, 2009; Glossop, 2008). It is suggested that the levels of practitioners' involvement in such different types of sustainable regeneration projects can potentially enhance their knowledge and understanding of sustainability features in the pursuit and delivery of different types of sustainable regeneration projects (CLG, 2009).

Research Methodology and Approach

The study adopted mixed method approach (qualitative and quantitative), using semi-structured interview and questionnaire survey to collect data from the key practitioners identified to be involved in the delivery of the three main types of sustainable regeneration projects (housing, public sector project, and private sector commercial project). The central characteristic of a mixed method approach is that the researcher can take both the positivist and interpretivist positions. Thus the mixed research approach embraces both measurable and textual languages, which the researcher utilise to investigate and understand the social issues (Morgan, 2007). Underlying this research method is the recognition of its uniqueness and ability to offer multidimensional research solutions to

humanistic and behavioural phenomena in a manner that one form of research method is unable to do. One significant proposition of the mixed method technique is the diversification of ideas it offers as a concept, coupled with its potential to broaden the understanding of human experiences (Tashakkori and Teddlie, 2010). In advancing the potential benefit argument, Greene (2008) cited triangulation and complementarity as some of the major advantages which are directly associated with the mixed method research approach. According to Bryman (2006) the decision to adopt a mixed method approach must be based on a number of reasons, notable among them include the purpose of the study, the research questions and the type of data required for the study. For instance, Ardalan (2009) argued that much benefit can be achieved through the effective corroboration between these qualitative and quantitative research methodologies. Evidence to date has suggested that the single method approach exclusively, has proved to be inadequate in exploring issues, particularly where the issues are of multifaceted nature, such as those found in the construction industry where the interaction among processes and projects' participants is a key feature, often requiring a substantial amount of procedures. Such defining features of the mixed method provide the foundation for researchers to undertake investigations with what is traditionally seen as incompatible and conflicting paradigms (Morgan (2007). Saunders, *et al*. (2009) suggested that by adopting qualitative and quantitative research methods within the same research framework, practical questions can be addressed simultaneously from different perspectives, leading to a greater confidence in the findings and conclusions. Therefore in line with the mixed method approach, the study conducted semi-structured interviews with twenty-one (21) key practitioners while 193 responses were also received from practitioners who participated in the questionnaire survey phase of the study.

Data Collection Approach

The key practitioners (participants) were selected through a purposive sampling technique from a list of top construction organisations in the UK, with the experience and knowledge of delivering sustainable regeneration projects in the UK. Fifteen construction organisations were selected and contacted initially but only three agreed to participate in the study. To gain access to the participants for the interviews, formal letters and proposals were sent to these three construction organisations for permission to participate in the study. Follow up telephone calls were also made to these construction organisations to further explain the purpose and the context of the study. In an attempt to establish the key practitioners' level of involvement in these three main regeneration projects, face-to-face semi-structured interviews were then conducted with twenty-one (21) key practitioners (7 practitioners from each of the three agreed construction organisations), to ascertain their level of involvement in the delivery of the three main types of sustainable regeneration projects, with each interview lasting for about an hour. Each of the three selected construction organisation was made up of all the seven key practitioners: architect, client's representative, project manager, commercial manager, sustainability manager, regeneration manager, and training/CSR manager. All the interviews were recorded and later transcribed verbatim to allow for readability and subsequent content analysis of the interview data.

This was followed by a questionnaire survey which was designed and administered online through 'SurveyGizmo' software. A closed-ended questionnaire survey was adopted using a 4- point likert scale ('1' representing the best and '4' the worst) to collect data from respondents. This provided the opportunity to obtain a specific set of responses from the respondents (Fellows and Liu, 2003), which then enabled the data to be readily

obtained and analysed. The questionnaire survey was administered through the internet, together with a covering letter explaining the objectives of the study to the selected respondents. The covering letter also provided assurance on issues relating to confidentiality of the respondents (Sarantakos, 2013). In all, a total of three hundred (300) hyperlinks were emailed out to the selected respondents, sampled randomly from the lists of 300 leading construction organisations published by turnover in the 2014 editions of the Building Magazine and New Civil Engineer Magazine in the UK, involved in the delivery of sustainable regeneration projects in the UK. The respondents email addresses were obtained through telephone calls and also a search on the organisations' websites. Pre-survey contacts were then made through telephone calls and emails before the final questionnaire survey was sent out to the respondents. Follow-up emails were sent out and telephone calls were further made two weeks later to remind those who were yet to respond to the questionnaire. This was done to further emphasise the importance of completing the questionnaire on time and also to increase the response rate (Saunders *et al.,* 2009). Overall, within a period of 4 weeks, a total of 193 responses were received, representing a response rate of 64.33% out of the total selected sample of 300. The responses were then downloaded from the software and exported into the Statistical Package for the Social Sciences (SPSS) for the analysis of the data. Table 1 shows the breakdown of the questionnaire distribution, completion rate, and the response rate respectively.

Insert Table 1: Questionnaire survey distribution, completion and response rate.

Organisation/ Category	Questionnaire Distributed	Completed Questionnaire Received	Questionnaire Not Completed	Response Rate
Construction organisation	300	193	107	64.3%
Total (N)	**300**	**193**	**107**	**64.3%**

The questionnaire survey for the study was targeted at the key practitioners involved in the delivery of three types of regeneration projects within their respective construction organisations. The results and statistical breakdown of the key practitioners who responded to the questionnaire survey are shown in table 2.

Table 2 Statistical breakdown of respondents (key practitioners) of the questionnaire survey

Practitioners	**Frequency**	**Percentage**	**Valid Percentage**	**Cumulative Percent**
Architect	29	15.0	15.0	15.0
Client representative	25	13.0	13.0	28.0
Project manager	29	15.0	15.0	43.0
Commercial manager	32	16.6	16.6	59.6
Sustainability manager	27	14.0	14.0	73.6
Regeneration manager	26	13.5	13.5	87.0
Training/CSR manager	25	13.0	13.0	100.0
Total N	**193**	**100.0**	**100.0**	

The results obtained from the 21 key practitioners who participated in the semi-structured interviews are presented in Table 3, while the questionnaire survey results are presented in Table 4. From the analysis of the semi-structured interviews, it emerged that there were primarily two main levels (high and low levels of involvement – the level of key practitioners' engagement as active participants in the discharge of their responsibilities) of practitioners' involvement in the delivery of these projects as shown in Table 3.

Insert Table 3: Interview results of the types of sustainable regeneration projects and level of involvement

Practitioners	**Regeneration project types and level of involvement**					
	Housing		Public sector project		Private sector commercial project	
	High level of involvement	Low level of involvement	High level of involvement	Low level of involvement	High level of involvement	Low level of involvement
Architect	3	-	3	-	2	1
Client representative	3	-	2	1	2	1
Project manager	3	-	2	1	2	1
Commercial manager	2	1	2	1	1	2
Sustainability manager	1	2	1	2	-	3
Regeneration manager	1	2	1	2	1	2
Training/CSR manager	1	2	1	2	-	3
Total N=21	**14 (67%)**	**7 (33%)**	**12 (57%)**	**9 (43%)**	**8 (38%)**	**13 (62%)**

Figures (1-3) indicates a number of practitioners (interviewees) from the three selected organisations whose responses either indicated high or low levels of involvement.

Insert Table 4: Questionnaire survey results of practitioner's level of involvement in main types of sustainable regeneration projects

Regeneration project types	N	High level of involvement (%)	Low level of involvement
Housing Development	193	66.3 (%)	33.7 (%)
Public Sector project	193	60.3 (%)	39.7 (%)
Private Sector Commercial project	193	47.0 (%)	53.0 (%)

Total number (N) and percentages (%) of practitioners (questionnaire survey) whose responses indicated high and low level of involvement

Analysis and Discussion of Results

The results from the semi-structured interviews (Table 3) show that housing-led regeneration is the most involved type of sustainable regeneration projects by key practitioners; followed by public sector projects and private sector commercial regeneration projects, respectively. These results are strongly corroborated by the results

obtained from the 193 respondents who participated in the questionnaire survey phase of the study as presented in Table 4.

A closer examination of Table 3 indicates that 14, representing (67%) of the 21 practitioners who participated in the semi-structured interviews were highly involved in the delivery of housing led regeneration projects, while 7 (33%) of the 21 practitioners have had low level of involvement in delivery of the housing types of regeneration projects. A further examination of Table 3 also shows that, 12 (57%) of the 21 practitioners were highly involved in the delivery of public sector types of regeneration projects, while a good number of practitioners, 9 (43%) of the 21, were also observed to have had a low level of involvement in the delivery of these types of regeneration projects. For private sector commercial projects, the results show that only 8 (38%) of the 21 practitioners were highly involved in the delivery of these types of regeneration projects. A substantial number of practitioners, 13 (62%) were seen to have had low level of involvement in the delivery of the aforementioned types of regeneration projects. In support of the semi-structured interviews results, 66.3% of practitioners who participated in the questionnaire survey were have been highly involved in the delivery of housing-led regeneration projects, followed by 60.3% and 47.0% for public sector projects and private sector commercial projects, respectively. The views of the majority of practitioners who participated in the interviews and questionnaire survey appear to be corroborating the literature behind the evolution of the types of regeneration projects. Evidence from the literature has shown that housing-led regeneration has been a major policy initiative and has played a major part in the provision of affordable housing across the regions in the UK. According to Haran *et al*. (2011), Glossop (2008) and HM Treasury (2007), the UK government over the years has concentrated its regeneration policy and efforts in the affordable housing sector and has made a significant investment in housing regeneration to increasing the housing stock to meet the increasing demand for housing. This position was corroborated by the majority of practitioners (67%) who were interviewed, by indicating that their involvement in housing regeneration projects was mainly due to the importance the UK government has attached to the provision of housing. This result was also confirmed by the results obtained from 66.3% of the respondents who participated in the questionnaire survey. This, in effect, has brought about a lot of housing 'building' contracts than the other types of regeneration projects, in and around the communities. As one of the practitioners noted:

"I think that is probably because of the importance the government has attached to it. Housing seems to be the most obvious regeneration projects you can find around in our cities…"

Works done by Winston (2009) and Dixon (2006) have also identified the need to provide much higher levels of new and affordable housing projects, as the brain behind the UK government's sustainable regeneration strategy. The above result is further supported by recent work done by (Special Economics Research Center Strategies (SERCS) (2011) which suggested that the main focus of the UK's sustainable regeneration strategy has traditionally being the advancement of the housing sector for poorer communities (SERCS, 2011). One other deduction that can be made from the above findings in Tables 3 and 4 is that the high levels at which practitioners were involved in the delivery of housing regeneration was due to the fact that most of the construction organisations the majority of practitioners were working for were mainly involved in the delivery of housing regeneration projects. According to Smith (2006), many of the construction

organisations who are currently involved in regeneration projects have a credible history in the social housing sector. This position was highlighted by one of the practitioners:
"I have spent more than half of my career working for companies who have worked closely with the local and national governments to provide decent and affordable housing regeneration schemes for people…"

While housing is considered as an important aspect and at the heart of regeneration development, it is argued that the provision of housing regeneration projects in itself, cannot be considered in isolation to deliver sustainable regeneration that is needed to meet the growing infrastructural needs of society (Smith, 2006). Housing, together with other types of regeneration projects, form a crucial part of regenerating and ensuring sustainable communities (CLG, 2011). Although housing can be seen to be limited in scope in terms of the provision of sustainable regeneration projects, however, one major benefit that can be associated to practitioners' high levels of involvement in the delivery of housing regeneration projects could be the acquisition of knowledge and expertise in the area of housing regeneration projects. Similarly, it can be said that such levels of involvement could also provide their organisations with the opportunities to develop their capacities and expertise in the area of housing regeneration projects. This was acknowledged by one of the practitioners during the interviews by saying:
"I have developed much of expertise and experience in housing regeneration projects, and my organisation has so much expertise when it comes to housing regeneration…"

It can be deduced that the acquisition of such knowledge and expertise has played a major part towards the formation of organisations/associations such as; the Registered Social Landlords and Homes and Communities Agency organisations who are currently involved in the promotion and delivery of housing regeneration projects in the UK. However, although regeneration activities have focused mainly on the social housing sector, it is believed that the regeneration impact can only be fully and appropriately felt if other types of regeneration projects are considered alongside. Consequently, the focus needs to go beyond the provision of housing-led regeneration projects to include the provisions of other types of regeneration projects.

From the findings in Tables 3 and 4 it is also observed that the private sector commercial projects were the least involved type of regeneration projects by practitioners. The results from the interviews (Table 3) indicate that, while just 8 (38%) practitioners were seen to be highly involved in the delivery of these types of regeneration projects, the majority of practitioners, 13 (62%) were 'rarely' involved in their delivery. The results of the questionnaire survey (Table 4) also show that only 47% of practitioners were highly involved in the delivery of these types of regeneration projects. The low level of practitioners' involvement as per the results is not surprising, since the literature review has indicated that the private sector commercial projects are/were the last types of regeneration projects to be introduced among the three types of regeneration projects in recent times in the UK. Again, it can be inferred that because of their perceived commercial inclinations, a very limited number of these types of regeneration projects can be undertaken by clients and construction organisations and for practitioners to be involved in their delivery. Although seen to be the least involved among the other types of regeneration projects, however, the contributions of these regeneration project types to the development and achievement of sustainable regeneration objectives can be said to be indispensable, hence the need to equally develop these types of regeneration projects.

Doing so would help to create the opportunity for practitioners and their organisations to be 'highly' involved in their delivery.

One other phenomenon that was observed with the practitioners during the interviews was that, while a housing-led regeneration was the dominant regeneration project that majority of practitioners were highly involved, some practitioners were also involved in delivering the other types of the projects. A number of practitioners were not exclusively involved in delivering one regeneration project type. As one of the practitioners indicating his level of involvement in other regeneration projects' types by noting:

"…My responsibilities have not only been limited to housing. I have had some kind of involvement in other regeneration project types…. I have had the opportunity to work on some hospital projects in the past and quite recently, was involved in retail project in the North West…"

In line with the above view, another practitioner commented by saying:
…Yes, I have worked on all kinds of regeneration projects for the past fifteen years I have being with this company. …Although we turn to get more of housing contracts. As a major construction company, we have expertise in all the three projects' types we've been talking about this morning, and we try not to limit ourselves to one regeneration project type.

In addition to the above interview findings, an attempt was also made to ascertain if there were such 'multiple' levels of involvement by practitioners (who participated in the questionnaire survey phase of the study) in the delivery of the three main types of sustainable regeneration projects by conducting (inferential analyses) a Chi-square test on the data. The results obtained in Table 5 showed the chi-square test values of 64.591 for housing development, 139.047 for public sector projects and 41.741 for private sector commercial projects. The Chi-square test results further showed the level of significance (Asymptotic. Sig) was 0.000 (for all the three types of projects), which was less than 0.05 ($0.000 < 0.05$) (Pallant, 2010). As per the above findings in Table 5, it can be observed that, at a significant level of ($0.000 < 0.05$), the levels of practitioners' involvement in the delivery of the three types of sustainable regeneration projects are significant, (as the Asymptotic Significant values obtained was/is 0.000 which is less than 0.05 in each case) (Pallant, 2010). Hence from these results, it could be said that there was a significant association between practitioners' levels of involvement with respect to all the three sustainable regeneration projects' types. This could also mean that some practitioners who were/have been involved in the delivery of housing-led regeneration projects also were/have been involved in the delivery of other two main types of sustainable regeneration projects; and therefore ranked or indicated their involvement in all the three sustainable regeneration projects' types. The involvement of practitioners in the delivery of more than one project types could go a long way to enhance practitioners' knowledge and understanding of various influencing sustainability factors for the delivery of the main types of regeneration projects. The knowledge and expertise acquired through the delivery of these types of regeneration projects could also be used to advise their organisations, policy makers and potential clients who may want to undertake such regeneration projects in the future.

Insert Table 5: Chi-square test of level of practitioners' involvement in regeneration projects

Test Statistics			
	Housing Development	Public Sector project	Private Sector Commercial project
Chi-Square	64.591[a]	139.047[a]	41.741[a]
df	4	4	4
Asymp. Sig.	.000	.000	.000
a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 38.6.			

Conclusion

The findings from both the semi-structured interviews and questionnaire survey have highlighted that housing-led regeneration projects was the type of regeneration projects the majority of practitioners were highly involved in delivering, followed by public sector regeneration projects. The high of level of involvement in delivering housing-led regeneration was attributed to the fact that housing was the predominant regeneration project practitioners' organisations were involved in. In addition, the UK government's regeneration policy, leading to 'heavy' investment in social housing projects has also been seen to have played a significant part in this phenomenon. The findings from the semi-structured interviews further revealed that private sector commercial regeneration projects were least regeneration project practitioners were involved in delivering. These results were also corroborated by questionnaire survey findings. Although seen to be the least involved among the other types of regeneration projects, the authors however, were of the view that in order to achieve sustainable regeneration objectives, it was important that the development of these types of regeneration projects were also given adequate consideration, as doing could help to create the opportunity for practitioners and their organisations to be highly involved in their delivery. It was suggested that the high rate at which practitioners were involved in delivering sustainable regeneration projects could have a significant impact on practitioners' knowledge and understanding of sustainability requirements of sustainable regeneration projects. The authors also believes that the knowledge and expertise acquired through the delivery of these types of regeneration projects could be used to advise their organisations, policy makers and potential clients for future regeneration projects. The study focused on the practitioners' levels of involvement in the delivery of the three sustainable regeneration projects' types in the UK, however, could not explore the level of involvement at various stages of the projects' development. Therefore future studies could also focus on exploring practitioners' level of involvement at the three main stages (early, construction, post construction) of the delivery of the types of regeneration projects.

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