

**Understanding socio-economic sustainability drivers of sustainable regeneration:
An empirical study of regeneration practitioners in UK**

Akotia, Julius¹ and Sackey, Enoch²

*¹University of East London, School of Architecture, Computing and Engineering,
University Way, E16 2RD, London, UK: J.k.akotia@uel.ac.uk*

²SES Engineering Services Ltd, Birmingham, UK: Ensagh@yahoo.co.uk

Abstract

The construction industry has been recognised as a major driver towards the delivery of the UK sustainable regeneration objectives. Several construction organisations have played various roles in their quest to deliver sustainable regeneration projects in line with sustainable development objectives. Yet, to-date the delivery of such sustainable development objectives has continued to be an on-going challenge for these organisations involved in the delivery of regeneration projects. The study adopted an exploratory research approach, using questionnaire survey to collect data from 193 construction organisations/practitioners involved in the delivery of sustainable regeneration projects in the UK. The findings revealed that, majority of construction organisations were promoting the socio-economic sustainability principles to meet their own corporate business objectives. The findings further revealed that majority of practitioners' organisations were integrating socio-economic sustainability principles into their business practices because they believed doing so was the best way to gain advantage over their competitors and remain relevant in their market place.

Keywords: Socio-economic sustainability drivers, construction organisations, sustainable regeneration.

1. Introduction

HM Treasury (2007) defined regeneration as the process of reversing the physical and socio-economic and environmental decay of an area. The concept of regeneration has been a significant issue of sustainable development agenda in the UK since the 1980s (Erbej and Erbas, 2017) and has played a major role in the infrastructural and projects' planning and development within the UK's construction industry. Different construction industry practitioners currently delivering sustainable regeneration projects are seen to be adopting and implementing the social and economic sustainability principles based on their individual understanding, perceptions and interests (Amasuomo *et al.* 2015; Evans and Jones, 2008). It has been acknowledged that a significant number of regeneration initiatives which have been formulated to deliver regeneration projects over the years have been driven based on construction industry practitioners' priorities for the projects (Guzmán, *et al.* 2017). Adopting such practices, according to Guzmán, *et al.* (2017) and Evans and Jones (2008), have undermined many sustainable regeneration initiatives from achieving their desired sustainability objectives. Similarly, the over reliance on environmental drivers has also played a significant part in limiting the integration of social and economic sustainability principles into the mainstream practices of practitioners. Accordingly, the delivery of sustainable regeneration requires a level of sustainability practices and promotion beyond the focus on the current drivers towards the consideration of social and economic sustainability principles of the projects. To achieve this goal means that, practitioners will have to move away from their current practices of delivering regeneration projects to a more 'sustainability focus' one that enables projects to deliver their core socio-economic sustainability objectives. A plethora of literature has documented the linkages between social sustainability and the development of physical structures and well-being of people

(Munzel, *et al*, 2018). It is suggested that social and economic principles are deeply rooted in our community formation, and for that reason, focusing on their core drivers has enormous potential to drive regeneration projects towards the attainment of their sustainability objectives (Communities and Local Government (CLG), 2008). The growing demands on national and local governments to meet the sustainability needs of society through sustainable regeneration initiatives, particularly for deprived communities, makes the call for the delivery of socio-economic regeneration timely. It is believed that meeting society's social and economic sustainability needs is one major means by which society can become truly vibrant and sustainable (Clapham, 2014). Hence, the objective to delivery of sustainability benefits calls for a fundamental change towards the promotion of socio-economic sustainability drivers that make the regeneration projects attain their sustainability objectives. It is also argued that social change can be the determinant of economic change, in that many of the social features of sustainability co-exist with the economic features of sustainability in regeneration (McCartney, *et al*, 2017; CLG, 2010). For example, the provision of education and skills training opportunities for communities can enhance peoples' living in such communities' abilities to secure employment (Armeanu, *et al*, 2018). According to (Armeanu, *et al*, 2018: 2) "education drives more healthy and sustainable lives, and also contributes to a more peaceful world as an outcome of encouraging forbearance amongst nations" The principles underpinning the socio-economic sustainability requirements seek to provide collaboration between individuals' social progress and economic prosperity (Munzel, *et al*, 2018), which are in-tune with the sustainable regeneration agenda (Akotia *et al*, 2016). It is believed that if future regeneration project are to make a greater sustainability impact on communities, then the current regeneration projects' priorities and drivers will have to be altered to meet the socio-

economic sustainability needs of these communities in a sustainable manner (Clapham, 2014; Raco and Henderson, 2009). It has been suggested that a regeneration project which is designed to deliver social and economic sustainability of people is more likely to deliver tangible sustainability benefits (Haran *et al.*, 2011; CLG, 2008).

Literature has shown that there have been numerous studies carried out on various aspects of regeneration in the UK. For example, Lombardi, *et al.*'s (2010) work on conceptualisation of sustainability in regeneration; the Heffron and Haynes' (2011) work on assessment of UK regeneration policy; the Comunian, and Mould's (2014) work on culture-led regeneration projects, etc., however, to date, none of these studies have focused on the socio-economic sustainability drivers of construction organisations in the context of the delivery of sustainable regeneration projects. Consequently, this study was undertaken to explore the socio-economic sustainability drivers of construction organisations/practitioners involved in the delivery of sustainable regeneration projects in the UK. The study aims to contribute to the sustainable regeneration discourse, in particular, the delivery of socio-economic sustainability aspects of sustainable regeneration project projects in the UK. The key question the study seeks to address is: what are the main socio-economic sustainability drivers that are impelling construction organisations to promote sustainability in the delivery of sustainable regeneration projects in the UK? The authors are of the view that the findings of the study will have a significant impact on the policy formulation and delivery of socio-economic sustainability aspects of sustainable regeneration projects. Its greatest contribution is to provide an opportunity for policy makers to better understand the current social and economic sustainability drivers of major construction organisations who are involved in the delivery of sustainable regeneration projects in the UK. The paper starts by reviewing literature on socio-economic sustainability

drivers, followed by research methodology, data analysis and discussion of the findings and draws a conclusion.

2. LITERATURE REVIEW

Sustainable Regeneration Drivers

The construction industry has been recognised as a major driver in the delivery of the UK sustainable development and regeneration agenda (Lynch and Mosbah, 2017; DBIS, 2013). The UK government's sustainable development strategy to deliver sustainable construction (SDC, 2003) set the agenda and challenged the construction industry to drive its operations in a manner that delivers sustainable products to achieve the sustainable development and regeneration objectives. The industry is being called upon to shift from its traditional way of delivering sustainability projects to a more modernised one which will ultimately lead to improve the sustainability performance of their projects (DBIS, 2013). Delivering the objective of sustainable construction practices across the industry is a challenging process which requires a paradigm change if the industry is to achieve sustainable construction and remain competitive.

Traditionally, the construction industry has been driven by cost, time and quality objectives (Cruickshank and Fenner, 2007), and the consideration of sustainability adds to these objectives. Striving to achieve sustainable construction calls for the adoption of sustainability practices in a manner that makes projects achieve their socio-economic benefits for society and the organisations providing the projects (Shen et al., 2010).

Promoting the concept of sustainable construction also has enormous potential to drive the regeneration process towards the attainment of sustainable development objectives.

It has been argued that many sustainable regeneration features share many goals with sustainable development features (Turcu, 2012). Hence, the delivery of sustainable

regeneration can be the determinant towards the attainment of sustainable development objectives.

The UK Labour government's White Paper published in 2000 on community renewal which sets out the government's plans to drive community regeneration recommended the need to improve the social and economic sustainability of society with sustainable regeneration initiatives (CLG, 2008). Generally, the performance of regeneration projects is demonstrated and driven by many of the social and economic sustainability opportunities created by these regeneration projects. In a series of stakeholder consultation events reported in CLG (2008), the majority of participants suggested that socio-economic development should be seen as a key driver for sustainable regeneration outcomes. The participants emphasised the need for sustainable regeneration to pay a greater attention to deliver tangible and sustainable benefits in a holistic manner. It has been acknowledged that a significant number of regeneration initiatives, which have been formulated to deliver regeneration projects, have been driven by a number of factors (CLG, 2010). Some influencing factors reported to be driving most practitioners' organisations in promoting sustainability in the UK include: incentive mechanisms, government policy frameworks and regulations on green buildings (Turcsanyi and Sisaye, 2013; Häkkinen and Belloni, 2011). Empirical work by Pitt et al., (2009), which collected data from 200 Royal Institute of Chartered Surveyors (RICS) members in the UK, has also found financial incentives, building regulations, client awareness and demand as the most influential factors that were driving many construction industry organisations to promote sustainability on their projects. Other drivers identified by Turcsanyi and Sisaye (2013), in line with Pitt et al.'s (2009) findings for adopting sustainability principles include; image/reputation improvement, and meeting ethical

and moral obligations, as well as an improvement in the overall economic fortune of their organisations. For many construction organisations involved in the delivery of regeneration projects in the UK, their socio-economic regeneration strategies have focused on financial gains (Henderson, 2011). In a study conducted by Smith and Sharicz, (2011) on organisation sustainability and profitability, nearly 51 percent of respondents who took part in the study believed that adopting sustainability into their organisations' business operations would help build the economic future of their organisations. Pursuing such sustainability principles, Okoro, (2012), believed will enable such organisations to improve their image as 'sustainable organisations', which in turn, will enable them to increase their profitability and remain in business for a long time. Integrating the core elements of sustainability in regeneration processes and practices offers a considerable opportunity for construction organisations to run a responsible business. A Corporate Social Responsibility (CSR) study carried out by Turcsanyi and Sisaye (2013: 16) suggested that the overall economic performance of an organisation 'can be sustained for a long time if economic performance is effectively integrated with social and environmental goals into business strategic plans'. In support of the above work, Cheng et al., (2014), Mason and Simmons (2014) indicated that, by integrating CSR and other sustainability objectives into the organisation's business practices, such organisations stand a better chance of enhancing its performance economically, and also is more likely to gain competitive advantage over its compatriots in the market place. Adopting such CSR sustainability principles are now being seen as a means by which many organisations are promoting their social and economic sustainability objectives (Pitt et al, 2009). Similarly, it is argued that adopting CSR principles in the form of education and training/apprenticeships, job opportunities etc., on regeneration projects could equally be seen as a means of promoting ethical and

moral obligations towards the society (Okoro, 2012). A round table report on CSR by the European Multi-stakeholder Forum (2004), has identified many small and medium enterprise (SMEs) organisations who have integrated CSR principles into their business practices as a result of the ethical values and beliefs held by the owners and employees of the organisations. Apparently, integrating sustainability principles into business plans for many organisations would enable them to ‘position and differentiate themselves as ethically responsible and committed in order to increase their global competitiveness’ (Okoro 2012: 684). Moreover, obtaining such competitive advantage, would enable such organisations to continue to win future contracts from their clients (Okoro, 2012; Kraus and Britzelmaier, 2012). CSR principles of sustainability in construction business terms is about achieving a long term competitive advantage and economic benefits for construction organisations and their stakeholders involved in the delivery of the projects (Shen et al., 2010). Adopting sustainability principles, most organisations believe can lead to them building their reputations, enabling them to remain viable and increase their profit margins (Turcsanyi and Sisaye 2013; Smith and Sharicz, 2011). According to Weber (2008), promoting good sustainability practices could potentially lead to cost savings and reductions in financial risk for the organisations in the long term. Similarly, it is suggested that the achievement of a higher standard in sustainability performance of an organisation can influence the attraction and retention of employees (Turcsanyi and Sisaye 2013). A good organisational reputation and image can boost the morale of employees working for such organisations. Lankoski, (2008: 540) agreed to the above view by highlighting that with employees, sustainability practices may result in the organisations ‘ability to hire and retain high-quality staff as well as improve worker health and morale’.

It is also argued that the demands from clients and their stakeholders can be a determining factor for promoting sustainability principles by organisations. This is because clients and their stakeholders are the ones who initiate and provide the financial resources to undertake these projects. The Green Paper report of the Commission of the European Communities, (CECGP, 2001: 3) has found a number of organisations operating within the European Union to be promoting their sustainability principles ‘as a response to a variety of social, environmental and economic pressures’ from their clients and other key stakeholders. It is asserted that the adoption of sustainability for most of these projects has been determined, and in many cases dictated by the requirements and demands from clients and their stakeholders (Akadiri et al., 2012). Highlighting on this point, Turcsanyi and Sisaye, (2013) further argued that with the current economic crisis, clients and other key stakeholders are increasingly becoming cautious and are demanding more details and transparency from organisations before entering into any form of investment or partnership with them. The summary of socio-economic sustainability drivers and the literature sources are shown in table 1. The next section describes the methodology used for the study.

Table 1: Socio- economic sustainability drivers and the literature sources

| Sustainable regeneration drivers | Literature source |
|--|---|
| Enhancement of Reputation as a ‘Sustainable’ Organisation (ERSO) | Cheng <i>et al.</i> , 2014; Turcsanyi and Sisaye 2013; Okoro 2012; Kraus and Britzelmaier, 2012; Smith and Sharicz, 2011; Pitt <i>et al.</i> , 2009; Lankoski, 2008; Weber, 2008; |
| Competitive advantage (CA) | Okoro 2012; Kraus and Britzelmaier, 2012; Henderson, 2011; Häkkinen and Belloni, 2011; Shen |

| | |
|---|--|
| | <i>et al.</i> , 2010; Lankoski, 2008; Weber, 2008; |
| Client requirement (CR) | Turcsanyi and Sisaye, 2013; Akadiri <i>et al.</i> , 2012; Kraus and Britzelmaier, 2012; Häkkinen and Belloni 2011; Pitt <i>et al.</i> , 2009; Lankoski, 2008 |
| Legislation and legal requirement (LLR) | Turcsanyi and Sisaye, 2013; Häkkinen and Belloni, 2011; CLG, 2010; Pitt <i>et al.</i> , 2009; Lankoski, 2008; |
| Ethical and moral obligation (EMO) | Mason and Simmons, 2014; Turcsanyi and Sisaye, 2013; Okoro, 2012; |
| Stakeholder demand (SD) | Turcsanyi and Sisaye, 2013; Kraus and Britzelmaier, 2012; Häkkinen and Belloni 2011; Pitt <i>et al.</i> , 2009; Lankoski, 2008 |
| Commitment to sustainability objectives (CSO) | Turcsanyi and Sisaye 2013; Smith and Sharicz, 2011; Häkkinen and Belloni, 2011 |
| Corporate social responsibility (CSR) | Turcsanyi and Sisaye, 2013; Shen <i>et al.</i> , 2010; Pitt <i>et al.</i> , 2009; |

3. RESEARCH METHOD AND DATA ANALYSIS

The construction management researchers have long recognised the importance and use of quantitative research methodology for their studies (Fellows and Liu, 2003). Indeed, a quantitative research with a questionnaire survey as a main data collection technique has been extensively utilised to undertake construction project related research over the past decades with credible outcomes (Fellows and Liu, 2003). Saunders *et al.*, (2009) suggested that the adoption of a questionnaire technique allows the researcher to exercise some level of control over the data collection process. And such control mechanisms enables the researcher to obtain findings that can be considered as

representative of the entire population (Saunders *et al*, 2009). Due to the versatile nature of questionnaire survey study, it is considered to be ‘more suited to assembling mass information at a minimum expense’ and also within the shortest possible time (Naoum, 2007: 53). To begin the data collection process, the major construction organisations involved in the delivery of sustainable regeneration projects/programmes in the UK were identified and selected from the list of 300 leading construction organisations published in the 2014 editions of the Building Magazine and New Civil Engineer Magazine in the UK. The selected organisations were then contacted through telephone calls and emails for invitation to participate in the study. This initial contact was also meant to seek their consent, and explain the objectives of the study to these organisations. A total of 300 questionnaires were then designed and emailed to these selected organisations who have indicated their readiness to participate in the study. A 5-point Likert scale (“1” representing the “best” and “5” the “worst”) questionnaire survey approach was adopted with closed-ended questions to allow for specific information to be obtained from respondents (Saunders *et al*, 2009). The questions were based on the aim of the study and were kept short and clear to enhance understanding and the response rate from respondents. The questionnaire was divided into two parts: the first part collected information on practitioners’ roles (table 3) while the second part asked practitioners to provide a rating of the importance they attached to the socio-economic drivers in the delivery of sustainable regeneration projects (table 4). Consequently, within a period of 4 weeks of the data collection process, a total of 193 responses were received, representing an overall response rate of 64.33%. Tables 2 and 3 show the breakdown of the questionnaire distribution, completion rate, response rate and the results of the statistical breakdown of respondents/practitioners respectively, who participated in the study. Table 4 presents the questionnaire survey results of the

socio-economic sustainability drivers. The next section presents the data analysis. For purpose of analysis of this study, the term variables and factors are used interchangeably to mean the same thing.

Table 2: 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% |

Table 3: Results and statistical breakdown of respondents/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 | |

Table 4: Questionnaire survey results of the socio-economic sustainability drivers.

| Drivers (Percentage) | Very Important (VI) | Important (I) | Fairly important (FI) | Slightly important (SI) | Not important at all |
|---|-------------------------|---------------|--------------------------|-------------------------|----------------------|
| Clients requirements (CR) | 25.4% | 37.8% | 25.9% | 9.3% | 1.6% |
| | (VI)+(I) = 63.2% | | (FI)+(SI) = 35.2% | | |
| Competitive advantage (CA) | 38.3% | 47.2% | 5.7% | 6.2% | 2.6% |
| | (VI)+(I) = 85.5% | | (FI)+(SI) = 11.9% | | |
| Commitment to sustainability objectives (CSO) | 21.7% | 31.5% | 23.9% | 21.3% | 1.6% |
| | (VI)+(I) = 53.2% | | (FI)+(SI) = 45.2% | | |
| Corporate social responsibility (CSR) | 22.2% | 33.1% | 29.6% | 13.5% | 1.6% |
| | (VI)+(I) = 55.3% | | (FI)+(SI) = 43.1% | | |
| Enhancement of reputation as a | 49.7% | 37.3% | 6.3% | 3.1% | 3.6% |

| | | | | | |
|---|-------------------------|-------|--------------------------|-------|-------|
| 'sustainable' organisation (ERSO) | (VI)+(I) = 87% | | (FI)+(SI) = 9.4% | | |
| Ethical and moral obligation (EMO) | 21.3% | 30.8% | 22.5% | 21.8% | 3.6% |
| | (VI)+(I) = 52.1% | | (FI)+(SI) = 44.3% | | |
| Legislation and legal requirement (LLR) | 21.4% | 25.4% | 11.9% | 21.8% | 19.5% |
| | (VI)+(I) = 46.8% | | (FI)+(SI) = 33.7% | | |
| Stakeholders demands (SD) | 19.2% | 31.0% | 16.1% | 30.6% | 3.1% |
| | (VI)+(I) = 50.2% | | (FI)+(SI) = 46.7% | | |

Data Analysis

Exploratory factor analysis (EFA) was undertaken using Statistic Package for Social Science software to explore the data obtained from respondents. Factor analysis is a useful tool when the researcher wants to explore variables relationships that are complex such as socio-economic sustainability factors. According to Dumitrescu, *et al*, (2013: 470), the “first step in applying factor analysis is to check the existing relationships between the considered variables by computing the values of the Pearson simple correlation coefficients”. Yong and Pearce, (2013) identified two main techniques for factor analysis: Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). They noted that the use of CFA techniques was mainly suitable to “confirm hypotheses” as it made use of “path analysis diagrams to represent variables and factors”, whereas EFA was useful in uncovering “complex patterns by exploring the dataset and testing predictions” (Yong and Pearce, 2013: 79). Therefore in line with the EFA objectives, Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were then conducted to ascertain the suitability and choice of factor analysis. The results obtained (table 5) showed that the KMO Measure of Sampling value was 0.892, while the Bartlett's Test of Sphericity revealed a significant value of 978.278, $p < .000$, indicating a significance level of validity of the data collected, hence making it suitable to conduct the factor analysis. Williams, *et al*, (2010)

noted that, for the sampling of data to be considered adequate, KMO values should range between 0.8 and 1. The Bartlett's Test of Sphericity on the other hand should be significant ($p < .05$) to indicate the validity and suitability of the data.

Table 5: KMO and Bartlett's Test results

KMO and Bartlett's Test

| | | |
|--|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .892 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 978.278 |
| | df | 28 |
| | Sig. | .000 |

Pearson correlation coefficient was further conducted to check if there were patterned relationships among the variables. Pearson correlation coefficient (r) is useful if the researcher is interested in checking pattern relationships between the variables. It is considered to be statistically significant at $P < 0.05$ (Sig. 1-tailed) and correlation coefficient ranging between -1 to 1. Yong and Pearce, (2013) opined that the correlation coefficient ($r < +/- .30$) shows relatively low patterned relationships while the correlation coefficient above ($r < +/- .50$) indicates a strong patterned relationship amongst the variables. By analysing the output (table 6), it can be observed that, all the variables are statistically significant, at $p = 0,000$. The (r) values obtained (table 6) show that there is a positive correlation amongst the variables. Specifically, it can be observed that there is correlation between ERSO and CA (.574), CR and CSR (.506), and strong correlation between CSR and CSO (.756), EMO and LLR (.746), etc. For the fact that all the correlation coefficient values are positive indicates that changes/effects on one variable have impact on other variables (Field, 2012). The matrix determinant score of .006 (table 6) is above the rule of thumb of .00001, hence indicating an absence of multicollinearity (Yong and Pearce, 2013). This also implies that the “questionnaire

questions” are fairly well correlated and no questions should be eliminated from the analysis.

Table 6: Correlation Matrix results

| | | Correlation Matrix ^a | | | | | | | |
|--------------------|---------------------|---------------------------------|-------|-------|-------|-------|-------|-------|-------|
| | | ERSO | CA | CR | CSR | CSO | SD | EMO | LLR |
| Correlation (r) | ERSO | 1.000 | .574 | .393 | .409 | .384 | .351 | .301 | .184 |
| | CA | .574 | 1.000 | .354 | .327 | .338 | .272 | .214 | .137 |
| | CR | .393 | .354 | 1.000 | .506 | .579 | .560 | .537 | .574 |
| | CSR | .409 | .327 | .506 | 1.000 | .756 | .650 | .725 | .680 |
| | CSO | .384 | .338 | .579 | .756 | 1.000 | .712 | .748 | .764 |
| | SD | .351 | .272 | .560 | .650 | .712 | 1.000 | .679 | .741 |
| | EMO | .301 | .214 | .537 | .725 | .748 | .679 | 1.000 | .746 |
| | LLR | .184 | .137 | .574 | .680 | .764 | .741 | .746 | 1.000 |
| | Sig. (1- tailed) | ERSO | | .000 | .000 | .000 | .000 | .000 | .000 |
| CA | | .000 | | .000 | .000 | .000 | .000 | .001 | .000 |
| CR | | .000 | .000 | | .000 | .000 | .000 | .000 | .000 |
| CSR | | .000 | .000 | .000 | | .000 | .000 | .000 | .000 |
| CSO | | .000 | .000 | .000 | .000 | | .000 | .000 | .000 |
| SD | | .000 | .000 | .000 | .000 | .000 | | .000 | .000 |
| EMO | | .000 | .001 | .000 | .000 | .000 | .000 | | .000 |
| LLR | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | |

a. Determinant = .006

Also, to determine the significant variables for a meaningful interpretation and analysis of the results, data extraction and rotation was carried out (Yong and Pearce, 2013).

Table 7 shows the analysis conducted to determine the number of significant factors obtained from respondents. It shows the total variance of the initial Eigenvalues, the

extracted sums of squared loadings and the rotated sums of squared loadings of all the factors using the principal components method of extraction. The results (table 7) of the eight factors/drivers extracted show a cumulative percentage of variance of the first two factors: ERSO and CA with eigenvalues greater than 1. The results further show that the first two factors had a greater percentage of variance apportioned to them than the remaining six factors. Specifically, it can be seen that, the first two factors; ERSO and CA account for 75% of the total (in all of the variables together) variability of the extracted variables. This finding is largely collaborated by the scree plot graph shown in figure 1. From these findings, it can be concluded that only the first two factors: ERSO and CR account for most of the total variability in the data, and hence be concluded that these “two socio-economic sustainability drivers” have the greatest impact on majority of practitioners involved in the delivery of regeneration projects who participated in the study.

Table 7: Total Variance Explained results.

| Variable/ factor | Total Variance Explained | | | | | | | | |
|---------------------|--------------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| ERSO | 4.694 | 58.672 | 58.672 | 4.694 | 58.672 | 58.672 | 4.167 | 52.086 | 52.086 |
| CA | 1.314 | 16.421 | 75.092 | 1.314 | 16.421 | 75.092 | 1.841 | 23.007 | 75.092 |
| CR | .536 | 6.704 | 81.796 | | | | | | |
| CSR | .426 | 5.321 | 87.117 | | | | | | |
| CSO | .353 | 4.416 | 91.533 | | | | | | |
| SD | .256 | 3.205 | 94.738 | | | | | | |
| EMO | .235 | 2.934 | 97.673 | | | | | | |
| LLR | .186 | 2.327 | 100.000 | | | | | | |

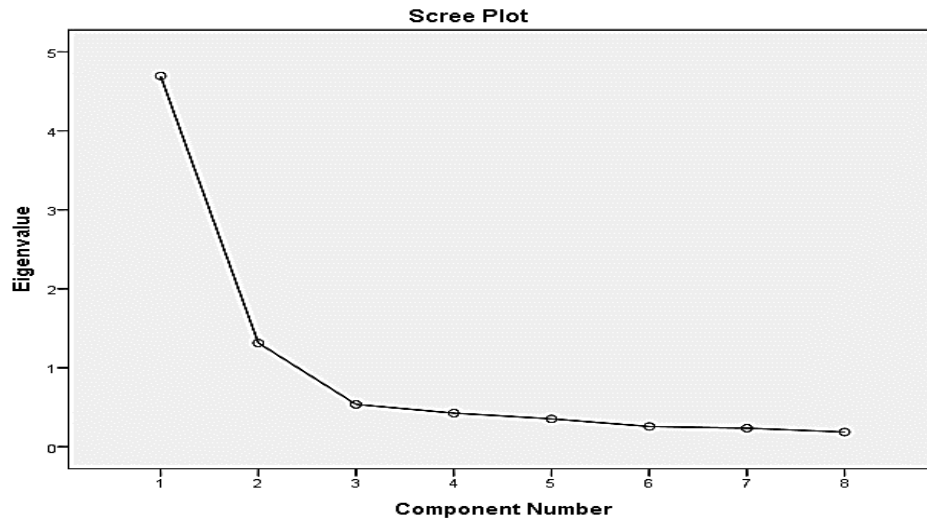


Figure 1: Scree Plot graph

To ascertain the importance practitioners have given to the socio-economic sustainability drivers and also to corroborate findings obtained through the EFA, in achieving the aim sets out for the study, a further analysis was carried out. The mean score for each driver was computed by the following formula (1):

$$MS = \frac{\sum (f \times s)}{N}, (1 \leq MS \leq 5) \quad (1)$$

Where f = frequency of response to each rating (1-5) for each driver; s = score given to each factor by the respondents which ranges from 1 to 5, where, 1 very important and 5, not important; MS = mean score, and N = total number of response concerning the driver.

For further insight, the above descriptive analysis was supported by computing the Relative Importance Index (RII) values to obtain and rankings and the level of importance of the socio-economic sustainability drivers, using equation 2:

$$RII = \frac{\sum (W)}{A * N}, (0 \leq RII \leq 1) \quad (2)$$

Where W = weight given to each driver by the respondents ranges from 1 to 5; where ‘1’ represents very important and ‘5’ not important; A= highest weight (i.e. 1 in this case), and N = total number of respondents.

The mean scores obtained were compared with the RII value rankings obtained for the drivers in order of importance for the analysis (Table 8). Computing the RII values made it possible to cross-compare the relative importance of each socio-economic sustainability driver against the mean scores obtained in the descriptive analysis. The higher the mean score and RII value, the higher the level of importance attached to the driver by respondents.

Table 8: Mean scores, RII values and rankings.

| Socio-economic sustainability drivers | N | Min | Max | Mean Score | RII | Rank |
|--|----------|------------|------------|-------------------|------------|-------------|
| Enhancement of Reputation as a ‘Sustainable’ Organisation (ERSO) | 193 | 1 | 5 | 2.76 | 0.86 | 1 |
| Competitive advantage (CA) | 193 | 1 | 5 | 2.67 | 0.74 | 2 |
| Client requirement (CR) | 193 | 1 | 5 | 2.61 | 0.70 | 3 |
| Corporate social responsibility (CSR) | 193 | 1 | 5 | 2.55 | 0.65 | 4 |
| Commitment to sustainability objectives (CSO) | 193 | 1 | 5 | 2.44 | 0.53 | 5 |
| Ethical and moral obligation (EMO) | 193 | 1 | 5 | 2.24 | 0.37 | 6 |
| Stakeholders demands (SD) | 193 | 1 | 5 | 1.88 | 0.29 | 7 |

| | | | | | | |
|---|-----|---|---|------|------|---|
| Legislation and legal requirement (LLR) | 193 | 2 | 5 | 1.74 | 0.22 | 8 |
|---|-----|---|---|------|------|---|

4. DISCUSSION OF THE RESULTS

The study presents the discussion of the findings of the eight (8) socio-economic sustainability drivers of sustainable regeneration obtained from literature (table 1) and regeneration practitioners in the UK. The discussion is presented based on the rankings and the level of importance (table 8) given to the drivers by practitioners.

4.1 Enhancement of Reputation as a ‘Sustainable’ Organisation

The results obtained reveal that all the eight socio-economic sustainability drivers presented to practitioners have some level of importance and impact on the promotion and delivery of sustainable regeneration projects and programmes in the UK.

From the results obtained (Table 8), with mean value of 2.76 and RII =0.86,

‘Enhancement of Reputation as a Sustainable Organisation’ was ranked as the first most important socio-economic sustainability driver among other drivers presented to practitioners. The literature review on sustainability provides a range of empirical evidence that corroborated these results. The works of authors like Cheng *et al.* (2014); Turcsanyi and Sisaye (2013); Kraus and Britzelmaier (2012), have argued that the majority of organisations were adopting and implementing sustainability principles as a means of improving their reputations, for them to remain in business for a long time.

From the findings it can be suggested at least, the majority of practitioners who are currently delivering sustainable regeneration projects believed that there is a good business case for their organisations to adopt and implement social and economic sustainability principles on their projects. They believed that getting such ‘image

branding' is the best way to continue to appeal to their potential clients as a 'sustainable organisation'. This belief is premised on the fact that, currently, most of the local and national governments' contracts are being awarded to organisations that are seen to be delivering such sustainability benefits for communities. Many misunderstandings associated with the current promotion of sustainability principles for regeneration projects can be attributed to practitioners' interests and prioritisation of sustainability benefits for their organisations. Such vested interests and approaches have contributed considerably to the difficulties inherent in the current practices and delivery of socio-economic sustainability of regeneration projects. A study conducted by Häkkinen and Belloni (2011) also found a linkage between the practitioners' drive to pursue sustainability issues and the potential resulting outcomes for their organisations. However, it is suggested that 'organisations which have a reputation for trading fairly', and respecting and protecting the interests of other stakeholders, are more likely to attract public services and support for their activities (DETR, 2000: 14).

4.2 Competitive Advantage

With a mean value of 2.67, and RII= 0.74, *Competitive Advantage* was ranked as the second most important socio-economic sustainability driver by practitioners. The quest for many construction organisations to adopt and implement sustainability principles on their regeneration projects can be dictated by the notion of obtaining competitive advantage over their competitors. A further review of the results (table 4) shows that of the 193 practitioners who participated in the study, over 38% of them were of the view that gaining 'competitive advantage' was very important driver, while only 2.6% of them felt that it was not an important driver for them to promote the socio-economic sustainability principles on their regeneration projects. The results further suggests that over 85% of practitioners either believed that gaining competitive advantage was very

important or important, compared to just 11.9% who believed that it was either fairly important or slightly important driver for them. Drawing from the above findings, it can be observed that the majority of the current practitioners who are involved in the delivery of sustainable regeneration projects are motivated to promote sustainability because they believed that by doing so, it will enable them to remain competitive in their market place. Literature on sustainability and regeneration provides a range of empirical evidence that corroborated these results in which gaining competitive advantage has also been identified as a major driver for most private organisations aligning their social and economic sustainability agenda with their business operations (Henderson, 2011). According to Henderson (2011), the idea of gaining competitive advantage has been more often the goal of private sector practitioners looking to maximise their returns by outperforming their competitors in some key areas of their activities. Other authors like Kraus and Britzelmaier (2012); Häkkinen and Belloni (2011); and Lankoski (2008), believed that gaining such a competitive advantage over competitors is a major driver behind many of the organisations' attempts to promote sustainability principles in their business strategies. However, focusing on obtaining competitive advantage can have long term sustainability implications for regeneration projects. In an attempt to obtain a competitive advantage, practitioners may be tempted to adopt short term practices (cut corners especially during the tender stages) to win over their competitors, and this may potentially result in a long term negative impact on the achievement of the socio-economic sustainability benefits of the projects. Such practices may also lead to concentration on 'winning more contracts' to increase turnover and profit margins for practitioners' organisations. It is believed that it is only when practices that are adopted and implemented, focus on such core socio-economic sustainability principles, that a number of practical problems associated with the current

delivery of socio-economic sustainability of regeneration projects can be overcome (Adamowicz, 2003).

4.3 Clients' Requirements

In the context of promoting the sustainable regeneration projects, clients and their requirements can play a major role. While clients' requirements are crucial in ensuring that projects which are delivered meet their objectives, clients' requirements can also determine the delivery of other objectives such as sustainability. They can provide a strong driving force behind the approaches and practices adopted and implemented by practitioners. For example, clients who may require their projects to be completed within a certain time frame will require practitioners to meet their time requirements. This will also call for the adoption of and implementation of practices that could lead to practitioners making a trade-off between other clients' requirements, such as cost, quality and sustainability. It has generally been argued that clients' requirements are essential requirements which cannot be ignored by practitioners who have undertaken to deliver on those requirements. From the study, the findings reveal that '*Clients' Requirement*' was the third most important socio-economic sustainability driver ranked with a mean value of 2.61 and RII = 0.70. It was further observed (table 4) that 25.4% of practitioners were of the view that "clients' requirements" was very important driver, compared to only 1.6% who indicated that it was not a driver for them. The results further suggested that over 63% of practitioners either consider "clients' requirements" as very important or important driver, compared to 35.2% who either consider this driver as fairly important or slightly important to promote socio-economic sustainability principles on their regeneration projects. The findings lend support to the works of Akadiri *et al.* (2012); Kraus and Britzelmaier (2012). In their works, they sought to suggest that majority of organisations who were found to be promoting sustainability

principles were doing so because their contracts required them to do so. Within the construction industry, for example, clients are the ones who generally initiate, provide the financial resources and also decide what they expect from their projects. Hence, their requirements can play a key role in determining the sustainability principles they want to be adopted and implemented by practitioners involved in the delivery of their projects. Clients can be instrumental in influencing practitioners they hire to deliver their projects, to adopt and implement socio-economic sustainability principles on their regeneration projects. However, this can only be the case when clients who are undertaking such regeneration projects, understand sustainability issues themselves and are fully aware of the long term benefits to them and their stakeholders. Equally, practitioners who are involved in undertaking the projects should also be seen not only to be 'reacting' to meeting such clients' requirements, but they should also be prepared to act on practices that they truly believe will enable them deliver the socio-economic sustainability benefits, regeneration projects are required to deliver.

4.4 Corporate Social Responsibility (CSR)

CSR was ranked the fourth most important socio-economic sustainability, obtaining a mean score of 2.55, and RII = 0.65. The promotion of sustainability principles calls for practitioners to fulfil their corporate social responsibility (CSR) obligations. Delivering sustainable regeneration also places an important emphasis on a reasonable distribution of socio-economic sustainability benefits to all the stakeholders concerned, although the primary objective of any organisation is profits making, companies can at the same time contribute to sustainability objectives by integrating corporate social responsibility into their core corporate strategy (CECGP, 2001). It is suggested that delivering the CSR requirements for regeneration projects provides one crucial means of building a 'regenerated' society (Shen *et al.*, 2010). From the results (table 4), out of the 193

practitioners who participated in the study, 22.2% of them responded that CSR was a very important driver for them, compared to only 1.6% who did not consider CSR as a driver for adopting and implementing social and economic sustainability principles on their regeneration projects. The results also suggest that over 55% of practitioners consider CSR to be either 'very important or important' driver, compared to 43.1% who either consider CSR to be fairly important or slightly important driver towards the promotion of the socio-economic sustainability principles on the regeneration projects. These findings show a good indication of practitioners' organisations willingness to promote socio-economic sustainability principles on their regeneration projects. The above findings obtained also support the views of Pitt *et al.* (2009), in which they contended that the organisations who were committed to promoting sustainability practices were adopting CSR as a way of achieving their sustainability objectives. Many such organisations were not only mentioning sustainability in their mission statements on their websites, but were genuinely giving greater attention to sustainability issues, by promoting the socio-economic sustainability principles through the creation of jobs and other skills development programmes. In the works of Häkkinen and Belloni (2011) they pointed out that the organisations which were genuinely committed to promoting the shared goals and benefits of sustainability principles were more likely to remain relevant, increase their turnover and achieve long term economic growth.

4.5 Commitment to Sustainability Objectives

With mean score of 2.44, and RII = 0.53, '*Commitment to Sustainability Objectives*' was ranked the fifth out of the eight socio-economic sustainability drivers presented to practitioners. Of crucial importance for promoting the socio-economic sustainability on sustainable regeneration projects is the attitude and commitment required from practitioners. The goal to fully embrace the sustainability principles requires from

practitioners to fully commit themselves to sustainability principles. Further examination of table 4 reveals that of the 193 practitioners, 21.7% have indicated that 'commitment to sustainability objectives' was very important driver, compared to only 1.6% of them who did not consider it as an important driver at all towards the promotion of socio-economic sustainability factors on their projects. Similarly, the results also show that a little over 53% of practitioners either consider the 'commitment to sustainability objectives' as very important or important driver, compared to about 45% who either consider it as fairly important or slightly important driver towards the adoption and implementation of socio-economic sustainability on their projects.

Generally, the performance of sustainable regeneration projects is demonstrated through the interest and commitment which is attached to the sustainability deliverables by practitioners who are involved in the delivery of the project. Without such commitment, it would be very difficult, if not impossible to genuinely and effectively promote the core principles of sustainability in any particular regeneration project, to realise its potential benefits. It is widely argued that commitment from the top management of an organisation can be a major driving force towards the adoption of sustainability into an organisation's practices (Turcsanyi and Sisaye 2013). For sustainable regeneration, such commitment requires that practitioners commit their efforts and resources in a manner that transcend the commitment usually given to the delivery of 'traditional' construction projects. With the right attitude and commitment, practitioners will be able to prioritise the key social and economic sustainability deliverables beyond any other consideration or constraints associated with the project. It is believed that regeneration projects, for instance, would achieve greater sustainable impacts when genuine commitment is obtained from the top management of construction organisations, and when they are truly committed to championing its core principles on the projects. In most cases, the

commitment to adopt and implement sustainability principles on sustainable regeneration projects has largely been influenced by the cost perception which is usually associated with sustainability (Pitt *et al.*, 2009). This perception to a very large extent, has undermined practitioners' drive to fully promote sustainability factors on their regeneration projects. It can also be assumed that the lack of adequate commitment demonstrated by some practitioners could be due to the conventional way successes of an organisation's performances are assessed. Usually, organisations are seen to be successful when they have made enough profits from their business practices. Hence, many such practitioners who want to be seen as 'successful' will be more inclined to promote business practices that will enable their organisations to make profits. Authors like Smith and Sharicz (2011) have admonished organisations, not to only take into account the profit-oriented business practices of their operations, but adopt and implement practices that help to deliver the core principles of sustainability of the projects.

4.6 Ethical and Moral Obligation

The principles underpinning the delivery of socio-economic sustainability for regeneration projects aim to promote a common goal between regeneration practitioners and their beneficiaries. It is also said that ethical and moral reasons can serve as a driver for practitioners to adopt and implement sustainability principles on their sustainable regeneration projects. With a mean score of 2.24 and RII = 0.37 '*Ethical and Moral Obligations*' was considered and ranked the sixth most important socio-economic sustainability driver by practitioners who participated in the study. Specifically the findings obtained (table 4) reveals that, 21.3% of the 193 practitioners who participated in the study indicated that 'ethical and moral obligations' was very important driver, while only 3.6% were of the view that it was not an important driver for them.

Furthermore, 52.1% of practitioners either believed that ‘ethical and moral obligations’ was very important or important driver, compared to 44.3% who either considered it as fairly important or slightly important driver. It is often the case of many commercially minded organisations to focus on commercial aspects and, hence, tend to neglect their ethical and moral aspects which enjoin them to promote the socio-economic sustainability factors on their projects (Rickey and Houghton, 2009). The principles underlying the socio-economic sustainability requirements for sustainable regeneration projects require that practitioners deliver the projects in a manner that promotes society’s social and economic prosperity. For example, by adopting such socio-economic sustainability principles to promote job and apprenticeships opportunities, etc., then that organisation can be seen to be discharging its corporate ethical and moral obligations for society (Mason and Simmons, 2014; Okoro, 2012). A significant progress towards the delivery of sustainable regeneration benefits can be achieved when practitioners are inclined to discharge such ethical and moral obligations towards the promotion of the sustainability concept on their projects. The United Nations, for instance, has underscored the need for organisations to pursue such ethical and moral obligations in the discharge of the sustainable development goals for the communities (United Nations, 2010). From the perspective of delivering sustainable regeneration projects, it means that the sustainability practices of construction organisations should be inclined towards the delivery of a wide range of socio-economic sustainability benefits, such as jobs, apprenticeship opportunities, etc., for communities in which the projects are located. Equally, there are also benefits for practitioners’ organisations as well. According to CLG (2008), organisations that are mindful of their ethical and moral obligation towards society are more likely to win the support of such society.

4.7 Stakeholders’ Demands

The seven socio-economic sustainability issue which was most considered and ranked as the most important driver by practitioners was '*Stakeholders' Demand*' with a mean of 1.88 and RII = 0.29. It has been suggested that many sustainable regeneration projects that have been planned and delivered in the UK, have had such demands from stakeholders, such as the local community groups, non-governmental organisations, etc. (CLG, 2008). Their demands have determined the socio-economic sustainability benefits that were promoted by practitioners to deliver the projects. According to Lankoski (2008), demands from stakeholders play a major role in dictating the adoption of issues that relate to sustainability within an organisation's ethos. From the findings (table 4), 19.2% of the 193 practitioners were of the view that the demands from stakeholders was very important driver, compared to only 3.1% who did not consider it as an important driver at all. Similarly, over 50% of practitioners' considered "stakeholders' demands" to be either very important or important driver, compared to 46.7% who either considered this driver to be fairly important or slightly important. A major phenomenon observed with these findings is that, while the number of practitioners who have cited "stakeholders' demands" as their driver fell short of those who have cited the aforementioned 'driver' as being their driver, it can be said that a significant number of practitioners are still not committed to genuinely pursuing socio-economic sustainability principles on their own without being asked to do so. Such an approach could partly be responsible for many sustainable regeneration projects in the UK not realising their potential socio-economic sustainability objectives. Authors such as Guzmán, *et al.*, (2017) and Evans and Jones (2008) have attributed this phenomenon to the lack of understanding of sustainability principles by many practitioners who are presently practising their trades within the construction industry. Consequently practitioners' understanding of sustainability, and in particular the socio-economic

sustainability, will have to be enhanced to enable them take full advantage of its associated benefits. It is suggested that greater sustainability impacts can be achieved if practitioners recognise the potential benefits of pursuing the sustainability agenda to themselves and to their stakeholders and accordingly respond to such demands (Sustainable Development Commission (SDC), 2003).

4.8 Legislation and Legal Requirement

Previous studies have shown that regulation through legislation has the potential to drive a construction project's sustainability agenda (Häkkinen and Belloni, 2011). According to Häkkinen and Belloni (2011: 241), sustainability 'can also be promoted at least to a certain extent with the help of regulations'. Legislation and legal requirements can form a crucial part towards the promotion of socio-economic sustainability aspects on sustainable regeneration projects by practitioners (Pitt *et al.*, 2009). They are fundamental for establishing and driving the requirements that are necessary for a greater achievement of sustainability objectives on projects. Meeting such legislation and legal requirements can be considered as a means by which practitioners can be urged or compelled to adopt and implement sustainability on their projects, because without such legislative requirements to regulate the practices of practitioners, there is likelihood that practitioners will follow practices that fit within their own agenda. In the UK, for instance, such legislation and legal requirements have been employed to promote and drive the green agenda within the construction industry (CLG, 2008). Their introduction has compelled many practitioners to pursue sustainability practices that will enable them deliver the green requirements for their projects. Seeking to deliver sustainable regeneration objectives, legislation and legal requirements can generally be considered as important and significant driver towards the adoption and implementation of socio-economic sustainability deliverables in regeneration projects.

For example, by ensuring that the design and delivery of sustainable regeneration projects meet certain sustainability legislation and legal requirements, practitioners will be compelled to adopt and implement sustainability practices that will enable them to meet such requirements. Not only that, legislation and legal requirements will also serve as a driving force through which practitioners can achieve higher performance standards of the socio-economic sustainability aspects of their sustainable regeneration projects.

With the mean score of 1.74 and $RII = 0.22$ '*Legislation and Legal Requirements*' was ranked the least most considered driver out of the eight drivers presented to practitioners who participated in the study. Further analysis of results reveals that, 21.4% of the 193 practitioners responded that 'legislation and legal requirements' was very important driver, compared to 19.5% who indicated that it was not a driver for them to promote the socio-economic sustainability factors on their regeneration projects. Additionally, 46.8% of practitioners either considered 'legislation and legal requirements' as very important or important driver, compared to 33.7% who either consider 'legislation and legal requirements' as fairly important or slightly important driver. From the findings, it can be said that a significant number of practitioners are not being driven by 'legislation and legal requirements' to adopt and implement socio-economic sustainability factors in their regeneration projects. Similarly, with these findings, it can be argued that the absence of 'legislation and legal requirements' to drive practitioners towards the adoption and implementation of socio-economic sustainability outcomes can have an implication for the delivery of successful sustainable regeneration projects. Evidence from literature has shown that sustainability projects can be delivered well when there are legislation and guidelines in place to direct practitioners (Häkkinen and Belloni, 2011; Pitt *et al.*, 2009). For example, the introduction of health and safety requirements and regulations within the practices of the UK construction industry has had a profound

impact on reduction of accidents on many construction projects. It is believed that sustainability can be well promoted by practitioners if there are legal requirements and legislations in place to regulate standards and performance against those requirements and legislations (Häkkinen and Belloni, 2011).

5. Conclusion

The study explored the socio-economic sustainability drivers of practitioners involved in the delivery of sustainable regeneration projects in the UK using a quantitative research approach. The findings of the study revealed that all the drivers presented to practitioners have some level of importance on how social and economic sustainability issues were considered in the delivery of sustainable regeneration projects. From the findings it emerged that ‘enhancement of reputation’ was the primary socio-economic sustainability driver for majority of practitioners who participated in the study. The least considered driver was the ‘legislation and legal requirements’. It can be observed that a significant number of regeneration practitioners in the UK are still not genuinely committed to promoting the core social and economic sustainability principles in their regeneration projects. The authors are of the view that, the introduction of legislation to regulate the implementation of the core social and economic sustainability deliverables of regeneration will play a key role towards the delivery of sustainability benefits of the projects. These findings provide a compelling case for UK sustainable regeneration policy makers to give adequate attention to educate practitioners about the main objectives of sustainable regeneration deliverables, if future regeneration projects are to receive a positive drive towards the delivery of their socio-economic sustainability objectives. Doing so will also helped to broaden practitioners’ knowledge and

understanding of the delivery and evaluation of social and economic sustainability benefits of sustainable regeneration projects.

Limitation and future study prospects

Due to time constraint the study could only draw responses from 193 practitioners. Hence the response rate cannot be conclusively said to be representative of practitioners involved in the delivery of sustainable regeneration projects across the four regions in the UK. Similarly, the study focused on the two sustainability drivers: social and economic, hence future studies could consider the environmental sustainability driver of practitioners' organisation involved in the delivery these projects.

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