

Development of a Framework for Sustainable Social Housing Provision (SSHP) in England



By:

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ABSTRACT

Sustainable social housing provision (SSHP) has become very important over the last few decades for the main objective of meeting housing needs. Despite this, there is evidence to suggest that SSHP has not been practiced successfully. A growing body of the literature shows that lack of an acceptable definition of social housing could contribute to the lack of political will for achieving SSHP.

The overall aim of this research is to develop ‘a framework for implementing SSHP’. The aim was achieved through research objectives, including a critical review of the concept and identification of types of social housing and proposes a definition for describing it; examine the concept of sustainable development (SD) and its requirements for achieving sustainability in social housing provision (SHP); and examine the key constituents, barriers and recommendations for improving SSHP from economic, environmental and social perspectives.

The methodology adopted for this research comprises a combination of the review of the extant literature, a qualitative content analysis and a quantitative questionnaire survey. The contents of the selected documents were grouped into three main categories – constituents, barriers and recommendations for implementing SSHP with economic, environmental and social key factors as sub-groups for each. Data gathered through the questionnaire survey were obtained from housing authorities (public sector) and housing associations (non-profit private sector) as social housing practitioners in England and were analysed using various statistical analysis, including ANOVA.

Findings from the study assisted in ranking the key constituents, barriers and recommendations for the implementation of SSHP from economic, environmental and social perspectives, which are categorised into most critical, critical and less critical for achieving sustainability in SHP. The main factors that dominate SSHP include: affordability, adequate provision, adequate funding, economic design and planning, use of environmental friendly materials, effective land use, use of the renewable energy, reduction of waste, promotion of social cohesion, security of lives and property, etc. The outcome was used to develop a framework for improving the implementation of SSHP, which has been tested and validated. Although SD has become a dominant focus of research activities in recent years, studies undertaken for the development of a framework that tied constituents with barriers and recommendations for implementing SSHP are rare. The framework of this type can help to address various sustainability issues that militate against the achievement of sustainability in SHP. In order to achieve SSHP, the role of stakeholders, including social housing practitioners, governments/agencies, financial institutions and end-users are significant. The study concluded that there is a need to develop a framework for implementing SSHP with a strong recommendation that stakeholders should effectively address sustainability issues in SHP.

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LIST OF ABBREVIATIONS

ALMOs:	Arm's Length Management Organisations
BSHF:	Building and Social Housing Foundation
CATA:	Computer-Aided Text Analysis
CBL:	Choice-Based Letting
CECODHAS:	Comité Européen de Coordination de l'Habitat Social, European social housing umbrella organisation.
CIH:	Chartered Institute of Housing
CSD:	Commission on Sustainable Development
DCLG:	Department for Communities and Local Government
DEFRA:	Department for Environment, Food and Rural Affairs
EBRD:	European Bank for Reconstruction and Development
EIB:	European Investment Bank
GAO:	General Accounting Office
GFC:	Global Financial Crisis
HMG:	Her Majesty Government
IISD:	International Institute of Sustainable Development
IMF:	International Monetary Fund
IUNC:	International Union for the Conservation of Natural Resources
MTR:	Mortgage Tax Relief
NHF:	National Housing Federation
NHTI:	National Housing Trust Initiative
NOA:	National Audit Office
NSDS:	National Sustainable Development strategies
OECD:	Organisation for Economic Co-operation and Development
REITs:	Real Investment Trusts
RSLs:	Registered Social Landlords
RTB:	Right-To-Buy
SD:	Sustainable Development
SDIs:	SD Indicators
SDS:	Sustainable Development Strategies

SHP:	Social Housing Provision
SSH:	Sustainable Social Housing
SSHP:	Sustainable Social Housing Provision
UK:	United Kingdom
UN:	United Nations
UNCED:	United Nations Conference on Environment and Development
UNECE:	United Nations Economic Commission for Europe
UNEP:	United Nations Environment Programme
UNESCO:	United Nations Educational, Scientific, and Cultural Organisation
UNHRP:	United Nations Housing Rights Programme
WCED:	World Commission on Environment and Development
WCS:	World Conservation Strategy
WSSD:	World Summit on Sustainable Development
WWF:	World Wildlife Fund

CHAPTER 1. INTRODUCTION

1.1 BACKGROUND TO THE STUDY

The need for achieving sustainability in social housing has been widely acknowledged in the literature and society in general. The term sustainable social housing (SSH) refers to the ability to adequately meet the housing needs of every household “*without compromising the ability to provide for those of the future generations*” (Parkin, 2000). In the UK, the sustainable development (SD) agenda is being promoted in the social housing sector by the government housing agencies – housing authorities and registered social landlords (RSLs) or housing associations (HAs) (Carter and Fortune, 2003). Sustainable social housing provision (SSHP) is, therefore, characterised by (i) “*goals of increasing the gross density of development at affordable costs (compactness)*”, (ii) “*provision for a broad cross-section of people in each neighbourhood and increasing transportation options (diversity)*”, (iii) “*mixing residential areas with the commercial and civic, even business areas that serve them (completeness)*” and (iv) “*in some cases, allowing for land-use-change over time (flexibility)*” (Girling, 2010).

SSH is a sub-sector of housing, “*which can be described as shelter (physical structure), together with all social services and utilities such as road, drainage, electricity, health, and security services*” (Boelhouwer, 2001; Oduwaye et al., 2003; Burkey, 2005; Idrus and Siong, 2008; Bujang et al, 2010; Latheef, 2011). Housing, is generally regarded as one of the basic needs irrespective of income categories; can be used to determine a person’s standard of living; and it does not only provides accommodation but also offers comfort and security (Aluko, 2012). However, despite the benefits of SSH, it has not become popular with many governments due to enormous social, political and economic problems coupled with the significant expansion of public services, such as health, education, transportation, security, etc. (Abdullahi and Aziz, 2010).

The provision of housing was by individual ownership and through the market system in many parts of the world (Rizvi, 2010). However, the market housing system has a variety of challenges in relation to adequacy, standard, funding, affordability, and sustainability issues (Powel, 2010). Consequently, many households lack the ability to access decent housing due to increasing costs relative to earnings (Franz, 2009; Powel, 2010; Rizvi, 2010). The inability of the market housing to meet the general housing needs can be linked with the fact that it is intrinsic with inequalities in affordability, distribution and consumption, high prices, cost of construction, high profit margins, insecurity of tenure and charges (Beng-Huat, 1996; Oduwaye et al., 2003; Wadhwa, 2009). The study by Stone (2003) shows that the general decline in the

level of housing provision in many countries is a major contributing factor to housing crisis, which for economic reasons, the private sector could not tackle effectively, especially in the short term, and which for the lack of strong economic, political will and an efficient legal framework, the public sector could not properly address.

The desire to meet housing needs has been an enormous task for governments, private developers and non-profit organisations for many years in different countries. For example, governments and non-profit organisations in many countries started providing social housing when it was noticed that housing provision through the market system could not meet housing needs (Berry et al, 2001; Maclennan, 2008; Powel, 2010). Countries like the UK government, New Zealand, Australia, the Netherlands and the USA embarked on several public-assisted programmes such as rent subsidies, mortgage finance, housing benefits and sites and services schemes aimed at meeting housing needs (Burkey, 2005). Government intervention in the form of SHP is viewed as important in order to: (i) make it available at affordable cost, (ii) increase the stock and (iii) improve the environment (Berry et al 2001; King 2003; Maclennan 2008; Wadhawa 2009; Powel 2010). In contrast, the continuous housing crisis in many countries, including the UK suggests that public-assisted programmes may no longer be adequate for addressing affordability and sustainability issues. Various public-assisted programmes have been possibly constrained by the excess of demand over the supply due to increasing population growth, global economic recession and inadequate funding (Burkey, 2005). A shift in governments' programmes against full funding of SHP started in 1970s in the UK due to socio-economic problems on one hand and for the purpose of moving towards a market based system on the other hand (Malpass and Victory, 2010).

Quan and Hill (2008 as cited in Bujang et al. 2010) view affordability of social housing from the perspective of purchase, rental or income. This suggests that every household should be able to either purchase or rent a decent accommodation without any form of stress on the income. In addition, the general believe is that housing provision (social or public) has social, economic and environmental implications, which makes it necessary for integrating sustainability into its development. For example, Pattinaja and Putuhena (2010) argue that human beings and the environment are two inseparable components that support each other and should continue to do so from generation to generation. Therefore, adequate care must be taken to ensure SHP has minimal environmental implications by addressing sustainability issues.

Reviews of published documents indicate that SHP in the UK is not affordable to all income-earners, particularly low-income households, and also show that SHP has sustainability issues, especially with old buildings, most of which are more than 60 years old. Thus, some SHP can be linked with factors such as: inadequate funding and provision; poor skills and technology; poor planning, design and construction; lack of recyclable and environmental friendly materials;

and energy conservation and environmental management issues (Drudy and Punch 2002; Pickvance 2009a; Rizvi 2010; Dolata 2011; Wiesel et al. 2012).

However, achieving sustainability in SHP can be a challenging task given the requirements compare with the objectives of SHP and the nature of the major beneficiaries (low- and moderate-income households). Therefore, this research study seeks to address sustainability issues through a proposed framework for implementing SSHP. Given the importance of SHP, there is a need for stakeholders to be proactive in tackling sustainability issues. This research is unique in finding out how sustainability issues in SHP can be properly addressed.

1.2 PROBLEM STATEMENT

The main problem being addressed in this study is the issue of achieving sustainability in SHP in the UK in order to meet housing needs. It is commonly acknowledged that the majority of low-income households cannot access decent housing due to the inability of the private market housing to meet housing needs (Shelter England, 2013). This has resulted in a housing crisis, which has not been effectively addressed despite the intervention programmes of the government such as rent and mortgage subsidies and housing benefits (Drudy and Punch, 2002; Burkey, 2005; Rizvi, 2010). Vulnerable households are the most affected in terms of housing discrimination, stigmatisation, non-affordability and poor living conditions in degraded housing environments (Zakaria, 2007; Winston, 2009; Abidin, 2009).

It is possible to link the housing crisis to the lack of a proper and single internationally acceptable definition for describing social housing (United Nations Economic Commission for Europe - UNECE, 2003). For example, having a common knowledge about the types, nature of beneficiaries and implementation requirements of social housing provision can assist in addressing the various issues effectively for meeting housing needs (Disney, 2007). Therefore, the proposed definition of social housing (see Chapter 2) and the developed conceptual model of the key factors of economic, environmental and social constituents, including barriers and recommendations for improving the implementation of SSHP in this study (see Chapter 5) are considered as a possible means of addressing sustainability issues in the sector. The purpose of this research, therefore, is to develop a framework for implementing SSHP in recognition of the above stated gaps.

1.3 RESEARCH AIM AND OBJECTIVES

The aim of this research is to develop a framework for implementing sustainable social housing provision. The stated aim was accomplished through five research objectives, which are:

1. To critically review the concept of social housing and identify types of social housing and propose a definition for describing it.
2. To examine the concept of sustainable development (SD) and its requirements for achieving sustainability in social housing provision.
3. To examine the key constituents of sustainable social housing provision from economic, environmental and social perspectives.
4. To establish barriers to achieving sustainability within social housing provision.
5. To establish recommendations for achieving sustainability in social housing provision.

1.4 RESEARCH PROGRAMME

The research programme has four stages as shown in Figure 1.1. The research stages and the research approaches adopted for addressing the objective(s) at each stage are explained in Chapter 4, while details of the research findings are discussed in the other chapters.

1.5 SCOPE AND LIMITATIONS OF THE STUDY

Although, there are some studies that have documented constituents, barriers and recommendations for improving the implementation of social housing, the key indicators of the economic, environmental and social constituents of SSHP have not been fully developed academically into a framework for achieving sustainability in the sector (see Section 9.3). The scenario, therefore, constitutes a limitation at the commencement of the study. However, these difficulties are overcome through an in-depth content analysis of relevant documents on social housing, SD, and SSH. In addition, the developed framework for implementing SSHP is relatively new and unlike the existing frameworks the scope is wide-ranging.

For the questionnaire survey carried out as part of the study, housing associations and housing authorities were selected from the social housing sector in England. Housing association members of the National Housing Federation (NHF) and housing authorities in all local council areas of England were selected to limit the scope of the study due to the geographical base of the researcher's work. NHF members were chosen because the umbrella body is known as the voice of affordable housing in England and is recognised by the government. In addition, the choice of gathering relevant empirical data from social housing practitioners through NHF members and housing authorities in England and not from the whole UK was considered appropriate for this research. According to Liyanage (2006) choosing all existing population could overshadow the real issues and could make the research more complex. The focus on the housing authorities and housing associations is particularly due to an increased level of attention being given to achieving sustainability in the social housing sector by these two bodies in terms of building new sustainable structures and refurbishing the old ones (Malpass and Victory,

2010). Based on the aforementioned, the geographical boundaries of the research are scoped within England.

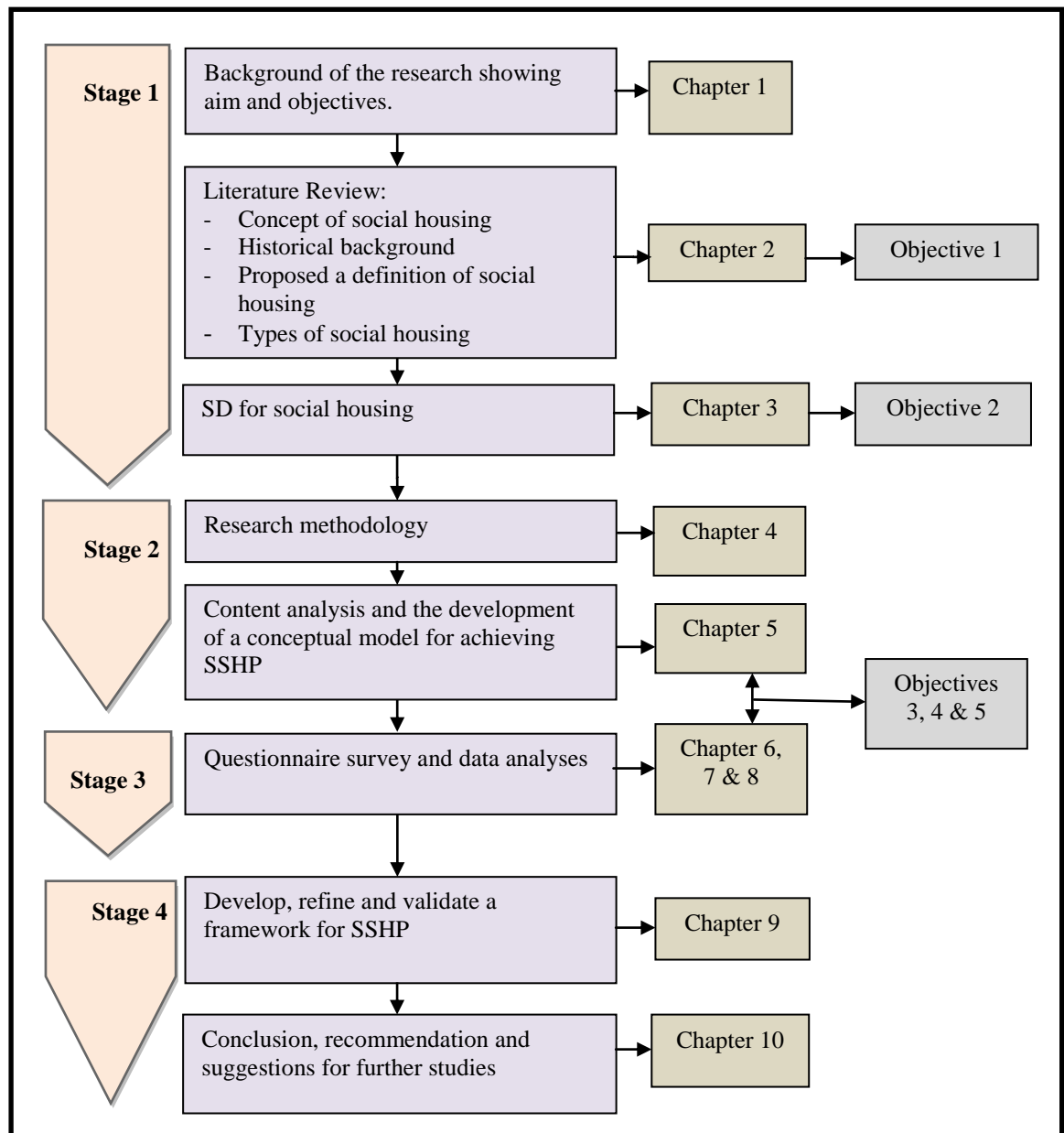


Figure 1.1: The Research Process/Thesis Structure Diagramme

1.6 CONTRIBUTION TO KNOWLEDGE AND ORIGINALITY

While there is a considerable wealth of knowledge and a wide array of literature about the concepts of social housing and SD, there has been little empirical evidence on the development of a framework for implementing SSHP. This is further exacerbated by the fact that some social housing projects in the UK have sustainability issues. The understanding and documentation of the constituents of SSHP have also not received proper attention. Given these issues, in terms of contributions to knowledge in the field of SHP, this research has:

- Proposed a definition of social housing in order to have a wide-ranging understanding of its importance, to provide a clear identity and potential contributions for meeting housing needs.
- Proposed a definition of sustainable social housing (SSH) in order to have a wide-ranging understanding of its importance for meeting housing needs.
- Documented and developed a model of social housing types that can assist in meeting housing needs through the sector.
- Produced a conceptual model of the constituents, barriers to implementation and recommendations for improving SSHP.
- Developed a framework for implementing SSHP.

Basically, there is a fundamental difference between the conceptual model of SSHP and a framework for implementing SSHP. The conceptual model (Figure 5.2) gives a picture of the constituents, barriers to the implementation and recommendations for improving the implementation of SSHP; and the framework (Chapter 9) takes some steps further by identifying responsibilities of all relevant stakeholders, provides specific means of evaluating stakeholders' performance through in-project and post-project reviews, and details certain relevant factors that can assist in improving the implementation of SSHP. Therefore, the findings of this research can assist stakeholders – governments, not-for-profit organisations of the private sector, financial institutions and end-users to play their respective roles in a collaborative manner for implementing SSHP. The outcomes of the research can constitute a major contribution to the body of knowledge in achieving SSH delivery. Apart from assisting in achieving the sustainability agenda of the UK government, it can help stakeholders in taking a pro-active step towards meeting housing needs.

The research therefore, can be considered as significant to the need for developing a framework for achieving sustainability in social housing, improving people's well-being through decent and sustainable housing where residents are proud to live and promotes the improvement of the environment as well as making a contribution to the body of knowledge.

1.7 STRUCTURE OF THE THESIS

This thesis consists of 10 chapters. The contents of each chapter are detailed in a summary format as follows:

- **Chapter 1** provides a general introduction of the thesis detailing the nature of the problem investigated. It encompasses justification for selecting the topic for addressing the research problem. The chapter also includes aim and objectives, and a contribution to knowledge. It contains an outline of the research process covering 4 stages.

- **Chapter 2** provides a review of available literature on the broad areas of SHP. It presents origins and evolution of social housing as an intervention programme of governments and not-for-profit organisations, with particular reference to the UK. It discusses types of housing and their characteristics. Issues surrounding a definition of social housing were considered before proposing an encompassing definition. This chapter addresses objective one (see section 1.2).
- **Chapter 3** deals with the concept of SD including its origin and evolution. It discusses various arguments, views and terminologies being used to describe the concept. Particular consideration was given to UK SD strategies. It discusses the concept of SSHP and establishes economic, environmental and social constituents of SSH. It also details the key barriers to the implementation and recommendations for improving SSHP. Finally, it discusses the responsibilities of relevant stakeholders in SSHP. This chapter specifically addresses the second objective of this research (see section 1.2).
- **Chapter 4** addresses the research methodology and methods used for collecting data for this research. This includes strategies adopted for data analysis to achieve the aim and objectives of this research. It establishes the epistemological framework in which the research was conducted. The chapter establishes a justification for the methods adopted for carrying out this research. The processes of the content analysis used to develop a conceptual model of SSHP; the empirical survey approach and methods used for data analysis, including the developed framework for implementing SSHP are discussed in the chapter.
- **Chapter 5** presents a conceptual model of SSH using content analysis. It establishes the key factors of economic, environmental and social constituents of SSH. It also provides barriers to the implementation and recommendations for improving SSH. Findings from the content analysis were used to develop a conceptual model of SSH. The chapter prepares a background for achieving objectives 3, 4 and 5 of this research (see section 1.2).
- **Chapter 6** discusses details of the data analyses and findings on the constituents of SSHP from the empirical survey conducted in this research. Data were gathered on a Likert scale of 5 from housing authorities (public sector) and housing associations (private sector) and analyses were carried out by ranking the mean response on a Likert scale of 3. Significance levels of the responses were determined using the one-way ANOVA. The chapter addresses objective 3. Methods adopted in this chapter are similarly adopted in chapters 7 and 8 of this study.
- **Chapter 7** discusses details of the data analyses and findings about the barriers of SSHP from the empirical survey conducted in this research. The chapter addresses objective 4 of this study.

- **Chapter 8** discusses details of the data analyses and findings about recommendations for improving the implementation of SSHP from the empirical survey conducted in this research. The chapter addresses objective 5 of this study.
- **Chapter 9** discusses details of the processes of developing a framework for implementing SSHP. It shows the significance of the framework based on constituents, barriers to the implementation and recommendations for improving SSHP. The chapter establishes wide-ranging sustainability indicators from economic, environmental and social perspectives. The sustainability indicators are presented in relation to the responsibilities of relevant stakeholders and show how stakeholders' performance can be evaluated against pre-established goals.
- **Chapter 10** is the final chapter of this thesis which presents summary and major conclusions drawn on each research objective of this study. It also details the major conclusions drawn. Recommendations were made for the implementation of the developed framework and for further research work.

CHAPTER 2. THE CONCEPT OF SOCIAL HOUSING PROVISION

2.1 INTRODUCTION

As discussed in Chapter 1, SHP, as a sub-sector of housing, is one of the major focus areas of this research. The basic overview of housing is considered helpful as background information on social housing. Therefore, Chapter 2 presents an overview of information on housing followed by a description of social housing. This step is considered important for laying a solid foundation of the discussions in Chapter 3. The description covers housing and the two categories of housing: the market and social (non-market) housing. Characteristics of market housing and its limitations, which caused the intervention by governments and non-profit organisations in the form of SHP, are also covered. The discussions include types of social housing, definition issue and a proposed acceptable definition for describing social housing.

2.2 AN OVERVIEW OF HOUSING PROVISION

Housing is generally described as the act of providing accommodation for various households in the society. It is central to the quality of the environment, economic development, life in the community and can assist in fulfilling people's aspirations (Hills, 2007). Housing is not only vital to our economy, our environment and to every individual and family, it is important for a home represents so much more than just a place to live (Kelly, 2007 cited in Hills, 2007). It is largely acknowledged as one of the basic needs and the fundament of a free development of an individual, irrespective of their economic and social background (Franz, 2009). Housing is regarded as a system of shelter (physical structure) together with all social services and utilities like road, drainage, electricity, health and security services (Quigley, 1999; King, 2003; Coolen, 2006; Powel, 2010).

Housing can be described according to a particular objective, purpose or concept such as public, private, co-operative, sustainable, social or sustainable social housing. It is a long-life basic human need and the importance of housing in the society is enormous and has some facilitating roles as follows – it can (Carter and Polivychok, 2004): improve physical and mental health; enhance educational attainment; facilitate skills development, investment and capacity building; facilitate social and cultural integration; contribute to stability and mobility; enhance income security, and economic growth; and strengthen the foundation of family ties.

The Housing Shareholders Advisory Group (2010) argues that though shelter is one of the most basic human needs, a home is much more than the place where we 'hang our hat' and it can give

our lives some stability and permanence and contribute materially to our physical and social well-being. Despite its importance, if compared with other basic social needs like food and clothing, housing is often unaffordable for low-income earners (Rizvi, 2010). Many people, particularly in countries where market provision is dominant are facing serious housing affordability problems which exacerbate rather than reduce inequality (Drudy and Punch, 2002). According to Beng-Huat (1996), the market economy is noted for its inability to provide adequate housing to the masses as inequalities in affordability; distribution and consumption of housing are intrinsic therein, which gives rise to the existence of class structure.

Governments in many countries of the world, particularly the developed countries have, therefore, realised that it is part of their constitutional roles to cater for the welfare of all citizens, particularly in the area of housing provision. Consequently, they have embarked on the development of what is known as social housing (Malpass, 2001). Governments have also embarked on various public-assisted programmes in order to meet housing needs (Malpass, 2001). However, the (in) adequacy of governments' role in housing provision has become a major concern given the existing housing crisis in many countries. It is for such reasons that government intervention in housing provision is inevitable given its importance as discussed above.

2.3 GOVERNMENTS' INTERVENTION IN HOUSING PROVISION

Governments' intervention in housing provision in many countries dates back to the period before World War I. Generally, governments' involvement in housing can be traced back to 1884 and 1885 when it became clear that the various model dwellings companies and charitable trusts could not meet housing needs, which resulted in the inevitable rise of municipal housing provision (Gauldie, 1974 as cited in Malpass, 2001). This was followed by the large scale programmes of public rented housing, which occurred in many other European countries such as, Germany, Denmark and the Netherlands from 1919 until the mid-1920s (Harloe, 1994). A typical example of beneficiaries of government intervention programmes are the urban poor in West European cities where houses were typically cramped together and in unhygienic conditions (Ronald, 2013). Although causes and timing of the intervention may be similar, the strategy seemed to be different in different countries such as, the Netherlands, the UK and US.

In the Netherlands, around the late 1800s, what started with business owners' provision of housing for workers and the elderly became a piecemeal approach and was no longer sufficient, due to increasingly crowded and deteriorating housing conditions in Dutch cities (Dolata, 2008). Prior to World War I, housing sector, like every other one, experienced escalating costs. The labour activities and the monopoly position of brick manufacturers were threatening to truncate the pursuit of affordable and high-quality mass housing provision in many Dutch cities

(Bervoets, 2010). Some other notable events that called for urgent intervention include, World War I of 1914 to 1918, which had some devastating effects on the housing stock; followed by the economic depression of the early 1930s that adversely affected housing provision (Bervoets, 2010). The literature evidence also shows that the ensuing economic depression created massive unemployment, which later resulted in poor housing affordability in the country (Boelhouwer, 2001). Immediately after World War II, which lasted until May 1945, the country experienced substantial housing shortages, escalating costs of living, construction and interest rates (Boelhouwer, 2001). The study by Bervoets (2010) documents that during the World War II, 43,000 houses were badly damaged, 293,000 slightly damaged and about 84,000 units out of about 2.1 million houses were lost. According to Heynen (2010), the Netherlands is one of the countries that suffered most during the war, with several cities severely damaged by either German (Rotterdam) or American (Amhem) air raids and ground battles. The situation became worse by the rapid growth in the number of households due to high birth rate; and the housing needs could not be met due to the low level of residential construction during the post-war period.

In the UK, one major contributing factor to the housing crisis was the long-term structural failure of the private housing market to provide decent, affordable and sufficient housing for the working class during the 19th century (Harloe, 1994). The main backdrop to decades of housing crisis caused both middle-class and working-class pressure for reform that gradually encouraged the move by local authorities into directly building and managing housing for rent in the early 20th century (Malpass, 2005; Merrett, 1979 as cited in Hodkinson, 2011). Local councils began to build flats and houses for local people, like the Boundary Estate built in 1900 by the London County Council. However, there ensued a serious decline in the level of housing production before 1914 up to 1918 (Murie, 1999 as cited in Stone, 2003). After the start of World War I in 1914, the government introduced rent control in 1915, gave subsidies to councils for housing provision, as contained in the Housing Act 1919, and further empowered them to solve the problem of inner city slums through the Housing Act 1930 (Stone, 2003). Both World Wars worsened the housing situation in the country, given the mass destruction of the housing stock and difficulties in building new ones for replacement (Stone, 2003). An account of the devastating effects shows that about four million British homes were destroyed in cities such as London, Coventry and Kingston upon Hull during the World War II between 1939 and 1945 (Hills, 2007). The wide gap in income and rents experienced after the war consistently kept house prices high at a proportion that was far more than any increment in workers' salaries (Harloe, 1994).

Similar to many European countries, the Great Depression of the 1930s saw the emergence of a permanent public housing programme in the US (Stone 2003). In addition, the industrial revolution during the 19th century forced the government to embark on housing provision in

order to address the inadequacies and the homelessness problems of workers at that time (Stone 2003). Further, the increased housing needs arising from the combination of economic modernisation, urbanisation and demographic changes of households propelled the housing crisis into the late 1960s and early 1970s in many parts of the country (Harloe, 1994).

The aforementioned examples give evidences to the intervention of governments and non-profit organisations in housing provision in some developed countries. Although, the provision of housing by governments has undergone profound transformations over the post-war period, especially in many Western nations, adequately meeting housing needs is yet to be accomplished (Skelton, 1996). Generally, private developers could not effectively tackle the severe shortage for lack of funds, and governments could not overlook the plight of the masses for political reasons (James and Cheng, 2011). The situation made government intervention in housing provision inevitable in order to assist households that were compelled to contend with the negative effect of inflation on their earnings and savings as well as continual depletion of their purchasing power (James and Cheng, 2011).

Governments' efforts in housing provision have been widespread in developed countries. Various forms of government intervention in housing provision are widely acknowledged in the literature. For example, studies by Berry et al (2001); Maclellan (2008); Powel (2010) provide some of the government's intervention strategies such as: (a) direct provision of low-cost housing; (b) subsidies in rent or mortgage funding and interest rates; (c) subsidies on costs of construction undertaken by private developers; (d) granting of concessions to developers on prices of state land; (e) infrastructure upgrading of privately developed squatter areas; and (f) site and services schemes.

The overarching aim of the aforementioned strategies is to address issues of inadequate provision, sub-standard housing and non-affordability due to the general low-income level, inflation, poor savings as well as the negative effects of the two World Wars (Quigley, 1999; Berry et al, 2001; Maclellan, 2008; Powel, 2010). The continuous intervention in housing provision afterwards is not surprising, given that it is important for: (a) maintenance of standards in materials specifications and usage; (b) coordination of land uses in order to prevent haphazard development; (c) achieving efficiency in resource allocation through zoning regulations, prevent land use restrictions for housing provision; (d) providing public incentives for maintenance and investment in housing; (e) ensuring adequate funding of the housing sector through effective monetary policy; and (f) making housing accessible and affordable to every household through price regulation and rent subsidies. Accordingly, the impact of the continuous intervention of governments can be felt across the various categories of housing, as discussed in the next section. For example, governments regulate housing design and construction including prices, through legal and administrative frameworks.

2.4 CATEGORIES OF HOUSING

Housing development in many countries has evolved through dynamic systems which are embedded in complex socio-economic structures, political ideology and urbanisation processes (Drudy and Punch, 2002). Different categories of housing with different variations can be identified across the world such as rural and urban housing; low, medium and high-income housing; market and non-market housing. In view of the variations existing across different housing types internationally, Drudy and Punch (2002) simply categorise housing under two main groups - market and social (non-market) housing as discussed below.

2.4.1 Market Housing

Market housing is the type of housing that is provided by private individuals for profit making. It is put in the market either for letting or leasing or sale as an investment. The expected price is usually put above the cost by the expected profit margin (Haffner et al., 2009). Many literature findings have clearly shown that market housing (private housing) has some unique characteristics compared with social housing as follows:

- Prices of market housing are determined by the market forces of demand and supply but governments still subject the operations to various legislative controls. This has been considered necessary in order to curb the excesses of the operators, thereby removing the notion of a 'perfect market housing', given the legislative control. State intervention and regulations are essential for regulating rents or prices and standard of accommodation in a framework that is prescribed in the law as a price control mechanism (Drudy and Punch, 2002; Oxley et al., 2010).
- Market rental housing works with private finance and operates strictly on commercial lines in response to demand and supply forces of the market (Drudy and Punch, 2002; Haffner et al., 2009).
- Market housing is a segment of the market economy that does not make it respond to purchasing power of different income groups, and consequently it does not equally provide some kind of shelter to all. Like a market economy, market housing is characterised by (a) high land prices, (b) high cost of construction, (c) transaction costs, (d) taxes and legal charges and (e) expected profit margins of the market operators (Wadhwa 2009).
- In market housing, price determines allocation, encourages competition among both buyers and sellers and compels providers to be efficient (Elsinga et al, 2009).
- Apart from the high cost of production, housing requires a long time to produce which makes its supply difficult to quickly respond to the level of demand in the market and it has strong connectivity to economic condition (Franz, 2009).

- Supply responds poorly to demand in the market housing because of unwillingness of house/land owners (speculators) to regularly release their holdings into the market in anticipation of future higher gains (Oxley et al, 2010).

The two sub-sectors of market housing are private owner-occupied market housing and private rental market housing. The former is the type of housing owned by private individuals for personal occupation (Oxley et al. 2010). Although, it does not give direct financial returns while being put to personal use by the owner, the satisfaction derived from the occupation is the equivalent of the price it can generate if let or leased in the market (Drudy and Punch, 2002; Oxley et al., 2010). The cost of the development can be derived from personal savings or a guaranteed long or short-term mortgage loan from financial institutions (Elsinga et al, 2009). However, its design, construction and nature of use must conform to planning regulations of the government. On the other hand, private rental market housing is a form of housing owned by private individuals for investment purposes. It is let in the market to prospective occupiers at market prices as may be determined by the forces of demand and supply (Elsinga et al, 2009).

In addition, self-built housing being occupied by those people enjoying housing benefits from the government can still be regarded as part of the market housing. The providers of such category of housing are profit-oriented organisations or individuals. Irrespective of the enjoyment of housing benefits, occupiers of self-built housing pay market rent.

2.4.2 Social Housing (Non-Market)

While market housing is funded and provided by the private for-profit individuals, the funding and provision of social housing are done by governments and not-for-profit organisations. Haffner et al. (2009) argue that the social rented sector caters for the housing needs of those on lower incomes compared with the market rental sector, which works with private finance and operates on strictly commercial lines responding to the market on demand. This is clearly showing that social housing systems do not, in themselves, constitute market places but they nevertheless exist within broader systems dominated by market mechanisms (Ferrari, 2011).

Various academic arguments reveal that SHP for many decades since before World Wars I and II, has been an intervention programme of the state and non-profit organisations due to the inability of the market system to meet housing needs. For example, the pre-war growth and development of the social rented housing sector in Western Europe was related to substantial quantitative housing shortages, and was largely supported and controlled by central governments (Boelhouwer et al., 1997). It is generally acknowledged that social rented housing has traditionally aimed at fulfilling four main objectives as follows: to (a) reduce shortages of housing; (b) improve the affordability of housing; (c) allow people, who could not afford to do so in the free market, to gain access to adequate housing; and (d) act as a safety net for more

marginal households who would otherwise be homeless (Stephens et al., 2002). However, findings have shown that SHP suffers from many issues like inadequate provision, poor affordability, inadequate funding, poor standard and general inability to meet housing needs (see Chapter 7).

The process, however, by which social housing investment occurs and its contribution to total housing investment varies considerably from country to country (Jacqueline and Oxley, 1997). Consequently, this has been a major contributing factor to the lack of a single internationally acceptable definition of social housing. Having discussed housing and the two categories of housing in the previous sections, discussions in the remaining sections of this chapter focus mainly on SHP.

2.5 DEFINITION OF SOCIAL HOUSING

A broad range of literature reveals that social housing has no common internationally acceptable definition (Drudy and Punch, 2002; Murphy, 2003; Li, 2007; Malpass and Victory, 2010; Oxley et al, 2010). For example, most European Union (EU) countries have no standard official form of describing social housing. The provision across Europe is subject to several political, economic, cultural and demographic developments as a result of which it has undergone a lot of reformative programmes (Czischke, 2009). Different terminologies have also been used to describe social housing, such as: ‘Housing at Moderate Rent’ in France, ‘Common Housing’ or ‘Not-for-Profit Housing’ in Denmark, ‘Housing Promotion’ in Germany, ‘Limited-Profit Housing’ or ‘People’s Housing’ in Austria, ‘Protected Housing’ in Spain, ‘Public Utility Housing’ in Sweden, ‘Council Housing’ or ‘Local Authority Housing’ in the UK (Pittini and Laino, 2011). Different providers of social housing across Europe have been local authorities, municipalities, housing co-operatives, associations, commercial enterprises and not-for-profit organisations.

What further characterised the social housing sector across EU member states is “*its diversity in terms of: (i) size in relation to other tenures; (ii) legal and organisational forms of providers; (iii) the form of social tenures such as rental housing, affordable ownership, co-ownership, co-operative housing, shared ownership, etc.; and (iv) the overarching housing policy framework within which these actors operate*” (Czischke 2009). These characteristics have given rise to varied definitions of social housing. The issue is such that there is no single formal definition that has been used to generally define social housing (Scanlon and Whitehead, 2007). Drudy and Punch (2002); Murphy (2003); Li, (2007); Malpass and Victory (2010) describe social housing as the type of housing of which, the central features influencing its provision and price are not based on demand and supply forces, but strictly on need. In the opinion of Oxley et al. (2010), SHP is subsidised through government programmes for families and individuals who

cannot afford to rent market housing, or for whom the market does not always provide housing, such as less-privileged or disabled persons. Drudy and Punch (2002) define social housing as a form of housing owned by the government or government agency, non-profit or co-operative society with rents not determined by the market but by the residents' ability to pay.

Different criteria for defining social housing in some countries are given in Table 2.1.

Table 2.1: Defining Social Housing

Factors	Definition Criteria	Applicable Countries
Ownership	Non-profit organisations and local authorities	The Netherlands, England and Sweden
Construction	Who construct the dwellings	Austria and France
Nature of Rent	Below market levels	Ireland and England
Funding	Relevant funding and/or subsidy stream	France, UK and Germany
Target Occupiers	1) All households 2) Low income households and less-privileged.	Austria and Sweden The Netherlands and England
Motive/Purpose	Social service and not-for-profit	All countries

Source: Adapted from Scanlon and Whitehead (2007)

According to Lawson (2009), social housing in Australia is defined to include a variety of non-market housing:

- **Public Housing:** state owned and managed for the purposes of providing affordable housing to the low and moderate income groups;
- **Community Housing:** dwellings which are state owned but managed by the community/not for profit based organisations, for affordable housing purposes;
- **Transitional Housing:** dwellings which are owned and managed by not-for-profit organisations for affordable housing purposes with a significant public assistance for purchase and construction;
- **Social Housing:** provision of secured affordable housing on a long term lease basis with government subsidies, where not-for-profit or private sector organisations are still performing management roles.

Haffner et al. (2009) “define the social rental sector in France as the dwelling stock that is intended to house the lower-income segments of the population, which is let by non-profit or limited-profit oriented landlords and is allocated by means of a needs-based allocation system”.

According to Jacqueline and Oxley (1997), social housing in Germany is a function of a method of financing housing and not of specific types of landlords. What further complicates the

situation is that many countries in Europe such as Austria, the Czech Republic, and Ireland do not even have any official way of describing social housing (CECODHAS, 2012). In contrast, Disney (2007) argues that in generic term housing that is managed by a government agency or non-profit organisation can be referred to as a public or non-profit housing as against the use of social housing that is inherently vague, misleading and potentially stigmatising.

In a proposal to the European Commission by CECODHAS in 1998, social housing was commonly defined as, “*Social housing is housing where the access is controlled by the existence of allocation rules favouring households that have difficulties in finding accommodation in the market*” (United Nations Economic Commission for Europe - UNECE, 2003). Although the description of social housing has a general outlook, it does not constitute a sufficient basis for international comparison as it leaves out the aspect of tenure and only refers to target groups in general terms (UNECE, 2003). Therefore, what should be taken into account as the criteria for defining social housing comprehensively are: allocation, affordability and security of tenure (see Figure 2.1).

However, UNECE (2003) proposed that the definition of social housing should be looked at with the aim of establishing certain criteria for determining the dividing line between it and other form of housing. This has been considered a necessary step in response to the inability of the market housing to adequately address the general needs for housing in the society (UNECE, 2003). The lack of a common definition becomes clear from the ways social housing has been defined differently in many countries and by different scholars. Appendix A, therefore, presents various ways SHP has been described, which demonstrates vividly the lack of a single internationally acceptable definition of social housing. The various attempts made to define social housing can still be considered inadequate for a proper description of SHP. This suggests that there is no consensus of opinion about the understanding and how social housing is being provided. Nonetheless, the above discussions also infer that social housing is housing provided by governments or not-for-profit organisations, targeted at low-income earners at below market prices.

Therefore, a definition that will capture every structure that makes up SHP is necessary so that the required action from each constituent can be taken seriously in every country, for meeting housing need. This can also pave the way for a concerted effort geared toward the delivery of adequate social housing in terms of quality and quantity in each country.

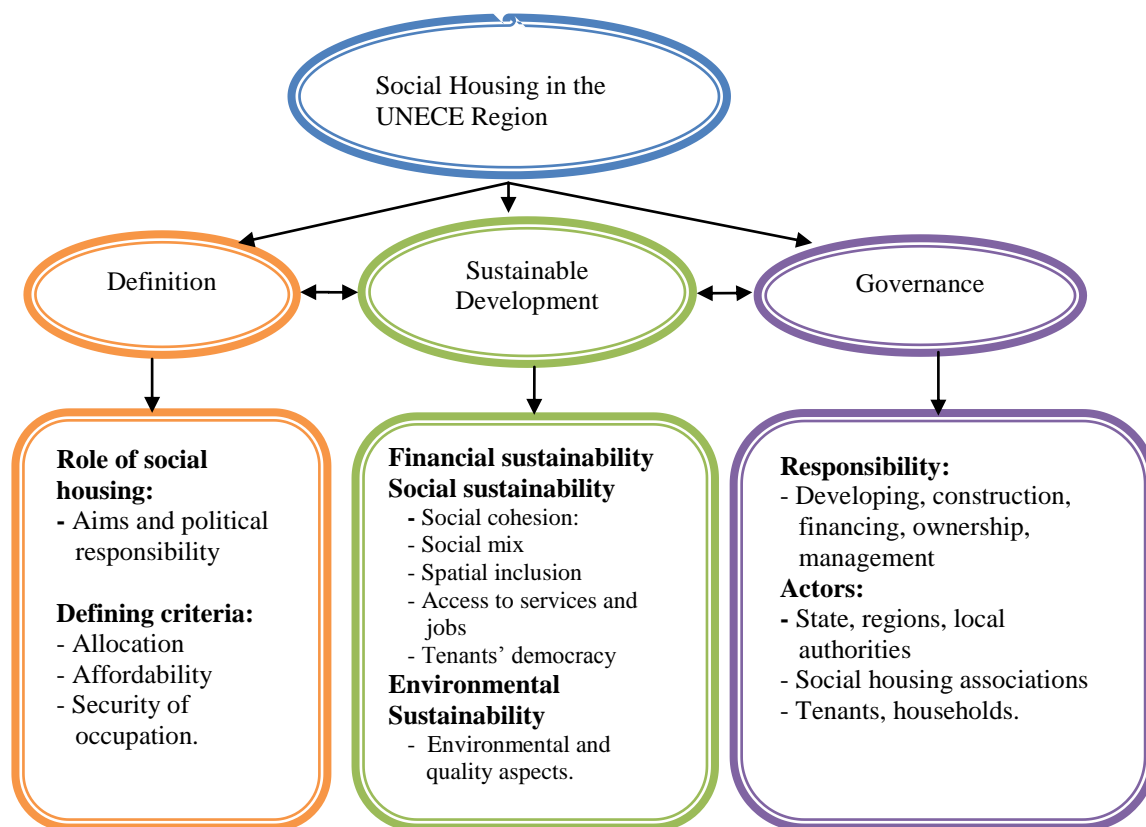


Figure 2.1: Role and Definition of Social Housing

Source: United Nations Economic Commission for Europe (UNECE) Committee on Human Settlements (2003)

For example, based on the various definitions of social housing and arguments about how it should be defined, some common major components of social housing can be identified. A combination of these major components can be used in arriving at a common acceptable definition of social housing. Accordingly, an attempt has been made in this research study to use the common major components of social housing to propose an internationally acceptable definition of social housing as follows:

“Social housing is a form of government regulated housing provided and managed by the public agencies or non-profit organisations using public and/or private funds for the benefit of many households, based on degree of need, made available at below market price with the delivery of social service or not-for-profit motives on a short or long term basis” (Oyebanji, 2014).

As revealed in various attempts to define social housing, the proposed definition has captured the core areas or major components of social housing, which are: regulation, nature of providers, management, funding, intended beneficiaries, allocation criteria, price, motive, and tenure. The proposed definition can assist in achieving the housing agenda of governments and not-for-profit organisations in different countries. It can also help to properly give SHP the required priority attention within the government’s regulatory and budgetary frameworks so as to meet the housing need.

The proposed definition of social housing has clearly shown that it has certain characteristics that differentiate it from market housing as claimed by UNECE (2003). Features that distinguish social housing from market housing (adapted from Oxley et al., 2010) are shown in Table 2.2.

In addition to the features shown in Table 2.2, Priemus (1997 as cited in Murphy, 2003) had earlier argued that adequate funding and flexibility in construction and allocation for ensuring social cohesion can make SHP to be regarded as a social housing scheme.

Table 2.2: Distinguishing Features of the Market and Social Housing

Features	Market Housing	Social/Non-Market Housing
Nature of regulation	Partially regulated by the government	Fully regulated by the government
Ownership	Private individuals	State/charitable organisations
Financing	Private individuals	State/charitable organisations
Allocation criteria	Demand and supply	Political/degree of need
Price	Determined by market forces	Subsidised/below market price
Motive	Profit	Social/non-profit
Beneficiaries	Members of the public	Mostly low-income earners
Tenure	Short or long term	Short or long term
Management	By the providers (Private owners)	By the providers (public or not-for-profit owners)

Source: Adapted From: Oxley et al (2010)

2.6 GENERAL OBJECTIVES OF SHP

The literature evidence shows that many key objectives of social housing exist. However, Burkey (2005) argues that in order to take care of the future in a more constructive way and scanning through the past and present, social housing objectives should be grouped under diversity, opportunity, inclusiveness, affordability, sustainability and security of tenure. Each of the objectives can be examined in relation to the provision of social housing from a general perspective as shown in Table 2.3. The objectives seem appropriate and they are reflected in SHP in the UK, the Netherlands, New Zealand, and Australia among others.

Table 2.3: Objectives of a Contemporary Social Housing Provision (SHP)

Objectives	Characteristics
Diversity	Dwellings of a form which is appropriate for different users and uses. Generating urban diversity or variety. Allocations systems which facilitate greater choice and movement between tenures. Dwellings which are flexible to changing needs and circumstances.
Opportunity	Ability to relocate without limiting employment, educational or health care opportunities. Reduced barriers to moving within and between tenures. Housing assistance to minimise barriers to workforce opportunity. Expanding home ownership opportunities.
Inclusiveness	Housing of a form which helps build or maintain a community and local economy i.e. commercial activities and social services. Urban and regional locations which do not exclude or divide.
Affordability	Appropriate dwellings which are affordable for all income ranges.
Sustainability	Housing of a form which reduces energy and water consumption. Housing provision which is consistent with local environmental capacity. Housing which is of sufficient durability to reduce long-term economic costs.
Security	Equivalence of security of tenure across tenures. Communities and neighbourhoods, which instil a sense of safety and security.

Source: Adapted from Burkey (2005)

2.7 SOCIAL HOUSING: PUBLIC MODEL VS. PRIVATE MODEL

Many models have been developed for the main purpose of differentiating between types of social housing and the nature of its providers. This has helped in understanding the role of providers – government (public sector) and non-profit organisations (private sector) in the delivery of social housing for meeting housing needs through the social housing sector.

Malpass and Victory (2010) identify two models of social housing as a way of approaching an understanding of the dynamics in the provision of social housing. Firstly, they refer to the public social housing model, which was established in the period between the two World Wars and secondly, the private social housing model, which gradually replaced the former. The two models can be referred to as the welfare state and the post-welfare state models, respectively (Malpass and Victory, 2010). This according to Malpass and Victory (2010) suggests that the period between 1800 and 1970s can be regarded as welfare state and 1980 – to date as post-welfare state (see section 2.9). The post-welfare state model presents the current scenario

whereby the government has withdrawn from the direct provision of social housing to an enabler and supervisory role. Similar to social and market housing (see 2.4), differences between public and private social housing could simply be analysed in terms of who the providers are and what benefits the beneficiaries get from the sector. The models are shown in Table 2.4.

Table 2.4: Public and Private Models of Social Housing Provision (SHP)

Factors	Public Social Housing Model	Private Social Housing Model
Role in the housing system	Accommodating a broad social spectrum	Predominantly residual
Ownership	Overwhelmingly municipal	Mix of local authority and other social housing providers
Procurement/development	Local authority	Mainly non-municipal providers
Governance	Municipal democratic; local authority from central control	Managerialist; heavily regulated by the centre
Organisational culture	Bureaucratic/professional	Customer oriented; focus on asset management
Finance	Public sector loans and subsidies	Mix of public and private loans; use of cross-subsidy from private developers
Tenants	Passive recipients	Active consumers
Tenure	Rented and shared ownership	Rented and shared ownership

Source: Malpass and Victory (2010)

On the contrary, Haffner and Oxley (2010) provide four models based on the mix in tasks of private and public providers of social housing. Their findings show that it is possible that social housing could be provided by governments (public sector) and/or non-profit organisations (private sector). In arriving at the four models, Haffner and Oxley (2010) split the provision of social housing into different roles or tasks that a provider can perform in the production chain. Barr (1998 as cited in Haffner and Oxley, 2010) argues that there are two types of roles – the decision making role such as: the decision to produce, how to set rents, how to allocate (eligibility rules) and how to evaluate the provision of social housing and the implementation role such as: production, finance, ownership, management, allocation implementation and evaluation implementation. Based on these different roles, the four types of models for the provision of social housing are as shown in Table 2.5 (Haffner and Oxley, 2010).

Table 2.5: Different Models of Social Housing

Providers' Roles	Public model with contract for certain tasks	Private model with public finance plus strings	Private actor Cross-subsidisation model	State-agent model
Production decision*	Public	Public	private and public	private
Development/production*	public and/or private	Private	Private	private
Finance/funding of production**	public and/or private	public (and private)	private and/or public	private and/or public
Ownership of dwellings	public	Private	private	private
Rent setting decision	public	Public	public	private
Management of dwellings	Public	Private	Private	private
Allocation decision (eligibility criteria)	Public	Public	Public	Public
Allocation application	public	Public or private	Private and/or public	State agent (private or public)
Evaluation decision	public	Public	public	public
Evaluation	public	Public	public	public

Source: Adapted from Haffner and Oxley (2010)

* Could also be separate choices for renovation and/or the provision of land (with a lower-than-market price).

** This may be a combination of capital market finance and equity with a subsidy from the government.

According to Haffner and Oxley (2010):

- In the first model, the public provider is responsible for most of the roles and can subcontract to private investors, possibly only the development/production and the funding of the dwellings.
- In the second model, the provider and owner of the social housing is the private with a government subsidy and strings attached like observing rules for the allocation, evaluation and application as set by the government.
- The third type of model is about private actor cross-subsidisation – i.e. a private actor decides to construct and negotiates for a government subsidy. The government would then determine: the rent/price, eligibility criteria, implementation of the allocation and evaluation of the scheme.
- The fourth model (Maclennan & More, 1997 as cited in Haffner and Oxley, 2010) allows housing to be produced through the market by a state-agent i.e., where a third party which could be a government housing agency or a private developer, goes on to

provide houses of an acceptable quality as prescribed by the government and makes them available to applicants on a waiting list at subsidised rates.

2.8 CONCEPTUALISING A MODEL OF SOCIAL HOUSING TYPES

The aforementioned objectives of a contemporary SHP (see Table 2.3) and models of social housing (see Tables 2.4 and 2.5) have helped to determine types of social housing and develop a conceptual model (see figure 2.2). Accordingly, two main types of social housing providers can be identified – public sector and non-profit private organisations, which can be described and understood within the context of the various models and objectives of the provision, as well as social housing types, including their beneficiaries. Details of these are presented below.

2.8.1 Private Social Housing

Private social housing is a form of housing owned, allocated and managed by not-for-profit private housing organisations or individual philanthropists. The sub-types of private social housing are private owner-occupied and private rental social housing. Similar to what occurs in New Zealand, beneficiaries of this group of social housing enjoy financial assistance from governments in the form of a subject subsidy. The subsidy can be for reducing mortgage payments, tax rebates, as in the UK, or rent or accommodation supplements as in New Zealand (HNZC, 2011a). Private owner-occupied social housing is developed by a private entity using personal funds together with any form of government assistance or other form of subsidy. It can also be acquired by a prospective occupier from a social or not-for-profit organisation at a price that is below the market price. In New Zealand and the Netherlands, the share of owner-occupation has been growing since World War II and recently, owner-occupier households have been in the majority (Elsinga and Wassenberg, 2007). Similarly, private owner-occupied social housing in the UK has remained relatively stable at around 17.6 million households representing about 68% of households (Office of National Statistics, 2009 as cited in Pattison et al., 2010).

Private rental social housing is the form of social housing that can be let or leased to a prospective occupier on a periodic lease term. It is a private rental type given that it is not occupied on a permanent tenure basis. Rather, it is usually let out at subsidised rate or social rent payable regularly by the occupier. The developers are usually non-profit housing organisations whose motive is mainly to render social assistance to less privileged people and low-income households.

2.8.2 Public Social Housing

Public social housing is the type of housing usually provided by the local authority or government agencies for the benefit of less-privileged or low-income households (Stone, 2003;

Burkey, 2005; Maclennan, 2008; Wadhawa, 2009; Powel 2010; Malpass and Victory, 2010). The central government agencies take charge of the entire provision including land acquisition, building construction, project funding, distribution, management and entire development processes. This can be regarded as a major way of providing social housing for meeting housing needs and achieving social responsibility agenda of governments (Li, 2007). It is generally viewed as a means of actualising the social service delivery role of the government (Malpass and Victory, 2010).

Some features of public social housing are quite different from those of the market or private-rental social housing in terms of funding, ownership and management (Oxley et al, 2010). Similar to private social housing, public social housing has two major sub-sectors: owner-occupied and rental.

In the UK, public owner-occupied social housing emanates mainly from the provision of the Right to Buy (RTB) scheme, which allowed for public-owner occupiers (see Section 2.9.5). Similar to the UK, owner-occupied social housing has been on the increase in the Netherlands, particularly due to the formulation of various housing policies by the Dutch government for encouraging public housing agencies and housing associations to promote home ownership (CECODHAS, 2007).

Public rental social housing is the type of social housing owned and managed by local authorities and let to occupiers, subject to periodic rental terms. The type is common in many developed countries like the UK, New Zealand, Australia and the Netherlands. The type of social housing is normally let out at below market rent, made possible by a form of subsidy provided by local authorities, municipalities or not-for-profit housing associations (Hills, 2007).

2.8.3 Self-help social housing

Self-help social housing is the type which is owned by individuals with a form of assistance either from governments and/or non-profit organisations such as co-operative societies or charitable bodies. For example, “*co-operative housing comprises of about 20% of the total stock of dwellings in Poland, 17% in the Czech Republic and Sweden, 15% in Norway, an overall total of 10% in all European countries, and relatively small units in countries such as Canada and the UK*” (CECODHAS Housing Europe and ICA Housing, 2012). This form of housing is also common in Taiwan and some developing countries such as Nigeria, South Africa and Ghana. Under this scheme, financial assistance is provided to those who are eligible and who have building plots while the would-be users are responsible for all aspects of construction (Li, 2007). It is a common practice that every prospective beneficiary under this scheme is required to make equity contribution in the form of a plot of land, a percentage of the total cost of construction and efforts in handling the building construction processes.

While a prospective beneficiary is to be responsible for the construction works, the state, employer or co-operative society can give financial assistance of a specified amount for completing the building. The financial assistance is usually in the form of loans payable over a period of time with low interest rates. The building size, cost of construction, and amount of loan obtainable by a self-help social housing beneficiary tend to be regulated by the government (Li, 2007). Every beneficial household under this scheme is usually in the low-income group and must be considered working or earning regular wages. Self-help social housing is not for sale or for rental rather it is usually for owner-occupation. The study by CECODHAS Housing Europe and ICA Housing (2012) showed that owning a house through a housing co-operative provides many advantages in terms of: (a) economic, environmental and social sustainability; (b) providing affordable housing; (c) providing good quality and affordable housing to the satisfaction of members; (d) provision without maximising profit for developers or shareholders; (e) providing housing that avoids future price increase; (f) adequate provision for members; and (g) making efforts to stabilise the housing market, which helps to ensure price stability and affordability.

Self-help social housing is unique in terms of the owner occupier's personal contribution and financial assistance from the government and/or not-for-profit organisations for completing the house.

2.8.4 Marketised Social Housing

The marketised form of social housing can be described as a set of arrangements whereby housing is allocated on the basis of demand and supply (Oxley et al, 2010). Although, marketised social housing providers operate as commercial organisations, the cost to end-users is set below that of the market housing (Oxley et al, 2010). However, in contrast to other forms of social housing, marketised social housing is provided by private housing or voluntary organisations that have a mixture of social and commercial orientations (Haffner et al., 2009). It is different in terms of government control and possible financial assistance compared with the market housing (Haffner et al., 2009), given that it does not operate under a free market like market housing. In this context, the government can direct that a percentage of the total stock of housing should be set aside as social housing. What makes it similar to market housing and private social housing is that all processes of provision are handled by private organisations or individuals.

With particular reference to SHP in Taiwan, Li (2007) argues that marketised social housing requires that providers should apply to the Board of Social Housing Construction for permission to sell the stock below market rate and set the price, size and building costs subject to the approval of the controlling board. The providers also have access to the government operated

building loans and the eligible home-buyers are entitled to housing mortgages at low interest rates (Li, 2007). This can serve as policy strategies for attracting private developers into SHP.

Table 2.6 presents types and characteristics of social housing and Figure 2.2 is the model of social housing types.

In summary, types of social housing as documented above can be linked with the models of social housing (see Tables 2.4 and 2.5) to identify their characteristics (Table 2.6) and develop a model of social housing types (Figure 2.2). For example, private social housing can fit into the private social housing model; private model with public finance plus strings; and private actor cross-subsidisation model. Therefore, beneficiaries of private social housing can enjoy any form of assistance from government assisted programmes (rent subsidy, tax rebate, low mortgage interest, etc.) either directly or indirectly. Similarly, public social housing can respectively fit into the public model with contract for certain tasks and the public model of social housing. Public social housing is a provision of governments or government agencies for assisting low and medium income households. Self-help social housing fits the categories of the private social housing model and the state-agent model respectively. Marketised social housing can be classified as a product of the private actor cross-subsidisation model and the state-agent model and is a form of social housing because its production activities and costs to beneficiaries are government controlled.

Table 2.6: Characteristics of Social Housing Types - England

Characteristics	Categories of Social Housing						
	Public Social Housing		Marketised Social Housing		Self-help	Private Social Housing	
Nature of Holding	Public-owner occupied	Public-rental	Private ownership	Private rental	Private ownership	Private-owner occupied	Private-rental
Provider	Public agencies	Public agencies	Voluntary organisations	Voluntary organisations	Individuals through subsidies	Housing associations	Housing associations
Regulation	Housing laws	Housing laws	Less regulated	Less regulated	Less regulated	Housing laws	Housing laws
Price/Rent	Controlled	Controlled	Below market	Below market	Below market	Controlled	Controlled
Management	Public Agencies	Public agencies	Provider	Provider	Occupier	Provider	Provider
Motive	Political/social	Political/social	Social	Social	Personal Satisfaction	Not-for-profit	Not-for-profit

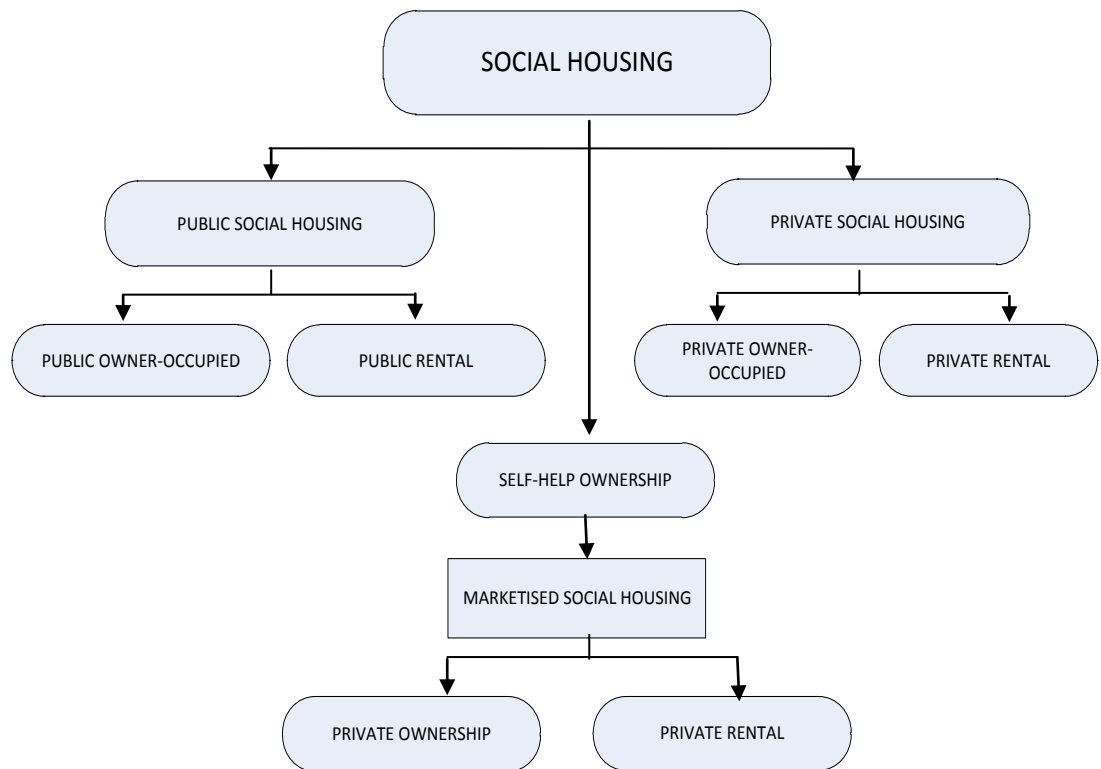


Figure 2.2: Types of Social Housing in England

2.9 EVOLUTION OF SHP IN THE UK

Historically, it is generally acknowledged that social housing in the UK started with charity houses which were established as far back as 10th century, to provide a place of residence for the poor, old and distressed people (St. Cross Hospital News, 2011). The available record shows that the first charity house was founded in York by King Athelstan and the oldest still in existence is the Hospital of St. Cross in Winchester, founded between 1132 and 1136. According to the available documentary evidence, other notable ones are the Great Hospital, Norwick – Norfolk (1249) and Plumtre Hospital in Nottinghamshire (1392) (St. Cross Hospital News, 2011). Since its inception, SHP has passed through many stages of development and has been subjected to different implementation strategies (Tutin, 2008; Greenhalgh and Moss, 2009; Ronald, 2013).

For example, the evolution of social housing can be discussed within the confines of how it operates in the UK. What is generally acknowledged is that in the UK, the issue of SHP has been for long accorded a priority (Greenhalgh and Moss, 2009). For example, housing as a welfare issue came to the fore in the late-nineteenth century largely as a result of slum formation generated by intensive industrialisation and urbanisation (Ronald, 2013). These decisions were based on a strong political will to deliver social housing for meeting housing needs; particularly

low-income households, which cannot access decent housing on their own without a form of assistance. The country also has efficient legal and administrative frameworks for supporting SHP. In addition, there is the evidence to suggest that the UK has undertaken series of reforms aimed at positioning SHP appropriately in order to meet housing needs.

In this context, discussions on the evolution of social housing can follow three phases of development in the UK. The study by the Housing Shareholders Advisory Group (2010) shows that three phases of policy-setting are evident, thus time periods of the phases cover 1800s to the two World Wars – the era of housing the poor; 1950s to 1970s – the golden age era or welfare state; and the post crisis of 1980s to date – the reform era or post-welfare era (See Table 2.7).

Apart from the three main phases, many others have been identified within the time frame. Greenhalgh and Moss (2009) provided five phases between 1890 and 2008. However, the three periods are considered appropriate given their significant distinct and that they are well spread to reasonably cover the era of SHP in the UK to date. The timeline was considered reasonable as it captures every important landmark, showing every development and reasons for it in the history of SHP. Generally, the three main periods are symbolic to the changes that have taken place in the delivery of social housing.

Table 2.7: Three Phases of SHP

	Housing the Poor	Golden Age	Reform
The Period	1800s to World War 1& 11	1950s – 1970s	Post Crisis of 1980s to date (Modernisation)
Target	The most needy, typically the urban poor in inter-city slums	Broadly based, benefiting more income groups, triggered by returning soldiers, marriages	Europe stays broadly targeted but Commonwealth, NZ trend to residual needs
Funding	Private finance, philanthropic contributions, State participation rises from the 19 th Century.	Central, local government. Subsidiaries are on producer side, targeted at assets	Reforms shift housing responsibility and administration from Government. Also a move to consumer subsidies.
Subsidies focus	N/A	General subsidies targeted at asset e.g. £x per Y house/household	Personal subsidies targeted at individuals' incomes
Supply charge	Localised	Significant supply increases – “goldenage” of social housing	Dwindling new builds, more spend on redevelopment and backlogged maintenance
Political context	Liberal capitalism	Welfare state after WW2	Post welfare state

Source: Adapted from Housing Shareholders Advisory Group (2010)

2.9.1 UK Social Housing: 1800s to the Two World Wars

Generally, social housing in the UK, referred to as council houses, council estates, council housing or local authority houses, is built and managed by developers without a profit motive. Smith and Oxley (1997) describe it as a form of housing which is generally provided by the council, social or charitable organisations and housing associations at affordable prices and allocated according to need, as against the private rental sector, and offered according to the free choice of the landlords. According to CECODHAS (2012), apart from Northern Ireland, where it is provided only for rent, social housing in other parts of the UK includes the provision of rental dwellings, affordable home ownership, as well as shared ownership schemes. It is provided by councils through housing authorities and not-for-profit organisations such as housing associations.

A study by Malpass (2001) shows that the Industrial Revolution in the 19th century, prompted some philanthropists, non-municipal societies and associations to embark on tenement blocks for vulnerable households; and some factory owners also built a number of village housing accommodation for their workers between 1853 and 1925. However, according to Greenhalgh and Moss (2009), it was only at the end of the 19th Century that the concept of municipal social housing entered statute law with the creation of the London County Council in 1888, followed by the legislation in 1890 empowering other local authorities to develop homes for people in need. The first major public housing project in the country developed by the London County Council was the Boundary Estate in Bethnal Green, which started in 1890 and was opened in 1900 (Greenhalgh and Moss, 2009). Councils also developed some high-quality public housing during the following eighteen years in various parts of London, Sheffield, Liverpool and Glasgow (Stone, 2003).

Literature evidence shows that the rate of development could not meet housing needs given that by the outbreak of World War I, only about 24,000 units of public housing had been built across the country (Malpass and Murie, 1999 as cited in Stone, 2003). For decades, there was little or no improvement in housing provision and World War I further caused an almost complete halt in house-building (Greenhalgh and Moss, 2009). In addition, the severe shortages caused by the returning soldiers and the population resulted in abnormal private rent increase, overcrowding, poverty and protests.

The study by Malpass (2001) documents that about 13,000 dwellings were also built by model dwellings companies and trusts before the outbreak of World War I but they were unable to keep the tempo of the development due to the fact that : (a) many individual organisations could not obtain loans from the Public Works Loans Board; (b) poor maintenance and returns could not allow the developers to meet housing needs when they were mostly needed; (c) employers of labour did not provide adequate fund to meet housing needs of their workers; and (d) high

increase in building costs during 1919-20, did not make the situation better. According to Harloe (1995 as cited in Stone, 2003) the inadequate housing provision in Britain after the World War I, private renting as the predominant tenure and the fear of the public reaction should landlords increase rents, made the government to introduce a rent control law, including increase in social housing provision by local authorities.

Although, the development of local authority housing before 1914 through 1920s was considered as a step for cushioning the negative effects of the rent control, the combination of high costs, high quality, low density and relatively low subsidy inevitably led to higher rents above the affordability level of the least well off (Greenhalgh and Moss, 2009). Unexpectedly, the public housing was being occupied by high-income households. In addition, the Great Depression of 1930s saw the emergence of a permanent public housing programme in the country and by the beginning of World War II, Britain had over a million council units of housing, representing 10% of the entire housing stock. However, it is widely acknowledged that a large number of entire housing was destroyed during the war (Malpass and Murie, 1999 as cited in Stone, 2003). Based on the above discussions, it can be argued that SHP during the period, suffered from inadequate provision, poor funding, high costs, poor affordability, low standard, poor maintenance and repairs, including inability to adequately meet housing needs.

2.9.2 UK Social Housing: 1950s to 1970s

The period following World War II has been regarded as the era of reconstruction. Between 1945 and 1979, local authorities were the major providers of social housing with about one half of all new output concentrated in the subsidised local authority sector, while the role of non-profit providers was insignificant (Whitehead, 2007). For example, the size of the social rented sector in England reached its height in 1979, “*when there were over 5.5 million social rented units making 31% of the English housing stock of 17.7 million units; private renting – including non-profit provision, accounted for 12% of the stock, and owner-occupation was about 57% of the total stock*” (Whitehead, 2007). The poor state of housing was a key driver to the local authorities for providing more housing units in the two decades after the World War II in response to the enormous housing shortage and as an essential part of the welfare state (Stone, 2003).

However, the high levels of social housing construction by local authorities, and the support by the central government’s grants only lasted until the first half of the 1970s (Jacqueline and Oxley, 1997). The downward trend in the construction levels can be attributed to: “*the government’s controls on the borrowing powers of local authorities; reductions in construction subsidies; the increasing emphasis on improvement of work; and greater public expenditure being devoted to housing allowances*” (Jacqueline and Oxley, 1997). Stone (2003) attributed the

development to the desire of the government to open avenues for much greater private sector involvement in publicly assisted housing. This took the form of policy support for housing associations, which enabled public funds to be channelled for establishing the modern framework for their operations and provided the basis for future growth (Malpass and Murie, 1999 as cited in Stone, 2003). An important development tending towards modernisation process in the UK is the Housing Act 1974. The Act seeks to:

“Extend the functions of the Housing Corporation and provide for the registration of, and the giving of financial assistance to, certain housing associations; to make further provision in relation to clearance areas and other areas in which living conditions are unsatisfactory or otherwise in need of improvement, to provide for the making of grants towards the improvement, repair and provision of housing accommodation and for the compulsory improvement of such accommodation”.

According to Malpass and Victory (2010) the Act is an important turning point as it enables housing associations to increase their investment and begin to compete more directly with local authorities. The Act was significant in many areas: it brought a reduction in the control which local authorities had over their levels of investment given that their budgets must be approved by the central government; there was a considerable decline in the social housing rental sector; and the ensuing restructured ownership paved a way for an increasing role played by non-profit housing associations (Whitehead, 2007). Further, the study by Malpass and Victory (2010) documents that the development in the late 1970s marks the beginning of a government retreat in public housing provision with: (a) the construction of a new model, located within a different, modernised welfare state, based on a freer and more open economy; (b) a greater role for private markets; (c) a reduced role for the state in key areas; (d) heavier emphasis on individual choice and responsibility; and (e) a more diverse pattern of service delivery organisations. According to Greenhalgh and Moss (2009) an important feature of the 1970s was the growth of housing associations, which benefitted from the ability to secure capital grants from the early 1970s, though by the end of the decade, they still only accounted for a small percentage of the total stock of the required social homes. Although the financial assistance was regarded as the first of its kind given to housing associations for the provision of social rental housing in the UK, the outcome could still not adequately meet housing needs.

2.9.3 UK Social Housing: 1980s to Date (Modernisation of Social housing)

This period has been regarded as an era of reduction in public expenditure, falling grant rates and increased competition for scarce resources, in which housing associations, rather than local authorities have dominated output (Holmans et al., 2007). It is generally believed that the development has caused a remarkable reduction in the management of social housing by the public authorities. However, the study by Hills (2007) shows that despite becoming much

smaller as a proportion of the total housing stock, nearly 4 million households still benefit from SHP. The development suggests that housing systems, especially in market based economies, are dynamic and open to both short and long term changes (Malpass and Victory, 2010).

Changes in the stock and tenure of social housing between 1961 and 2005 can, therefore, be regarded as part of the effects of the reform given the major restructuring in the stocks of social housing owned by public agencies and private not-for-profit organisations, during the period. The study by Malpass and Victory (2010) shows that, housing associations' activities increased markedly in the 1970s while council housing began to fall in numerical terms in the 1980s.

In addition, registered social landlords (RSLs) or housing associations are able to build affordable housing while local authorities are now able to create local housing companies known as arm's length management organisations (ALMOs) to manage public social housing. Varying reasons necessary for the modernising changes in the provision and tenure in the social housing sector have been proffered. Such changes are not peculiar to the UK but cut across many developed countries, and are mainly based on economic crises. In the UK, the need for the change has been attributed to the fact that the economy became much more unstable than it had previously been since 1945 (Holmans et al., 2007).

For example, five sub-periods have been identified as: "*(a) near economic crisis in the mid-1970s; (b) recession, in the early 1980s; (c) recovery and boom, with peaks in 1989 and early 1990; (d) recession in the early 1990s; and (e) recovery and more stable growth in the late 1990s*" (Holmans et al., 2007). The 2007/2008 global economic crisis was another major reason that has kept the reform in the social housing sector on-going. The global economic crisis has made stakeholders in SHP - governments, non-profit organisations and financial institutions, vulnerable given the inadequate funding of new housing development and the renovation of existing old houses in terms of poor mortgage financing and grants, causing inability to meet housing needs (Burkey, 2005; Duca et al., 2010). Therefore, urbanisation problems, population increase, economic crises such as the global economic crisis and the increasing need for the provision of other social services like health, education, transportation and security can be identified as major contributing factors to the need for the on-going reforms/modernisation in the social housing sector.

Similarly, Malpass and Victory (2010) identify two factors, which combined to cause the modernisation in the social housing sector as: the continued growth of the popular and politically endorsed owner occupier market and the declining supply of private rented housing. The development made local authorities to be responsible mainly for the provision of housing for the low income households. These factors reflect the different roles being played by housing authorities (supervisory role), Arm's Length Management Organisations - ALMOs

(management of public social housing) and RSLs (development of new social housing) in the UK.

Heavily regulated by the central government, the consensus of opinions is that modernisation in the social housing sector has evolved gradually from public to private not-for-profit provision. The process has seen the retrenchment of the public sector from many direct operational functions to a greater emphasis on the state as a regulator and facilitator with a more decentralised form of direct management of SHP (Gibb and Nygaard, 2006). Another remarkable characteristic of the modernisation, particularly since 1980s, is that the government as a regulator retains a significant responsibility for the operation of the sector (Gibb and Nygaard, 2006).

According to Malpass and Victory (2010), the modernisation process is policy driven rather than market driven and it has meant different things at different times. Therefore, modernisation of social housing should not be interpreted as endorsing any claims made by governments that equate policy modernisation with improvement; rather it is a way of looking at what has happened, a way of retrospectively making some sense out of a series of policy developments over a relatively long period (Malpass and Victory, 2010). Reforms in the sector, therefore, should aim at improving the governance structure of social housing in order to better deliver an end product by improving the efficiency and quality of delivery in accordance with both political and social expectations (Gibb and Nygaard, 2006). The general argument is that the context of the modernisation strategies during this period does not translate to adequate provision or meeting the housing needs; rather it can be regarded as a policy shift.

2.9.4 UK Social Housing Allocation Policy

SHP in the UK has been subjected to various allocation policies, which suggests that social housing is of enormous importance. The introduction of the 1957 Housing Act required councils using 'date-order' for considering specific needs factors like overcrowding, insanitary conditions, social and medical grounds, when allocating accommodation through special committee or official panel decision making (Greenhalgh and Moss, 2009). The 1977 Housing (Homeless Persons) Act gave councils a duty to find housing (not necessarily their own) for homeless households in priority need. This made some of the councils prioritise homeless households over waiting lists and special cases, when offering housing (Greenhalgh and Moss, 2009).

Reductions in development programmes and losses through RTB purchases led to shortages of social housing in many areas and move to ration council housing on a strict needs basis. Many councils changed from a 'waiting list to a point or banding system' in the mid-1980s. For example, more stringent allocations rules were laid down by the 1985 Housing Act, and

flexibility was further limited by s.167 of the 1996 Housing Act which forced councils to publish allocations plans explicitly stating how they would meet the needs of those in reasonable preference groups in allocating their own property and nominating to housing associations (Greenhalgh and Moss, 2009).

According to Greenhalgh and Moss (2009), social housing allocation policy in the UK was initially based on the traditional practice, in which:

- Private landlords applied ‘the sons and daughters principle’, which gave a collective right to tenants’ families and allowed established tenants to secure new tenancies for family members, particularly those who performed well and were good neighbours.
- The ‘ladder principle’ adopted by municipal housing managers as local government took over from private landlords, whereby the quality housing would be reserved for those trustworthy tenants of long standing, pillars of local society, and who had contributed greatly to the progress of the neighbourhood.

However, a recent development is that social housing may only be allocated to the people who are qualified and housing authorities in England are given the power to determine what classes of persons are or are not qualified to be allocated housing (Shapps, 2012 cited in Department for Communities and Local Government, 2012). According to the London Borough of Hillingdon (2013), the key objectives of social housing allocations policy are to:

- Provide a fair and transparent system by which people are prioritised for social housing.
- Help those most in housing need.
- Reward residents with a long attachment to communities.
- Encourage residents to access employment and training.
- Make best use of the social housing stock.
- Promote the development of sustainable mixed communities.

Shelter (2009b), presents two systems of allocation as: traditional and choice-based letting (CBL). The traditional allocation scheme allows the local authority to use points or bands based for assessing applicants’ housing needs, determining their priority, and making an offer of appropriate accommodation to households with the highest number of points or in the highest band. CBL was introduced in 2001 to enable applicants for social housing to bid for vacancies that are advertised through the local press or website (Shelter, 2009b).

According to London Borough of Hillingdon (2013), based on the Housing Act 1996 (as amended) local authorities are to give reasonable preference in their allocations policies to people with high levels of assessed housing need:

- People who are homeless as defined by the Housing Act 1996, Part VII,

- People occupying unsanitary or overcrowded housing, or who are otherwise living in unsatisfactory conditions,
- People who need to move on medical or welfare grounds, and
- People who will suffer hardship for lack of job opportunities and special medical facilities if they are unable to move to a particular locality or district.

The 1996 Housing Act, Part VI - Allocation of Housing Accommodation as amended by The Homelessness Act 2002 – gives direction on the way that social housing is allocated (London Borough of Hillingdon, 2013). In addition, new flexibilities were introduced in the Localism Act 2011, and new regulation and statutory guidance, issued in 2012, directed local authorities on framing their allocation policies (Surrey Heath Borough Council, 2013). This enabled Surrey Heath Borough Council (2013) to embark on a joint allocation policy with Accent Peerless Limited using a combination of the legal requirements and what is considered necessary locally to meet the housing needs.

According to the Communities and Local Government (2012), the policy objectives of the Localism Act 2011 enable housing authorities to determine which applicants on their waiting lists do or do not qualify for an allocation of social housing within their district; to strike an appropriate balance between meeting the needs of existing tenants and new applicants for social housing; and to ensure that the priority for social housing goes to those in the greatest need.

The allocation of housing by a housing authority is defined in section 159 (2) as:

- Selecting a person to be a secure or introductory tenant of housing accommodation held by them (i.e. by that authority);
- Nominating a person to be a secure or introductory tenant of housing accommodation held by another person (i.e. by another housing authority);
- Nominating a person to be an assured tenant of housing accommodation held by a Private Registered Provider (or Registered Social Landlord in Wales).

Social housing is important on one hand for those who have secured the accommodation and for future beneficiaries on the other hand and can create communities where people can choose to live and prosper (Shapps, 2012 cited in Communities and Local Government, 2012).

2.9.5 Housing Act 1980

Significantly, the change for modernisation came with the enactment of the Housing Act 1980, which gives the right-to-buy (RTB) to the occupiers of the social rental homes who are sitting tenants. The Act increased owner-occupation of homes from 56% to 68% of all homes and half of this growth is attributable to council tenants, who bought the homes they were living in (Greenhalgh and Moss, 2009).

According to (Wilson, 1999), the main features of the legislation are:

- A statutory RTB for most council tenants and tenants of non-profit housing associations of three years' standing, with exceptions for elderly and disabled tenants and other minor categories.
- Strict statutory procedures on the implementation of the RTB, including powers for the Secretary of State to intervene.
- Discounts on the market value ranging from 33% after 3 years' tenancy to 50% after 20 years. A cost floor applied to prevent dwellings built after 1974 from being sold at less than the cost of providing them.
- Right to a mortgage from the local authority with the Secretary of State having powers to determine income and age limits for mortgage qualification.
- Repayments of discount where a resale occurs before 5 years, and pre-emption clauses in designated rural areas.

There is evidence to suggest that the RTB law, which came into effect from 3rd October 1980, has made a number of impacts to the social housing sector. For example:

- It reduced substantially the role of local authorities in the housing market and epitomised the government's concentration on the owner occupied housing while housing associations have been promoted as the main builders of new social housing (Jacqueline and Oxley, 1997).
- It has improved the governance structure of social housing in order to better deliver an end product, by improving the efficiency and quality of delivery in accordance with political and social expectation (Gibb and Nygaard 2006).
- It provides avenues for competition and encouraging corporate (for profit) and voluntary (not-for-profit) providers, and incorporates new system designs, new funding and financial arrangements, new relationships between the centre and periphery and new relations between state and citizens (Clarke et al., 2000 as cited in Malpass and Victory, 2010).

However, there has been a large reduction in the social housing stock caused by existing tenants exercising their RTB, as well as a reduction in the numbers of new social housing over the last few decades (Rutter and Latorre, 2009). As a result of the sale of local authority housing in the 1980s and the failure to build sufficient homes to maintain stock levels, the provision has become more tightly constrained and social housing today only has the capacity to house those in the greatest need (Shelter, 2009a). This suggests that as good as the RTB regulation might be, it has had negative consequences on SHP and beneficiaries. The RTB and less new build social housing has occurred at a time when there has been an increase in the number of households in

the UK, caused by greater longevity, marital breakdown and to a lesser extent, immigration (Rutter and Latorre, 2009). These factors have contributed to larger social housing waiting lists in many parts of the UK (Rutter and Latorre, 2009). Although the RTB had raised the level of home ownership, the homelessness legislation had provided a safety net for eligible families, and the planning system had also helped to protect the countryside, nonetheless, they have contributed to the “residualisation” of social rented housing, which in turn created concentrations of poverty and exclusion and, by targeting subsidies on the poorest tenants and reduced incentives to work (Holmans et al., 2007).

Residualisation is referred to a situation whereby social rented sector has become a preserved of the poorest households in the society (Clarke and Monk, 2011). According to Williams (1999) residualisation is a process in which a residue is created when people move in some number from a neighbourhood or community because they believe it is no longer a desirable place to live, and the left over is a social residue of less enabled people. According to Priemus and Dieleman (2002), appropriate steps should be taken to prevent social housing from becoming marginalised and stigmatised as a result of the reduction in government intervention programmes and poor subsidies for the provision of housing. This can be achieved through the following strategies (Priemus and Dieleman, 2002):

- Ensuring the continuity of non-profit housing associations, with a clear mandate to provide for households with varying incomes.
- Provision of a good government-supported guarantee system so that stakeholders in the social housing sector can obtain loans with a relatively low interest rate from financial institutions.
- Promote the provision of new social housing to address increasing demand.
- Maintaining a robust system of income-related housing support.

2.9.6 Tenure Structure in the UK Social Housing

Mullins and Murie (2006 as cited in Pattison et al., 2010) describe tenure as the legal status and rights associated with different forms of housing ownership and occupancy. Housing tenure is described by Shelter (2009b), as the legal status under which people have the right to occupy their accommodation under two common forms of tenure: home-ownership such as homes owned outright and mortgaged, and renting such as social rented housing and private rented housing. Pattison et al. (2010) identify two existing difficulties when considering housing tenure in the UK. The first is that there is no broad agreement on the number of tenure that exist in the UK, except with the distinction between owning and renting (social and private renting). The second is related to the diversity that exists within particular tenures. According to Pattison et al. (2010) the diversity can arise in three main areas: where two households are both referred to

respectively as home owners of two separate apartments within a structure, but one might have fully paid for the home while the second may still be on mortgage; confusion from mixed tenure, where one occupier has fully paid for a portion of a building and another occupier still has a mortgage loan to pay on the other part; and legal distinctions between leasehold and freehold agreements in owner occupation.

Generally, the three types of tenure in the UK are: owner occupation, private renting and social renting. However, the existing tenure structure in the UK has been linked to a variety of reasons such as (Shelter, 2009b; Pattison et al., 2010):

- i. **Housing costs and income:** Costs of purchase, monthly mortgage payments rates, and average monthly costs of private renting in respect of a local authority and housing association housing vis-à-vis households' average monthly income will determine the type of tenure an individual household can opt for. Pattison et al. (2010) argue that inequality between tenure is found in both income and wealth: "*income (after housing costs) of social tenants is £204 per week compared with £390 for owner occupiers with a mortgage; and households in social housing have a median average household wealth of £18,000 compared to £411,000 for those who own their property outright showing major differences in wealth between tenure*".
- ii. **Satisfaction and aspiration:** Home-owners are more likely to be satisfied with their accommodation than those households who are renting (Shelter, 2009b). For example, "*only two per cent of owner occupiers described themselves as dissatisfied with their accommodation compared to ten per cent of private rented tenants and 13 per cent of social rented tenants*" (Communities of Local Government, 2010 as cited in Pattison et al., 2010). In addition, surveys by the Chartered Institute of Housing (2009 as cited in Pattison et al., 2010) show that in 2009, 72 per cent of adults considered owner occupation to be their preferred tenure, which suggests that there is a strong aspiration for owner occupation in the UK.
- iii. **Policy changes:** Shelter (2009b) is of the view that there has been a marked increase in the proportion of home-owners and a corresponding reduction in the level of households renting in the social sector in the last three decades in the UK. Three major policies such as RTB, stock transfers, and Mortgage Tax Relief (MTR) have made some marked turning points for determining tenure structure in the region. For example, Shelter (2009b) documents that: the RTB, "*introduced in 1980, enabled many tenants to buy their council-owned properties at a discounted price; local authorities have been able to transfer ownership and control of more than 970, 000 of their housing stock to RSLs since 1988/89; and though abolished in 2000, MTR enabled borrowers to get tax relief on their mortgage interest for the first £30,000 of mortgage*".

- iv. **Security of tenure:** Both social housing owner occupiers and social renters have significant secured legal rights that are not usually available to private tenants given that the rental agreements of the latter can be terminated at short notice by landlords or evicted upon the failure to pay mortgage loans (Pattison et al, 2010).
- v. **Mobility:** A combination of some of the factors discussed above can cause people to have preference for certain tenure against another. For example, security of tenure, transaction costs in relation to income and constraints on access to and movement within the social rented sector have been aiding mobility within housing tenure (Pattison et al, 2010). MTR has been one of the factors that contributed to the decline in the private rented sector and it was also a major driver of home-ownership (Shelter, 2009b).

In addition, findings by the Communities and Local Government Committee of the UK House of Commons (2013) have shown a number of reasons for determining the existing housing structure in the UK. These can be summarised as: (a) the regulation of the private rented sector and changes to tenancies in the late 1980s; (b) the introduction of new lending instruments in the 1990s; (c) constraints on the other two main tenures – social housing and owner occupation; and (d) economic, social and lifestyle factors leading to an increased demand for more flexible forms of housing tenure. Table 2.8 shows some key drivers that have contributed one way or another to the increasing and decreasing of the three main types of tenure in the UK.

Table 2.8: Some Key Drivers for the Recent Changes in Tenure Structure in the UK

	Owner Occupation	Private Rented	Social Housing
(A) Drivers for Increase in Relative Size	RTB sales	Lifestyle changes increasing desire for mobility	Demand for social housing
	Preferred tenure	Affordability relative to owner occupation	Financial stability of housing associations
	Political support	-	-
	Tax advantage relative to other tenures	-	-
(B) Drivers for Decrease in Relative Size	Income constraints	Investment constraints	RTB sales
	Wealth constraints	Lack of political support	Pressure on government spending
	Mortgage constraints	Tax disadvantages relative to owner occupation	-

Source: Pattison et al (2010)

2.10 SUMMARY

This chapter addresses objective 1 (see 1.2) of this research. There is the literature evidence to suggest that SHP has been an intervention programme of governments and not-for-profit organisations since around 1800s in many developed countries. Although, SHP has been in existence for several decades, there is no common acceptable definition that can properly describe social housing. An internationally acceptable definition that can assist in the proper description of social housing for effective implementation has been proposed in this chapter. Findings in this chapter also show that the four main types of social housing are: public social housing, private social housing, self-help social housing and marketised social housing. These four types are related to different models of social housing and these categories together with their sub-categories have been discussed and developed into a model of the types of social housing.

The overarching aim of social housing is to ensure equity in accessing housing, which is generally regarded as a basic human need. The intervention was inevitable due to the inability of the market housing to adequately meet housing needs. Market housing is provided based on demand, which makes it mostly beyond the reach of low-income households. The uneven distribution of income in a market economy makes it difficult for low-income earners to access decent housing without any form of assistance either from the government or other organisations. A low level of provision compared with demand level has been observed as a contributing factor to high prices and housing crises.

Findings from the UK SHP have shown that social housing has undergone three different stages: the housing the poor era, the golden age era and the era of reformation or modernisation. However, the trend of SHP during the three periods shows a general lack of ability to meet housing needs through the sector. This has been attributed to inadequate provision of social housing. Findings in the chapter have also shown that the claim of modernisation from the government perspective does not translate to quality and adequacy of provision; rather it can be regarded as a change of policy in SHP.

The next chapter discusses the concept of SD in order to examine the sustainability constituents of social housing. The next chapter has been considered necessary because of the sustainability related findings in chapter two. The outcomes will help to prepare grounds for determining how SSHP can be achieved for meeting housing needs, particularly for every household.

CHAPTER 3. SUSTAINABLE DEVELOPMENT FOR SOCIAL HOUSING PROVISION

3.1 INTRODUCTION

Having discussed the concept of social housing in chapter two; chapter three takes the discussion further to include the concept of Sustainable Development (SD) and SHP. Housing is viewed as a basic need, the provision of which under the market system is unable to be adequately met. The chapter draws on various notions and criticisms of sustainability and development concepts, before narrowing down the discussion to the expected goals of the concept of SD. The chapter documents how such goals can assist in achieving sustainability in social housing.

The general believe is that SD seeks to remedy social inequities and environmental damage, while maintaining a sound economic base in terms of the tension developed between the promotion of economic growth and the equitable provision of basic needs such as housing (Harris, 2000). Therefore, key economic, environmental and social factors of sustainable social housing provision (SSHP) are examined in order to establish what constitute sustainability in SHP. Findings from this chapter also provide background information for determining the key constituents; likely barriers to the implementation and recommendations for implementing SSHP through content analysis of relevant documents (see Section 4.10 and Chapter 5).

3.2 ORIGINS AND EVOLUTION OF SD

As a concept, SD has attracted a variety of comments, views and descriptions by scholars, professionals and policy makers worldwide. For example, Munasinghe (2003) views it as the aftermath of a series of economic, environmental and social issues over several decades, which made the world decision makers start looking for ways of solving the traditional development problems such as economic stagnation, persistent poverty, malnutrition, and illness, as well as newer challenges like environmental degradation and urbanisation. Similarly, Harris (2000) argues that sustainability problems worldwide have been caused by many countries' development activities towards improving their gross domestic products (GDP) and human development, the overall record of which, on a world scale, is open to two major criticisms:

- Uneven distribution of the benefits of development with persistent income inequalities and increasing global numbers of extremely poor and malnourished people, and
- The existence of major negative impacts of development on the environment and on social structures, including devastating natural resources and urban areas, with

developing countries mostly affected and is commonly suffering from extreme pollution and inadequate infrastructural facilities.

Munasinghe (2003) argues that the current approaches to SD may be due to the development experience over many decades, particularly in the 1950s, when attention was focused mainly on increasing economic output and consumption. It was also noted that in the 1960s, development thinking shifted towards equitable growth in terms of infrastructure development such as housing, followed by human development and empowerment through poverty alleviation, which was recognised to be as important as economic efficiency; and in 1970s, environmental issues emerged as the third key element of SD (Munasinghe, 2003). The development so far can be regarded as the first stage of SD strategies with the three important elements of sustainability emerging: economic, social and environmental.

The concept of SD gained international prominence in 1972, during which the United Nations Conference on the Human Environment was held in Stockholm, Sweden, bringing different nations together to delineate the right of the human family to a healthy and productive environment (Drexhage and Murphy, 2010). The conference was a remarkable turning point for addressing SD issues at the global level and can be regarded as the commencement of the second round of the worldwide initiatives for ensuring the attainment of SD. Most importantly, it paved the way for discussions on how to have an understanding of a clear SD idea in terms of balancing the developed nations' requirement for conservation of the environment due to the widespread negative impact of the industrial activities, with the requirement of the developing countries for industrial development. It also led to the establishment of the United Nations Environment Programme (UNEP) so as to encourage collaborative efforts for protecting the environment and improving the quality of life for the present generation without compromising that of future generation(s) (United Nations, 2002).

In 1980, the International Union for the Conservation of Natural Resources (IUNC) of the UN furthered the debate on SD by publishing the *World Conservation Strategy* (WCS). The emerging strategy was tailored towards the eradication of poverty by safeguarding the fertility and productivity of the environment, irrespective of any economic activities; failing at this leaves the human future at risk (UN, 2011). The recommendations from Stockholm were further elaborated in the published WCS, which aimed to advance SD by identifying priority conservation issues and key policy options (Drexhage and Murphy, 2010). The outcome of the steps taken at this stage suggests the importance of good governance for moderating economic activities in line with the environmental limitations and on the social side, for improving human living conditions. Growing into a wider discourse in 1980s, sustainability became an accepted method of balancing environmental resource protection, social progress, social justice,

economic growth and importantly stability for then and for the future (Higham and Fortune, 2011).

Ten years after the Stockholm conference, “*at the 48th plenary of the UN General Assembly in 1982, the WCS initiative culminated with the approval of the World Charter for Nature. The Charter stated that mankind is a part of nature and life depends on the uninterrupted functioning of natural systems*” (UN, 1982). Thus, in the early 1980s, particularly 1982 can be regarded as the end of the second stage of initiatives on SD during which, some significant decisions on the economic, social and environmental elements, and some sub-elements of SD were advanced.

The year 1983 ushered in a new strategy for launching SD initiatives to greater heights in terms of assisting in establishing a clear international definition for describing the concept. For example, the UN General Assembly’s initiative in 1983 led to the creation of the World Commission on Environment and Development (WCED), chaired by Norwegian Prime Minister Gro Harlem Brundtland. The Commission, which comprised of representatives from both developed and developing countries, was created to address the growing concern about environmental degradation and depletion of natural resources and their effect on the economic and social development (Drexhage and Murphy, 2010). The Commission was also asked to formulate “a global agenda for change” (UN, 2011) in the ways the environment and the natural resources were being utilised. Four years later, it produced a landmark report ‘Our Common Future’ (or the Brundtland Report) that provided a stark diagnosis of the state of the environment (Drexhage and Murphy, 2010). Generally, the report did not only advance the understanding of the relationship between economic activities and the environment, it reaffirmed that “*the environment does not exist as a sphere separate from human actions, ambitions, and needs*” (UN, 2011). It emphasised that though the environment is where economic activities take place, it has a limited capacity within which all attempts to improve the human lot must operate. It also showed that human beings and the environment are two inseparable entities (UN, 2011).

The Brundtland Report provided a soft landing for the UN Earth Summit in 1992 in Rio de Janeiro, generally referred to as Agenda 21. The Summit was the first UN Conference on Environment and Development (UNCED) for adopting an agenda for the environment and development in the 21st Century (UN, 2011). According to Drexhage and Murphy (2010) the Rio Summit was a plan of action that laid the foundations for the global institutionisation of SD and captured the expression “Harmony with Nature” (UN, 2011). It was a unique event that marked the 20th anniversary of the Stockholm Conference held in 1972. The Rio Declaration contained 27 principles and can be regarded as important in many respects some of which can be described as follows (Drexhage and Murphy, 2010; UN, 2011):

- It recognises each nation's right to pursue social and economic progress and with the responsibility of adopting a model of SD;
- Developed countries reaffirmed their previous commitments to reach the accepted UN target of contributing 0.7 per cent of their annual gross national product to official development assistance;
- Developed countries to provide favourable access to the transfer of environmentally sound technologies, in particular to developing countries;
- It emphasised the urgency of a deep change in consumption and production patterns;
- It put human beings at the center of SD; it was recognised that they are entitled to a healthy and productive life in harmony with nature.

Since the end of the Rio Summit, efforts targeted at resolving SD issues are still on-going. Many international, national and regional meetings and conferences are still being held in an attempt to address different aspects of the environmental challenges for ensuring the attainment of SD (Mebratu, 1998; Parkin et al., 2003). For example, in 1993, UNCED instituted the Commission on SD (CSD) to follow-up on the implementation of Agenda 21 followed by the design of a Programme for the Further Implementation of Agenda 21 in 1997 (UN, 2011). In 2002, just ten years after the Rio Declaration, was a follow-up conference, the World Summit on SD (WSSD) for the purpose of renewing the global commitment to SD and further tasked the CSD to follow-up the implementation of SD (UN, 2011).

However, despite series of summits and conferences, the recurring sustainability issues suggest that the expected success story is far from been told. For example, Drexhage and Murphy (2010) argue that those meetings were primarily for reviews of progress with the expectation of reports on a number of positive results achieved, but the implementation efforts have largely been unsuccessful at the national and international level. The CSD was created mainly to: champion Agenda 21 and subsequent expressions of UN and member-state commitment to a more sustainable world; monitor progress; and to inform the UN system and member states regarding areas where greater progress is needed (Dodds et al. 2002).

Available records of performance show that, the CSD has been a great disappointment in that it is currently a fairly ineffective champion of SD, with a scattered and overly simplistic approach, too inclined to pursue institutional harmony over the pursuit of accountability (Dodds et al., 2002). The Commission can largely be perceived as an "environmental commission" for it was not as successful in attracting participation from representatives of all three dimensions of SD except the environmental community (UN General Assembly, 2013). The world in general has made little progress in implementing programmes and policies of the UN for achieving sustainability, particularly for improving the lives of the poor (Moyo, 2009 as cited in Drexhage and Murphy, 2010). Despite the poor performance of the SD initiatives at the international level,

strategies for its implementation at the national level in many developed countries such as the UK can be considered as the right steps in the right direction (Department for Environment, Food and Rural Affairs – DEFRA, 2011a). The discussions in the following sections attempt to define SD, examine individual views about it and followed by the UK SD strategies.

3.3 DEFINING SD

The Brundtland definition: “*SD is development that meets the needs of the present without compromising the ability of future generations to meet their own needs*” (UN, 1987) was the first internationally recognised attempt geared towards having a unified definition for SD. The definition contains two key concepts (UN, 1987):

- The concept of ‘needs’, which seeks to ensure that the essential needs of the poor are adequately met; and
- The need to address every limitation arising through the state of technology and social organisations on the environment's ability to meet present and future needs.

Although SD is a term widely used by politicians all over the world, the notion is still being developed and lacks a uniform interpretation (Soubotina, 2004). This has resulted in a variety of SD definitions, mostly oriented towards separate sectors, and the emergence of a significant number of books, chapters, and articles containing words ‘sustainable’ and ‘sustainability’ in their titles (Spedding, 1996 as cited in Ciegis et al., 2009). Though, arguably, the Brundtland’s definition still remains a leading one in the SD discourse despite a myriad of proposed definitions, which encompass environmental resource protection, social progress, social justice, economic growth and stability for now and for the future.

There is evidence to suggest that the Brundtland report and its definition of SD have received criticisms, which can be anchored on different political interests, institutional objectives, professional views and background (DEFRA, 2005; Bartle and Vass, 2006). The difficulties relating to a suitable definition tend to suggest that SD is a complex and multi-domain issue, which has to combine efficiency, equity, and intergenerational equity on economic, social, and environmental grounds (Ciegis et al., 2009). However, the view in this research is that the Brundtland definition of SD cannot be totally out of place given that any outright condemnation of it, subtraction from or addition to it can be attributed to individual differences, complexity of the concept and general lack of consensus for addressing sustainability issues.

Mebratu (1998) argues that all the definitions of SD are based on acceptance that the world is faced with an environmental crisis, and instead of focusing on the criticism in the different groups of definitions, efforts should be geared towards identifying: the source of the crisis; the

core approach to the solution; and the key instrument for the solution. Drexhage and Murphy (2010) agree that although the concept of SD is widely accepted, and good progress has been made on SD metrics; yet the implementation of SD has been largely unsuccessful.

This suggests that what should be considered paramount is the understanding of what is intended to be achieved in terms of SD goals. Kates et al. (2005) establish that goals of SD can be firmly embedded in a large number of national, international, and non-governmental institutions' development programmes. Although goals can be the ultimate aim of SD, it is still important to get an appropriate definition for it. Pezzey (1992) earlier emphasises the importance of definition because using a sustainability concept without providing a fairly detailed definition can easily lead to misunderstanding and confusion. This is similar to the need for a proper definition for describing social housing, as earlier discussed (see Section 2.5).

3.4 INDIVIDUAL VIEWS AND SD

What has been regarded as one of the most striking characteristics of the term SD is that it means so many different things to so many different people and organisations (Robinson, 2004). Many studies indicate that economic literature offers definitions of SD, which are mostly oriented towards separate sectors – e.g. environmental, economic, civilisation – or emphasising managerial, technical or philosophical/ political decisions, and thus expressing rather different concepts of SD (Munasinghe, 1993; Pearce and Atkinson 1998; Pezzey, 1992; Pezzoli, 1997 as cited in Ciegis et al., 2009). Expressing a similar view, Lele (1991) observed that SD can represent different concepts like sustainable growth or sustainable change; sustainable society; sustainable economy etc. The different conceptions of the meaning of SD tend to reflect the political and the philosophical positions of those proposing the definitions (Mebratu, 1998). What appears to be consistent with some of the several SD definitions can be provided as follows:

- **International Institute of Sustainable Development-IISD (1997):** SD is for *“adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining and enhancing the human and natural resources that will be needed in the future”* (Molnar and Morgan, 2001);
- **UK government:** The goal of SD is *“to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life, without compromising the quality of life of future generations”* (DEFRA,2005);
- **The General Assembly’s resolution on SD at the local level:** *“Sound environmental, social and economic policies, democratic institutions responsive to the needs of the people, the rule of law, anti-corruption measures, gender equality and an enabling environment for investment”* (Vincent and Kenneth, 2014);

- **UN Secretary General views that:** SD *“will put people in the path that reduces poverty while protecting the environment, a path that works for all people, rich and poor, today and tomorrow”* (Vincent and Kenneth, 2014);
- **Pearce et al (1992:3) argue that:** *“SD is a development that manages all assets, natural resources, and human resources, as well as financial and physical assets, for increasing long-term wealth and well-being”* (Vincent and Kenneth, 2014).

From an individual perspective, SD comprises of types of economic and social development that protect and enhance the natural environment and social equity (Diesendorf, 1999). Diesendorf is convinced that this broad definition conveys explicitly that there are three principal aspects - ecological, economic and social - and that the ecological aspect and social equity are primary. SD from sustainable communities' perspective has been regarded as creating *“places where people will want to live and work, now and in the future, in enjoyable, well functioned, high quality environments”* (Enabling Projects Limited, 2007). In addition, a successful sustainable community: *“must meet the diverse requirements and aspirations of its existing and future residents; be sensitive to the environment and to its long terms resources; contribute to a high quality of life; be safe, socially inclusive, thriving and flourishing; well served, planned, connected and well designed; and offer equality of opportunity and good services for all”* (Enabling Projects Limited, 2007). Generally, SD can be referred to as the development that continues indefinitely, which balances the interests of different groups of people, within and among generations in relation to economic, social, and environmental (Soubbotina, 2004).

The notion of sustainability as the balance of its three constituent equities: economic equity (or prosperity), environmental equity and social equity is defined as three pillars or the triple bottom line, was coined by John Elkington in 1994 (Tuazon et al., 2013). Figure 3.1 shows the Triple Bottom Line equities.

Viewing SD from social, environment and economic, the important goals that the triple bottom line seeks to achieve can be identified as follows (Parkin, 2000):

- (i) Social (people): Seeking to adequately meet the needs of people such as health, housing, food, transportation, education, sanitation etc. without discrimination and not denying others of their own needs now and in future.
- (ii) The environment (planet): Ensuring the protection of the environment for serving as source of clean water, air and good land area for the production of goods and services for human existence for the present and future generations given that it has a limited amount of natural resources.
- (iii) Economic (profit): Economic sustainability means having access to improved social facilities that will allow people to live a good standard life, embark on viable

economic activities and be able to profitably compete with others without damaging their interests.

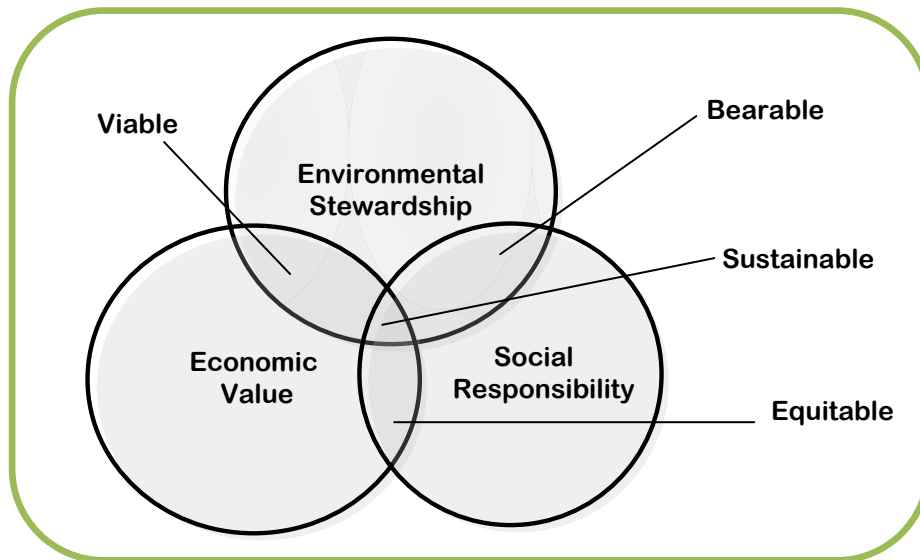


Figure 3.1: Representation of the Triple Bottom Line Equities

Source: Great Britain Forestry Commission Sustainability (2004); Mitchell, CA, Carew, AL, and Clift, R. (2004 as cited in Tuazon et al., 2013).

3.5 THE UK SUSTAINABLE DEVELOPMENT STRATEGIES (SDS)

The UN Summit in Rio de Janeiro in 1992 was a remarkable step at the international level on SD. For example, Agenda 21 of 1992 has wide range recognition as an international initiative for achieving SD. Similarly, 1994 marked the first time, particularly in the UK when a step was taken to launch a SD strategy at the national level. Thus, not only has the UK becoming a pathfinder and innovator in the pursuit of SD, the country has also become an international leader (Russel, 2007) given several of its SD initiatives and adjustments.

3.5.1 1994 National Sustainable Development Strategy (NSDS)

Agenda 21 focuses on the conservation and preservation of our environments and natural resources and requires that participating nations should develop national strategies for their SD (Higham and Chris Fortune, 2011). Following the international attempt to develop strategies for a more sustainable pattern of development of the UNCED in Rio de Janeiro in 1992, the UK government was the first to produce a NSDS in 1994 (DEFRA, 2011a). Given the step taken by the government, it was believed that the UK has played a leading role in promoting SD at home and overseas (DEFRA, 2011a) for implementing the UN's SD resolutions. For example, one of the commitments in the published strategy for SD was the development of a set of indicators for informing people, including those in government, industry, non-governmental organisations,

and the general public, about issues involved in considering whether or not the nation's development is becoming more sustainable (DEFRA, 2011b). "*Indicators are quantified information which helps to explain how things are changing over time and serves three basic functions - simplification, quantification, and communication. Indicators generally simplify in order to make complex phenomena quantifiable so that information can be communicated*" (The University of Reading, No date). The 1994 NSDS indicators are grouped within 21 SD families such as: "*the economy; transport use; leisure and tourism; overseas trade; energy; land use; water resources; forestry; fish resources; climate change; ozone layer depletion; acid deposition; air; freshwater quality; marine; wildlife and habitat; land cover and landscape; soil; mineral extraction; waste; and radioactivity*" (The University of Reading, No date). For diverse reasons, the strategy can be considered as a unique achievement for the UK government for the creation of awareness on the need for SD that seeks to involve every stakeholder in the sustainability agenda. The government took the initiative further by creating another SD strategy, *A Better Quality of Life*, in 1999.

3.5.2 1999 SD Strategy (SDS)

The NSDS prepared in 1994 was followed by a more comprehensive strategy in 1999. It can be regarded as different from the 1994 version primarily because of its more holistic approach whereby economic, social and environmental objectives were given equal weight (National Audit Office -NAO, 2010). The strategy responded directly to the commitments made at the Rio Earth Summit by outlining fundamental targets and aims for SD such as: (i) promoting social well-being by recognising the needs of everyone; (ii) effective protection of the environment; (iii) efficient use of natural resources; and (iv) ensuring sustainable growth in both the economy and employment (Higham and Fortune, 2011).

In its earlier report, DEFRA (2005) indicates that the outline reflects how the government proposed to deliver SD for achieving *A Better Quality of Life* by setting out a vision of simultaneously delivering economic, social and environmental outcomes as measured by a series of headline indicators. Similarly, the House of Commons Environmental Audit Committee Report (2004) shows that a major advancement was the introduction of the full suite of 150 indicators with 15 headline indicators that reflect the interests of the government as a whole, and also allows it to focus on the broad range of issues with which it is concerned. According to DEFRA (2004), the headline indicators showing quality of life barometer of issues intended to provide a high level of progress, and be a powerful tool for communicating the main messages of SD to members of the public. The headline indicators are in three categories as shown in Table 3.1.

Table 3.1: Sustainable Development Indicators in the UK (1999 SDS)

Sustainable Element	Headline Indicators	Areas of Influence
Economic	Economic output	Doing more or less; improving resource efficiency
	Investment	Economic stability and competitiveness
	Employment	Developing skills and rewarding work
Social	Poverty and social Cohesion	Sustainable production and consumption
	Education	Promoting economic vitality and employment
	Health	Travel
	Housing	Better health for all
	Crime	Access
Environmental	Climate change	Involvement and stronger institutions
	Air quality	An integrated approach
	Road traffic	Climate change and energy supply
	River water quality	Air and atmosphere
	Wildlife	Fresh water
	Land use	Seas, oceans and forest
	Waste	Landscape
		Land area

Source: Adapted from DEFRA (2003); Hass et al., (2002)

According to DEFRA (2000) these indicators are regarded as tools for serving a number of purposes: to measure, simplify and communicate important issues and trends; providing a benchmark for measuring future progress; assisting individuals to understand the extent of SD problems and the associations between them; creating awareness of the important issues among the public and policy-makers; and helping people to be knowledgeable about what they personally required for achieving sustainability.

In addition to the aforementioned four key aims, policies regarding the strategy were designed to take account of ten principles and approaches, which reflect key themes from the Rio Declaration on Environment and Development, the 1994 strategy, and responses to opportunities for change as listed below (NAO, 2010):

- Putting people at the centre.
- Taking a long term perspective.
- Taking account of costs and benefits.
- Creating an open and supportive economic system.
- Combating poverty and social exclusion.
- Respecting environmental limits.
- The precautionary principle.
- Using scientific knowledge.

- Transparency, information, participation and access to justice.
- Making the polluter pay.

Based on New Labour's strong belief that development, growth, and prosperity need not and should not be in conflict with sustainability (Blair, 2005 as cited in DEFRA, 2005), it decided to take SD strategy forward beyond the 1999 version. This resulted in the launching of another version of the strategy in 2005.

3.5.3 Sustainable Development Strategy (SDS) 2005

In 2005, the government launched the UK SD Strategy generally referred to as *Securing the Future* (NAO, 2010; Basildon Council, 2011). It confirms the government's on-going commitment to addressing sustainability, updating its previous strategy and responding to the 2002 World Summit on SD (NAO, 2010). While maintaining continuity with the aims of the 1999 strategy on one hand, the 2005 SD Strategy on the other hand presents the purpose of SD as a strategy for satisfying the basic needs of both the present and future generations for a better quality of life.

Building upon the four aims of the 1999 strategy (see section 3.5.2), the new strategy introduces four shared priorities for action throughout UK policy, in relation to sustainable consumption and production, natural resource protection and environmental enhancement, and sustainable communities (Bartle and Vass, 2006; Basildon Council, 2011). The strategy set out five guiding principles for SD, which was intended for achieving the desired goals in the priority areas (NOA, 2010; DEFRA, 2011b). The five guiding principles are for ensuring "*living within environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; using sound science responsibly; and promoting good governance*" (DEFRA, 2005).

Further, indicators for the 2005 strategy include all 20 of the UK framework indicators and a further 48 indicators related to the priority areas. These 68 indicators are meant to be used for reviewing progress, along with other evidence, in the aforementioned five priority areas (Adelle and Pallemarts, 2009). Regarded as an on-going concept, the SD strategy in the UK has undergone a series of reviews since its inception in 1994. The dynamic nature of the strategy suggests that the government was committed to creating sustainable communities and to regularly giving a new focus to tackling environmental inequalities (DEFRA, 2005). The underpinning goals were the commitment for achieving a strong economy, and providing decent homes with clean, safe and green public facilities, where people's health and well-being are promoted, and enjoying sustainable neighbourhood environment (DEFRA, 2005). Implications of the various SD strategies can be examined as shown in the next section.

3.5.4 Implications of the UK Sustainable Development Strategies on SHP

The three SD strategies of 1994, 1999 and 2005 respectively can be considered as important for the delivery of SSH in the UK, which is the main focus of this research. Arguably, the UK government has become a leading nation for the introduction of the principles of sustainability into SHP. Through the various strategies, efficient legal and administrative frameworks have been developed, which are important for achieving sustainability in social housing. Although, the required perfection might not have been fully achieved, sustainability in the social housing sector is being promoted through the SD strategies of the UK government. For example, the 1994 National Sustainable Development Strategies (NSDS) created awareness on the need for SD and to ensure the involvement of every segment, including social housing providers, in the sustainability agenda of the government. In addition, the 1999 SDS aimed at achieving housing needs of everyone, protecting the environment, avoiding waste of natural resources and ensuring the creation of employment opportunities. These can be considered as fundamental factors to achieving sustainability in social housing. Similarly, the five principles set out in the 2005 SDS (see Section 3.5.3) can be regarded as appropriate for achieving sustainability in social housing as they contained some key elements necessary for achieving sustainability in social housing.

The various SD strategies are dynamic in nature and this shows that the government was serious and determined to pursue the achievement of the sustainability agenda across all sectors of the economy, particularly for meeting housing needs. Similar to every human endeavour, the UK SD initiatives show some areas where success has been recorded and other areas of inadequacies (see Section 3.6). This suggests the need for a regular review of the SD initiatives. Therefore, the fact that the UK government regularly embarked on measures to review SD initiatives is for determining whether or not things are moving in the right or wrong direction. Many interested parties have also expressed their views, both positive and negative, about the UK's SD strategy, which can be regarded as the right step to perfection. Every step of the government and interested parties are tending towards enhancing efficiency.

Having discussed the various SDS in the UK and their implications on SHP, the next section discusses the analysis of the all the SDS.

3.6 ANALYSIS OF THE UK SD STRATEGIES FOR SHP

The UK's SD strategies have been analysed and criticised, which might suggest that the government's performance is a mixture of success and failure. In realisation of the likelihood of success and failure, in 1999 the government published *Quality of Life Counts* (QoLC 1999) – indicators for a strategy for SD for the UK to provide a baseline assessment from which progress might be judged (DEFRA, 2004). In addition, the government established a system of traffic lights to show the baseline assessments for each indicator with: 'green' showing

significant change, in the direction of meeting an objective (improvement); ‘amber’ showing no significant change (little or no change); ‘red’ showing significant change, in a direction away from meeting an objective (deterioration); and ‘white’ showing insufficient or no comparable data (DEFRA, 2009). The UK government uses the traffic lights system annually for assessing the performance of the SD indicators against the set aims and objectives. Table 3.2 shows the assessment of SD between 1999 and 2004.

Further, the launching of the 2005 strategy - *Securing the future* was the UK government’s response to the challenges created by the 1999 strategy - *A better quality of life*. This was reflected in the Prime Minister, Tony Blair’s anniversary speech during the launching of the 2005 National Sustainable Development Strategy (DEFRA, 2005):

“Our performance to date can be summed up by the comments of the Sustainable Development Commission in their review of the progress since 1999, published in April 2004: ‘Shows Promise, But Must Try Harder’. The Commission applauded our progress in many areas but also identified twenty key areas in which we need to take more decisive action for the new strategy and in the years to follow. This new strategy responds to that challenge”.

In 2009, based on the 2005 strategy (*Securing the Future*), the aforementioned 68 indicators with 20 framework indicators were used to review the progress, along with other evidence, using the five priority areas. The assessment of the indicators adopts the traffic lights system for indicating areas of improvement, little or no change, and deterioration. Table 3.3 shows performances of the SD framework indicators of the 2005 SDS as at 2009.

Table 3.2: Assessment of the UK's Sustainable Development Strategy (1999 SDS) as at 2004

	Headline Indicator	Objective	1999	2004
Economic	Economic output	Our economy must continue to grow	Improvement	Improvement
	Investment	Investment (in modern plant and machinery as well as research and development) is vital to our future prosperity	Deterioration	Little or no change
	Employment	Maintain high and stable levels of employment so everyone can share greater job opportunities	Little or no change	Improvement
Social	Poverty & social exclusion	Tackle poverty and social exclusion	Little or no change	Improvement
	Education	Equip people with the skills to fulfil their potential	Improvement	Improvement
	Health	Improve health of the population overall	Little or no change	Little or no change
	Housing - Conditions	Improve the condition of housing stock	Little or no change	Improvement
	Level of crime	Reduce both crime and fear of crime	-	-
Environmental	Climate change	Continue to reduce our emissions of greenhouse gases now, and plan for greater reductions in the longer term	Improvement	Improvement
	Air quality	Reduce air pollution and ensure air quality continues to improve through the longer term	Improvement	Deterioration
	Road traffic	Improve choice in transport; improve access to education, jobs, leisure and services; and reduce the need to travel	Little or no change	Improvement
	River water quality	Improving river quality	Improvement	Improvement
	Wildlife:	Reverse long-term decline in populations of farmland and woodland birds	Deterioration	Little or no change
	Land use	Re-using previously developed land, in order to protect the countryside and encourage urban regeneration	Little or no change	Improvement
	Waste	Move away from disposal of waste towards waste reduction, reuse, recycling and recovery	Deterioration	Deterioration

Source: DEFRA (2004): *Quality of Life Counts*, 2004 Update

Table 3.3: The UK's 20 Sustainable Development Framework Indicators (2005 SDS) in 2009

Indicator	Sub-indicator	Performance relative to Baseline		
		Improved	Little or no change	Deteriorated
Greenhouse gas emissions	-	•		
Waste	-	•		
Resource use	-		•	
Bird Populations	Farmland			•
	Woodland		•	
	Seabird			•
Fish Stocks	-		•	
Ecological impacts of air pollution	Acidity			•
	Nitrogen			•
River Quality	Biological		•	
	Chemical	•		
Economic Growth	-		•	
Active community participation	-		•	
Crime	Vehicle		•	
	Burglary		•	
	Violent crime	•		
Employment	-		•	
Workless households	-		•	
Childhood poverty	Before housing cost		•	
	After housing cost		•	
Pensioner poverty	Before housing cost		•	
	After housing cost		•	
Education	-	•		
Health inequality	Infant mortality	•		
	Life expectancy			•
Mobility	Walking/cycling	•		
	Public transport	•		
Social justice	-			Insufficient or no comparable data
Environmental equality	-			Insufficient or no comparable data
Wellbeing	-			Insufficient or no comparable data

Source: DEFRA (2009 as cited in NAO, 2010)

The five-year reviews for 1999 in 2004 and 2005 in 2009 as shown in Tables 3.2 and 3.3 indicate that the headline indicators have various levels of performance during the review periods. The reviews outcomes show that SD strategies have performed poorly in some areas and improved in others. This is an indication of the need for the adoption of a more radical approach for achieving SD objectives through SDS. For example, the performance of housing condition as a headline indicator showed little or no change in 1999 but improved in 2004 and unlike health, education and mobility, it does not form part of the headline indicators in 2009. This might suggest that the issue of housing generally and social housing in particular has not been properly positioned in the SD strategy.

In 2013, the first revised set of SD Indicators (SDIs) was published with a fewer (12) headlines and 23 supplementary indicators compared with the previous SDI set of 68 indicators and 126 measures (DEFRA, 2013). Similar to the previous SDIs, each measure has been assessed using a set of ‘traffic lights’. The outcome shows that performances of six headline indicators (see Table 3.4) have improved in the last five years compared with three each that have not changed or have deteriorated, respectively. The result specifically indicates that economic growth, employment generation and housing provision are deteriorating. However, this cannot be a surprise given the existing housing crisis in the UK (Shelter, 2013). The outcome can also be a major cause of the low level of sustainable social housing, particularly the old social housing stocks built over 60 years ago (Pittini and Laino, 2011). Table 3.4 shows the latest assessment of change for the latest five-year period after the 2009 assessment.

Table 3.4: The UK’s Sustainable Development Headline Indicators as at 2013

Elements	Headline indicators	Improving	No change	Deteriorating
Economic	Economic prosperity			•
	Long term unemployment			•
	Poverty		•	
	Knowledge and skills	•		
Social	Healthy life expectancy	•		
	Social capital		•	
	Social mobility in adulthood	•		
	Housing provision			•
Environmental	Greenhouse gas emissions	•		
	Natural resource use	•		
	Wildlife bird population indices		•	
	Water use	•		

Source: DEFRA (2013)

However, the UK has been an international frontrunner in the development of SD strategies, and has developed a vast array of mechanisms, processes and organisations to help implement its SD agenda and is seemingly progressing better than many of its European neighbours (Swanson et al., 2004 cited in Russel 2007). Despite these strengths, the implementation of the UK’s various SD mechanisms, tools and processes, on the whole, can still be regarded as a mixture of success and failure (Russel, 2007). Tables 3.3 and 3.4 can be used to confirm the statement.

The inconsistency in the definition of SD can be considered as one of the issues hampering the success in the UK similar to many other nations. Despite the attempt made by the WCED in 1987 to have a common worldwide definition for SD, the concept has generated a protracted argument among policy makers and academia in terms of an acceptable definition (see Section

3.3). Having discussed the analysis of the UK SDS, the following section goes on to discuss sustainability and SHP.

3.7 SUSTAINABILITY AND SOCIAL HOUSING PROVISION (SHP)

For many decades, the significant increase in population, urbanisation, migration and problems associated with land acquisition greatly influenced the provision of houses and residential communities in order to fulfil the basic needs of the people without giving much needed considerations to the concept of SD (Pattinaja and Putuhena, 2010). However, like other forms of development, sustainability has now become a key component of new social housing development over the last decade, particularly since the presentation of the Brundtland Report in 1987 (Higham and Fortune, 2012). Social housing in many developed countries like the UK is currently required to meet higher levels of sustainability (Pickvance, 2009b). This has become an important requirement given that housing generally can have environmental, economic and social impacts from its methods of construction, building materials usage, design and technical functioning, as well as the activities and equipment being used by the household (AECB, 2006 as cited in Pickvance, 2009b). Girling (2010) argues that there is a need for achieving sustainability in social housing given the societal crisis associated with environmental degradation and failing infrastructure including inadequate provision and financial issues. Pickvance (2009b), also observes that social housing in the UK is currently required to meet higher levels of sustainability than new private housing, but since social tenants have little choice about their housing, this poses important issues about the possible coerced consumption of unsustainable housing.

The UK government has embarked on the Decent Homes Programme, overseen by the DCLG, aimed at improving the sustainability condition of homes for social housing tenants and vulnerable households in private sector accommodation in England (NAO, 2010). This has become part of the steps for ensuring the sustainability agenda of the government through which all social rented homes should be improved and, in some cases, allocated funding to enable that improvement (NAO, 2010). In December 2006, the goal of “100% zero carbon (new) housing by 2016” was announced and in July 2007 it was stated that this would be achieved by progressively toughening the building regulations in line with the revised Code for Sustainable Housing (Pickvance, 2009a). According to Forster-Kraus et al. (2009), the UK government can be regarded as being active and innovative in many aspects of housing policy. For example, the government recognises the real significance of good housing for encouraging neighbourhood renewal, poverty reduction and economic growth (Forster-Kraus et al., 2009).

“Out of the approximately 22 million homes in England, there are approximately 3.9 million (17.9%) properties within the social sector, of which 2.1 million (9.5%) are owned by local

authorities and 1.8 million (8.2%) are owned by RSL” (English House Condition Survey – EHCS, 2005 as cited in Cooper and Jones, 2009). The social housing stock is relatively old with “just over 50% of it being constructed prior to 1965 compared to approximately 60% of the privately owned stock” (Cooper and Jones, 2009). According to the DCLG (2010), “England has one of the oldest dwelling stocks in Europe with 21% of dwellings built before 1919 and 16% built between 1919 and 1945”.

Although the government pledged extra investment in housing supply to increase the number of new homes, the latest figures available being built is increasing at a slower pace than in the previous years (Shelter, 2009a). The annual output of housing for low income households in England still lies well below the performance of the mid-1990s while homelessness, housing needs and investment requirements remain resolutely high (Forster-Kraus et al., 2009). According to Pickvance (2009b), it is necessary to adequately address sustainability issues in social housing for achieving the sustainability agenda of the government and for it to become the lead sector in improving sustainable housing.

Findings by Payne (2011) show that the conventional approach to meeting the housing needs of lower and low-income households has failed in developed countries like the UK, as social housing budgets have been dramatically reduced in attempts to restore public finances, leaving nothing to increase the stock, or even maintain the existing stock to a reasonable standard. *“The degree of social, economic and environmental deprivation characterised by many public housing estates in the UK and elsewhere like India is storing up problems, of which recent riots in cities from Manchester to Mumbai may be a harbinger of worse to come” (Payne, 2011). Harrison et al. (2013) argue that: “the disparity between rental and income levels is rising, and demand outstrips supply; new supply of housing in London has historically lagged behind household projections; homelessness in London is on the increase, with 3,350 households accepted by local authorities as homeless; and household waiting lists have continued to rise across the capital in recent years”.*

The situation, therefore, requires that the stakeholders in SHP – the government and non-profit making organisations should embark on SSHP for meeting housing needs as a matter of urgency. SSH can be referred to as a form of:

“Housing that is made available by governments and/or non-profit organisations through various assisted housing programmes, built with environmental friendly and sustainable materials, have a long-term economic, environmental and social benefits without an increased life-cycle cost, and allowing not only the present but also the future generations to meet their housing needs on the overall social value basis” (Oyebanji, 2013).

Based on the above arguments, achieving sustainability in social housing requires that all sustainable issues should be considered right from the planning and design stages through to completion and occupation stages. This can be a prerequisite for providing a social housing that is not only adequate and accessible but also environmentally-friendly. MacLennan (2008) argues that most commentators would agree that SHP should be “triple A” – *adequate, accessible and affordable* – and that its organisation should be “triple E” – *economic, efficient and effective*. In addition, achieving sustainability in social housing is environmentally desirable given that “housing and household-based activities account for 24% of green-house gas emissions, 66% of water entering the network and 30% of energy consumption, and new housing accounts for 55% of all timber used in the UK” (HCEAC, 2006; WWF/HBOS, 2005 as cited in Pickvance, 2009a).

In the context of the above discussions, SSH should:

- i. Be affordable to every household and meet operating costs to residents through subsidies.
- ii. Be adequately provided so as to meet the needs of every household.
- iii. Meet the changing nature of demand in terms of technology requirements.
- iv. Be environmental friendly by using local materials as much as possible.

This implies that the overarching aim of relating sustainability to SHP is for it to bridge the gap between housing needs and supplies in terms of economic i.e. affordability, low maintenance cost etc.; environmental such as use of renewable energy, use of recyclable materials, efficient use of natural resources, etc. and social like ensuring residents’ well-being, security of lives and property, etc. Girling (2010) argues that sustainability in social housing is characterised by goals of:

- i. Increasing the gross density of development (compactness),
- ii. Provision for a broad cross-section of people in each neighbourhood and increasing transportation options (diversity),
- iii. Mixing residential areas with commercial and civic, even business areas that serve them (completeness); and, in some cases,
- iv. Allowing for land-use-change over time (flexibility).

Based on the need for achieving sustainability in social housing for meeting housing need, it is reasonable to examine the constituents, barriers and recommendations for improving the provision in relation to the three pillars of SD, which constitute the main focus of this research. This is considered necessary and similar to any form of development that is intended to be sustainable given that SSH must be economically viable, socially acceptable, technically feasible and environmentally compatible (Karuppannan and Sivam, 2009).

Therefore, relevant factors that make-up each of the three pillars of SD are examined and discussed under various headings, in this research. Accordingly, the concern about achieving sustainability in SHP and the need to examine the environmental, economic and social constituents, barriers to the implementation, and for taking appropriate steps for improving the provision, have become inevitable. The aim and objectives of this research (see section 1.2) have been considered as appropriate for examining how to achieve sustainability in social housing. Having considered the needs and challenges of achieving sustainability in social housing, the next section goes on to discuss achieving sustainability in SHP based on economic, environmental and social elements.

3.8 ACHIEVING SUSTAINABILITY IN SHP FROM ECONOMIC, ENVIRONMENTAL AND SOCIAL PERSPECTIVES

According to Leblanc et al. (2010) one of the contemporary challenges facing the social housing sector and the construction industry is the development of sustainable practices to reduce environmental impacts and to improve the social and economic aspects. Therefore, SSHP is considered in terms of achieving economic, environmental and social sustainability as discussed in the next sections.

3.8.1 Achieving Economic Sustainability in Social Housing

The concept of economic sustainability is concerned with efficient resource allocation and usage as established in economics (Harris 2000). Some key objectives of an economically SSH system have been identified as: having equal access by all households irrespective of income levels; promotion of employment opportunities; affordability; value for money; low maintenance cost; low living cost; maintenance of the capacity to meet present needs and those of the future generations; and allowing for choice by beneficiaries (Ebsen and Rambol, 2000; Zaid and Graham, 2011).

Given the categories of providers - the state and not-for-profit organisations with social or non-profit motives, economic sustainability in social housing can be achieved through various schemes like affordable rents, purchase through mortgage loans at low interest rates or other forms of subsidies (Cooper and Jones, 2009). This can facilitate SHP on a continuous basis and be financially sustainable over a long term for both the providers and beneficiaries. According to Ebsen and Rambol (2000), SSH can be made available at affordable prices within the economic capacity of the target group, otherwise the programme may fail and become unsustainable.

Although not without limitations, Mills (2003) considers government grants to providers, subsidies to beneficiaries, equity funding, secured debt or income based rent systems as some

means that can make social housing affordable. In addition, a strong government commitment to achieving sustainability can maintain and strengthen the economic viability and SSH (Mills, 2003). Through concessionary interest rates, a social housing owner-occupier can service the mortgage loan without stress and still have enough for maintaining the household. To maximise meeting housing and other policy aims, providers need to be encouraged to best use funds available to them, including increasing the level of their borrowing (NAO, 2012).

On the contrary, it has been observed that neither governments nor any other providers can individually meet sustainability requirements of social housing due to economic vulnerability (Karuppanan and Sivam, 2009). Mostly, public social housing providers are overwhelmed by the burden of the world population increase, poor economy and other social issues like security threats and high unemployment rates (Burkey, 2005). Within this context, economic sustainability in terms of affordable social housing can be considered as a ratio of price/rent to the gross annual income of a household, which differ relative to different income groups and locations (Wadhwa 2009).

The aforementioned is suggesting that the identified economic sustainability objectives can help to achieve the implementation of SSHP. According to Higgins (2013) achieving economic sustainability has some advantages not only for increasing the supply of the desired goods but can promote a country's economic growth. For example, the more the supply of SSH, the more the growth of the nation, the more jobs are created, which promote quality of life. Economic sustainability will enable the use of modern technology for adequate provision of SSH for meeting housing needs.

3.8.2 Achieving Environmental Sustainability in Social housing

SD is a pattern of resource that aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for generations to come (United Nations, 1987). Parkin (2000) takes the discussion further in order to give a better understanding of the concept of environmental sustainability with an “*all-important equation, $I = P \times C \times T$. Parkin interprets the equation as in a situation where I is the impact on the environment, P is the population (number of people), C is the consumption of energy and materials (as manifest in the dominant economic growth indicator, gross national product), and T is the technique or technology of that consumption*”. In relation to SHP, the equation can help to show that the rate of population growth in the society, the degree as well as pattern of SHP by the providers and nature and type of technology being applied by them to meet housing needs, can have a kind of impact (negative or positive) on the environment (Parkin, 2000).

Considering the danger of the impact on the environment of the varying human activities for meeting housing and other human needs, the UK government enacted the Climate Change Act

2008. The Act sets “*a target for the year 2050*” to reduce or eliminate greenhouse gas emissions from the atmosphere through: the promotion of sustainable activities; encouragement of adaptation to climate change; provision of financial incentives to reduce domestic wastes and increase the use of recyclable materials; and promote the collection of household wastes, etc. (Climate Change Act, 2008). Specifically, the Act requires the UK to achieve a reduction in greenhouse gas emissions of “*at least 80% by 2050 and 34% by 2020, based on a 1990 baseline*” (Department of Energy and Climate Change, 2013). Furthermore, the “*National Adaptation Programme*” that has been embarked upon was based on the understanding that every effort to mitigate the climate change is an economic, social and environmental challenge to every sector of society (HM, 2013). In order to address risks of the climate change and opportunities of a secured environment, the national adaptation programme seeks to achieve 4 main objectives: “*increasing awareness; increasing resilience to current extremes; taking timely action for long-lead time measures; and addressing major evidence gaps*” (HM, 2013).

These steps can assist in achieving the sustainability agenda of the government through the social housing sector given that providing social housing (consumption) for people (population) and the kind of technology being applied would require integrating efforts at achieving environmental sustainability. Harris (2000) expresses a similar view from an ecological perspective by stating that both the population and total resource demand for meeting housing needs must be limited in scale in terms of efficient use of natural resources, renewable resources and recyclable materials.

Like other forms of development, achieving sustainability in social housing requires the understanding that human beings and the environment are two inseparable components that must support each other in the SD process (Pattinaja and Putuhena, 2010). This is suggesting that the manner of achieving sustainability in social housing should give a kind of impact that will conserve and not overstretch the environmental supporting capability. This can be considered as a reasonable view that the environment should be in a consistently stable condition not only for meeting the present housing needs but also those of future generations.

SSH from an environmental perspective must ensure that all processes of interaction with the environment in the provision, usage and maintenance of houses are pursued with the idea of protecting the environment as much as possible. Harris (2000) argues that the conservation of natural capital is essential for sustainable economic production and intergenerational equity because market mechanisms do not operate effectively to conserve natural capital, but tend to deplete and degrade it. In general, environmental sustainability is a matter of minimising the pollution from the consumption of energy, water, materials and land, and maximising the use of recycled materials and renewable resources, technological sustainability is relevant in this area (Ebsen and Rambol, 2000). Thus, the argument is relevant given that SSH may require the use

of appropriate technology that conforms to the local conditions for providing durable structures, reliable and functionally constructed to a modern life standard coupled with easy and inexpensive maintenance.

Many literature findings have identified and documented key factors and objectives of environmental sustainability as follows (Adelle and Pallemarts, 2009; Abidin, 2009; Zaid and Graham, 2011):

- The use of local environmental friendly materials as local traditional materials often have a minor impact on the environment;
- The use of renewable energy such as solar or wind and ensure a reduction in greenhouse emissions in order to minimise environmental impact on the inhabitants;
- The promotion of the use of recyclable materials;
- The promotion of appropriate/modern technology;
- The promotion of effective plans and appropriate design for influencing the comfort level of occupants;
- Sustainable land use planning;
- Good location and efficient land utilisation;
- Provision of sustainable drainage systems and;
- Measures to ensure satisfactory standards of inhabitants, safety within the neighbourhood.
- Sustainability objectives:
 - Promote the use of alternative transport modes such as walking, cycling and public transport;
 - Avoid land degradation and pollution and flood free environment;
 - Reduce waste generation and achieve efficient disposal and management;
 - Increase energy efficiency generation from renewable resources;
 - Provide access for people with disabilities;
 - Avoid exploitation of renewable natural resources and reduce the overall use of non-renewable natural resources;
 - Maintain and enhance the quality of landscapes; and
 - Ensure as much as possible the retention of the environment in the original and natural form in the processes of providing, using and maintaining the houses.

It has been identified in this section that the provision of social housing like other development can have adverse environmental effects due to unsustainable use of natural resources and the type of technology. Therefore, SSHP for meeting housing needs would require the government to take necessary steps like the *Climate Change Act 2008*, to ensure the appropriate use of environmental resources and application of the modern technology. This can promote the use of

environmental friendly and recyclable materials, including renewable energy such as wind or solar for achieving environmental sustainability in SHP. Findings from the literature, therefore, show that SSHP cannot only meet the present housing needs but also those of the future generations from an environmental perspective.

3.8.3 Achieving Social Sustainability in SHP

The concept of social sustainability in SHP seeks to recognise the diverse nature of the occupiers in terms of cultural backgrounds, pattern of lives, size of households and housing needs. Pattinaja and Putuhena (2010) acknowledge that SSH is all embracing in social context as it gives room for social interaction, security and convenience, access for spiritual development, education, public health facilities as well as natural resources. SSH encourages integration, for example in the Singapore context, through the *Ethnic Integration Policy* (EIP) a good mix of residents of different races in different neighbourhoods and blocks is encouraged. According to Pattinaja and Putuhena (2010) a balanced mix of residents of different ethnic groups would encourage interaction and foster cohesion and can also assist in building a multi-ethnic, multi-religious and multi-cultural society. In addition, social sustainability can assist in bringing together low, medium and high-income earners by developing a mixed-social housing (Kates et al., 2005).

The aforementioned have been regarded as appropriate for avoiding stigmatisation, given that low income households often disregard living in housing environments meant only for low-income people for the fear of being labelled as poor, and also there is a risk of the houses being tagged as underprivileged dwelling homes (Ebsen and Rambol, 2000). Conversely, social housing in the Netherlands has been famous for its large market share and its relatively high quality, so relatively large numbers of households who do not have a low income choose to live in it because it has never been regarded as a segment only for the poor (Kempen and Priemus, 2002). Social sustainability, therefore, requires that problem of social segregation between the rich and the poor and between the young and the old to be addressed given that quite often where one lives can relate indirectly to income being earned and the peer group one belongs to (Forster-Kraus et al., 2009).

However, most of the empirical literature on social cohesion finds that the relationship between diversity and trust is negative – the more diverse a community is, the less likely individuals in it are to be trusting (Demireva, 2012). For example, a study by Lawrence (2009) shows that although diversity has both positive and negative effects on social cohesion, the disadvantage is that it can undermine both social capital and inter-ethnic relations. According to Schmeets and Riele (2010), there is a clear regional divide in the Netherlands in participation and trust levels, because religious involvement as well as various socio-economic characteristics such as non-

religious people, less educated people, people on low incomes, those living in rented houses, and people living on social benefits, are usually negatively correlated with social cohesion. Similar evidence from the US suggests a negative relationship, all because the focus in social cohesion studies is on trust – generalised (whether most people can be trusted) or neighbourhood trust (most of the neighbours in the community can be trusted), which has been frequently found to be on the opposite (Demireva, 2012).

Nonetheless, SSH is the type that promotes community bonding and a sense of belonging thereby fostering social ties through local events such as community gathering and participation in grassroots events (Zaid and Graham, 2011). A concept of SSH seeks to remedy social inequalities in the fulfilment of basic health, recreational and educational needs and participatory democracy which are crucial elements of development (Gurran, 2003). Another important social dimension relates to the gender aspect for achieving sustainability in social housing projects. Ebsen and Rambol (2000) acknowledge that particular attention to improving the capacity of women must be incorporated into the design, allocation and financial programmes of SHP. In a holistic view, Dave (2011) states that achieving social sustainability in social housing can be determined by some related indicators such as access to facilities and amenities, amount of living space, health of the inhabitants, community spirit and social interaction, sense of safety and neighbourhood as a place to live in. Table 3.5 shows the list of social indicators for achieving social sustainability in SHP.

Table 3.5: Social Sustainability Indicators

Different elements of Social Sustainability	List of Indicators
Access to facilities and amenities	<ul style="list-style-type: none"> • Average distance to nearest daily use shops, primary school, health facilities, open spaces and parks, transport nodes, bank, post office • Average number of school, health facilities and open space and park Per 1000 people
Amount of living space	<ul style="list-style-type: none"> • Floor area per person • Level of satisfaction with the size of home • Available outdoor private spaces within the home
Health of the inhabitants	<ul style="list-style-type: none"> • Health of the residents in terms of number of family member having stress related, pollution related or no health problems. • Ease of social contact (knowing people) within the neighbourhood
Community spirit and social interaction	<ul style="list-style-type: none"> • Ease of informal chats with neighbours • Records of involvement in various community activities at various levels in a year • Friendliness of the residents within the neighbourhood
Sense of safety	<ul style="list-style-type: none"> • Safety within the neighbourhood after dark • Act of vandalism in the neighbourhood • General reputation of residents in the neighbourhood

Neighbourhood as a place to live in

- Assessment of the neighbourhood in terms of attractiveness, architectural character, well maintained buildings, infrastructure, outdoors parking facilities, quality of environment, cleanliness and general appearance
 - Measured intensity of noise within the area
 - Problem of noise pollution within the neighbourhood
 - Privacy within the neighbourhood
 - Residents' satisfaction with the neighbourhood as a place to live
 - Rate of desire to move out of the houses in the neighbourhood
-

Source: Dave (2011)

The literature (Colantonio 2007; Abidin, 2009; Adelle and Pallemarts, 2009; London Borough of Bexley, 2010; Zaid and Graham, 2011) has documented a number of social objectives for achieving sustainability in social housing as follows:

- Improve the quality of life, including poverty reduction;
- Provide appropriate planning for promoting cultural differences;
- Provide a healthy and secured working environment that will promote human well-being;
- Provide skills acquisition and employment opportunities;
- Provide adequate basic services and facilities for meeting special needs;
- Improve the quality of where people live;
- Ensure an active, inclusive and safe environment, fairness, tolerance, and cohesion with a strong local culture and other shared community activities; and
- Be well connected - with good transport services and communication linking people to jobs, schools, health and other services.

The above arguments show that achieving social sustainability in social housing seeks to ensure among other benefits for residents, welfare and quality of life, social cohesion, equal access to social services, gender equality, safety of life and property as well as building a neighbourhood where people are proud to live.

3.9 STAKEHOLDERS IN SSHP

Relevant stakeholders in the implementation of SSHP are: governments and public agencies like housing corporations, housing authorities and mortgage institutions; non-profit private organisations like housing associations; financial institutions – national level like commercial banks or development banks and international level like World Bank or International Monetary Fund (IMF) etc. and members of the public or end users. These stakeholders can be regarded as important for the implementation of SSHP. Their roles can be examined from economic, environmental and social constituents of SSHP.

3.9.1 Responsibilities of Governments and Public Agencies

The justification of the initial intervention of governments in housing provision has been attributed to the failure of the housing market to meet housing needs, particularly the low and moderate-income households. Boudreax (2008) argues that the inability of the 'formal' market to provide adequate housing options for poor households, has forced them into unsustainable informal housing. Several external factors have influenced government actions for achieving sustainability in SHP. Of particular importance is Article 25.1 paragraph 61, 2002 of The UN Housing Rights Programme (UNHRP), which declares that governments should take appropriate steps for promoting, protecting and ensuring the realisation of the human right to decent housing (UN, 2002). The World Wildlife Fund (WWF) at the World Sustainable Development conference in Johannesburg in 2002, urged the UK government and regional assemblies, to commit themselves to the development of one million sustainable homes in the next five years (WWF-UK website as cited in Eccleshare et al., 2005).

According to Ramjeawon (2012), the role of the government in SD should include: provision of a long term vision and an efficient policy framework; provision of incentives for encouraging other stakeholders through regulations, macro-economic policies, information and public awareness campaigns; provides leadership by example like sustainable procurement policies and green buildings; embarking on dialogue to support community initiatives to promote sustainable consumption patterns; and engage in effective monitoring activities. For example, the affordable housing policy of the UK government seeks to provide decent mixed tenure homes for those in need; promote opportunities for home ownership; and ensuring adequate quality, flexible and opportunity of choice to those who rent (Communities and Local Government, 2006).

Ensuring affordability requires that government can subsidise the cost of purchase or rent of social housing by members of the public. Adequate funding can also be in terms of budgetary provision for social housing development, grants to developers or through enabling economic policies or strategies (tax incentives, subsidised interest rates, etc.). Like in the UK, governments can embark on appropriate policies to ensure adequate funding of the social housing sector to cover the cost of provision, which usually exceed the resources of private developers or most users (Marcuse, 2006). The general view is that the government has the power of control over all major elements of the housing sector like price, land supply, loans, interest rates, etc. (UN-Habitat, 2008).

This implies that the provision of land by the government can help to address the key issues in land accessibility for social housing development. For example, the government can make large sites available for the provision of a large-scale SSH at a moderately low cost. According to Marcuse (2006), government action is central to ensuring improvement in the housing provision given that the provision of land for housing is a key responsibility of the government to ensure

adequate provision. More than the land, adequate provision should encompass: security of tenure, which guarantees legal protection against forced evictions and other threats; provision of social services and infrastructure like water supply, job opportunities, transportation, health and education; affordable housing that is accessible to low-income households; safety measures against hazards; good location; and respect for social and cultural differences (UN-Habitat, 2009).

3.9.2 Responsibilities of Non-Profit Private Organisations

Non-profit private organisations share some responsibilities with the government in the provision of SSH. They can be responsible for ensuring affordability, adequate funding and adequate provision for meeting housing needs. The global economic crisis has made governments or private organisations, vulnerable and cannot individually provide adequate funds for the provision of SSH (Ecclesshare, et al., 2005; Dolata, 2011). Therefore, in the UK, non-profit private organisations (housing associations) are deeply involved in SHP like their counterparts in the public sector – housing authorities. A non-profit housing association is an independent organisation that provides both homes and support for people in housing need, particularly those households unable to afford decent housing through market housing (National Housing Federation, 2012). The literature evidence also shows that private organisations can also address some other aspects of SHP like provision of green buildings; use of appropriate technology; ensuring efficient use of resources; and rendering efficient maintenance and management services.

From social perspective, non-profit organisations have a significant role to play for improving SSHP, which is suggesting the need to comply with sustainability requirements and address the United Nations' (UN) priority areas and proposals for SD projects. One of the priority areas of the UN Rio+20 conference, deals with the need to give “... *attention to job opportunities associated with investment in natural capital (natural resources), a low-carbon economy, and sustainable resource management*” (Leggett and Carter, 2012). The right to adequate housing promotes security of tenure, equal access to decent housing and encourages stakeholders' participation in housing-related decision making at the national and local levels (UN-Habitat, 2009).

Non-profit developers can within their capacities create public awareness to educate members of the public about the multiple benefits of achieving sustainability in SHP like healthy living, pollution free environment and decent accommodation. UN-Habitat (2012a) requires that stakeholders should embark on awareness programmes on the advantages of sustainable lifestyle and green building, including accumulating and sharing sustainability data of the best practices. The objective of the UNHRP requires that governments and other stakeholders must

be responsible for ensuring the full and progressive realisation of the right to adequate housing (UN-Habitat, 2002). Private housing organisations can promote skills acquisition and employment opportunities through construction activities as well as ensuring security of life on sites and when the housing is in use (Karuppanan and Sivam, 2009). These measures can assist in promoting residents' satisfaction and creating the sense of a place to live (Pattinaja and Putuhena, 2010).

3.9.3 Responsibilities of Financial Institutions

The involvement of financial institutions at the international, national, regional or local level is necessary for improving the implementation of SSHP. According to Bardhan and Edelstein (2007), housing finance is through different sources like mortgage funding, commercial banks, development banks, etc., which is a vital element for creating a dynamic housing sector as well as for the growth of a vibrant financial sector. Financial institutions through various channels are responsible for addressing the issue of adequate funding. This is one major element that can largely determine the success or otherwise of achieving sustainability in SHP. Financial institutions operate at different levels of the economy for assisting other stakeholders – governments, private organisations and individuals in the provision of housing. According to the Communities and Local Government (2006), the Housing Corporation provides funds for the development of affordable housing in England through other providers and regulates and facilitates the performance of the Registered Social Landlords (RSLs) in the social housing sector.

Other sources of funding SHP can be identified as pension funds, investment funds, insurance companies, foreign investors and private investments. At the international level, Allen (2014) reveals that the European Investment Bank (EIB) *“provides invest in the UK social housing sector by giving about £1 billion a year to tackle the lack of affordable housing in the sector”*. Similarly, through Sustainable Energy Financing Facilities (SEFFs), *“credit lines are extended to local financial institutions that seek to embark on sustainable energy financing such as residential loans as a permanent field of business”* (European Bank for Reconstruction and Development - EBRD, 2013). The private sector funding is through income-generation, loans and grants. However, these sources depend largely on the state of the economy. According to the UN-Habitat (2008), SHP requires funding from the housing sector as well as through the banking and finance sector.

3.9.4 Responsibilities of Members of the Public/Beneficiaries

As beneficiaries of SSHP, members of the public have the responsibility for ensuring environmental protection. This can be achieved by living a sustainable life style, complying

with sustainable rules by avoiding waste generation in terms minimal household wastes and water usage and reducing carbon emission through sustainable energy consumption (Dave, 2011). Through dialogue and good social interaction, members of the public are co-responsible with the public and private housing developers on the issue of security of life and property (UN, 2002). Their co-operation is vital for promoting residents' satisfaction and creating the sense of a place to live.

3.10 SUMMARY

This chapter examined SD concept in relation to achieving sustainability in social housing. Basically, SD concept emanates as a result of the concern of governments, international organisations and individuals about the poor relationship between human beings and the environment over the years, particularly since 1970s. Findings from the chapter show that the UK has started to embark on SDS since 1994, which can be regarded as a positive step for promoting achieving sustainability in SHP. This was in response to the Agenda 21 of the UN summit of 1992 in Rio de Janeiro and has made the UK a leading country in the pursuit of SD.

Different organisations, scholars and individuals have expressed different views about the SD concept and definition, which has helped to establish that the entire world is faced with environmental crisis. The economic, environmental and social constituents of SSH are also established in this chapter. Findings show that achieving sustainability in SHP can be an enormous task due to the expected huge financial and technical requirements of SD. The main objective and the social motive of SHP indicate that social housing should be made available at below market price, which in most cases fall below the cost of provision.

The chapter has also attempted to identify the goal of SD for achieving sustainability in social housing. However, the more the debate on SD rages on, the more awareness is created on environmental impacts of human social and economic activities. Clearly, it is recognised that the environment serves as the source of inputs for human developmental activities, a site for dumping the waste generated and the awareness of the dangers of exceeding its limits. Despite all these, findings have shown that neither a consensus has been reached about the concept of SD nor has much been achieved in terms of sustainability in almost all sectors of the economy, particularly in SHP. Nonetheless, certain goals of SD that can assist in achieving sustainability in social housing have been identified in this chapter as follows:

- Meeting the housing needs of the present generation without compromising the needs of future generations;
- Observing environmental limits in the provision of SSH through an effective use of natural resources; efficient use of renewable and recyclable materials;

- Promoting economic, environmental and social sustainability for ensuring: economic growth; employment opportunities; skills acquisition; education; welfare and healthy living; participation and equal representation of stakeholders; and
- Good governance for creating the necessary enabling environment for the provision of SSH.

In the process of examining the concept of SD in relation to achieving sustainability in social housing, characteristics and objectives of economic, environmental and social constituents of SSH are considered. Finally, findings have shown that relevant stakeholders like governments, non-profit organisations, financial institutions and end-users have significant roles and responsibilities towards achieving sustainability in SHP.

CHAPTER 4. RESEARCH METHODOLOGY

4.1 INTRODUCTION

This chapter outlines the research methodology and the research methods adopted for this study. The research methodology deals with the research strategy as a whole including the epistemology – theory of the knowledge, and paradigm, which concerns a set of assumptions about how the research should be carried out. The research methods refer to the range of techniques chosen for this research and reasons for their choice duly explained based on the expected outcomes of this research. There are four stages involved in this research. An extensive review of the relevant literature constitutes the first stage; the second stage adopted content analysis of the relevant documents; and the third stage was a questionnaire survey approach. The final stage involved the development of a framework for the implementation of SSHP. This chapter discusses each of the stages in-depth, including the methods used to analyse the data collected.

4.2 THE RESEARCH DESIGN

As Liyanage (2006) asserts, there are many definitions of research, some narrow, others broad. Collins English Dictionary (11th edition) simply defines research as work that involves studying something and trying to discover facts about it, or a systematic investigation to establish facts or principles or to collect information on a subject. According to Creswell (2009), research is a habit of questioning what a researcher does, and a systematic examination of the observed information to find answers, with a view to instituting appropriate changes for a more effective professional service. Creswell (2009) also defines research as the process of making claims and then refining or abandoning some of them for other claims more strongly warranted. He argues further that research seeks to develop relevant and true statements that can serve to explain the situation of a concern or that can describe the causal relationships of interests.

However, this study falls into the category of social research, which seeks to answer some research questions that are frequently asked: ‘What?’, ‘Why?’ and ‘How?’ As Blaikie (2009) asserts, in social research ‘what’ questions require answers that describe the state or status of a concept; ‘why’ questions are concerned with understanding or explanation; and ‘how’ questions are concerned with intervention. According to Durant-Law (2005), the questions, ‘What exists?’, ‘How do I know?’, and ‘What is valuable?’ together form the philosophical trinity. Details about this philosophical trinity will be discussed later.

This research intends to answer ‘what’ questions that are concerned with knowledge, such as, ‘What are the key factors of the economic, environmental and social constituents of SSHP?’; ‘why’ questions are concerned with, ‘Why is the provision of social housing important?, and, ‘Why is achieving sustainability in social housing valuable?’ or ‘Why is this research so valuable?’; and lastly ‘how’ questions are concerned with, ‘How can sustainability issues (if any) of SHP be addressed?’ According to Denscombe (2010), the key decision when undertaking social research is that a researcher should be able to answer some fundamental questions in relation to their research, like those mentioned above.

The research design, which can help to give it a clear meaning, is widely described and interpreted in the literature. For example, Bryman (2008) argues that research design provides a framework for the collection and analysis of data and a choice of which reflects decisions about the priority being given to a range of dimensions of the research process. Research design is regarded as a plan of action, a private working document and a flexible set of guidelines that span the decisions from broad assumptions to detailed methods of data collection and analysis (Creswell, 2009; Blaikie, 2009). Thomas (2010) argues that research design is the logic or master plan that throws light on how a study is to be conducted, in order to move from the initial set of research questions to be answered, to conclusions.

Similarly, the research design adopted in this research serves as a road map or master plan that guides how the study has been conducted right from the initial set of research objectives to be achieved (Section 1.2) to conclusions (Chapter 10). Figure 4.1 shows the interconnection of worldviews, strategies of inquiry, and research methods that constitute a framework for a research design.

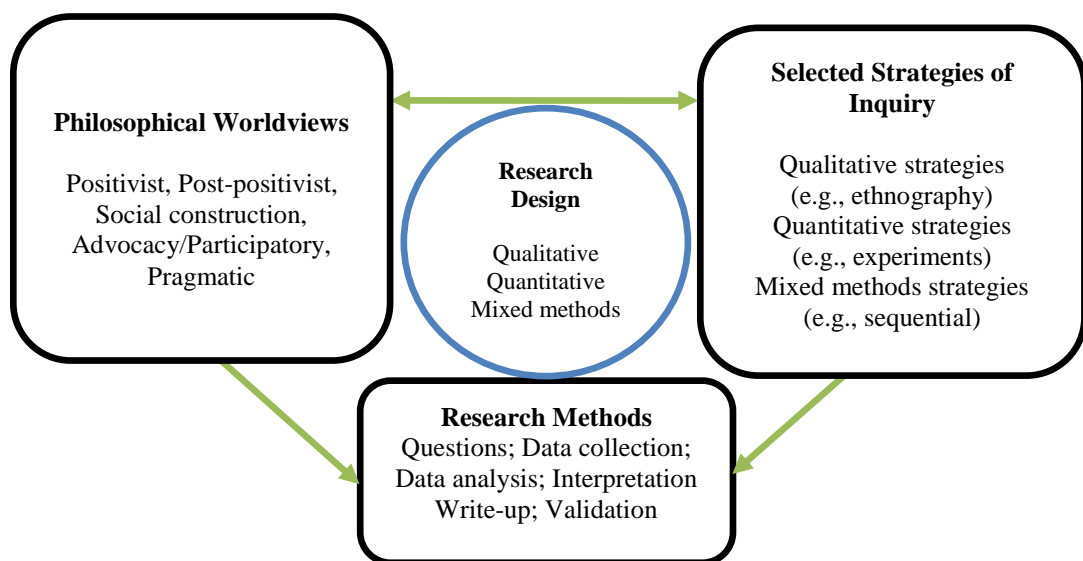


Figure 4.1: A Framework for Research Design

Source: Creswell (2008)

Accordingly, like housing design that precedes actual construction, the research design of this study precedes data collection and analysis, discussion of findings and conclusions.

4.3 RESEARCH PARADIGMS AND PHILOSOPHICAL WORLDVIEWS

The term ‘paradigm’ originated from the Greek word *paradeigma* which means *pattern* and was first used by Thomas Kuhn (1962) to denote a conceptual framework shared by a community of scientists which provided them with a convenient model for examining research problems and finding solutions to them (Thomas, 2010). It is believed that a paradigm influences the way knowledge is studied and interpreted, and its choice sets down the intent, motivation and expectations for a research study (Mackenzie and Knipe, 2006). According to Kuhn (1962 as cited in Dash, 2005), a paradigm can be characterised as “*an integrated cluster of substantive concepts, variables and problems attached with corresponding methodological approaches and tools*”.

Paradigms have been categorised and interpreted differently by different authors (Endut, 2008). For instance, Fossey et al (2002) argued that the term ‘paradigm,’ in a research context can be described as a system of ideas, or world view, used by a community of researchers to generate knowledge. A paradigm can also be described as a set of assumptions, research strategies and criteria for rigour that is shared, even taken for granted, by that community (Guba and Lincoln, 1994 as cited in Fossey et al, 2002). According to Bryman (1988) a paradigm is established as a cluster of beliefs and dictates which influence what should be studied, how research should be done, and how results should be interpreted. Therefore, paradigms are important to researchers for their requirement in forming and guiding inquiry. According to Marlow (2001 as cited in Matthews and Ross, 2010) a paradigm is a map, helpfully “*directing researchers to the problems that are important to address, the theories that are acceptable, and the procedures needed to solve the problems*”. Figure 4.2 shows what constitute research paradigm.

Similarly, a number of theoretical paradigms are discussed in the literature such as: positivist, post-positivist, constructivist, inter-pretivist, transformative, emancipatory, critical, and pragmatism (Mackenzie and Knipe, 2006). According to Dash (2005), different paradigms have taken birth due to the remarkable growth in social science research. However, Dash (2005) argues that paradigms, for the verification of theoretical propositions, can be categorised into positivism and anti-positivism (or naturalistic inquiry). However, the on-going debates on paradigms suggest that there are two widely held views about the nature of knowledge, which can be regarded as two opposing paradigms: the positivist paradigm that is associated with quantitative research approaches and the interpretive paradigm that is related with qualitative research strategies (Matt et al., 2006).

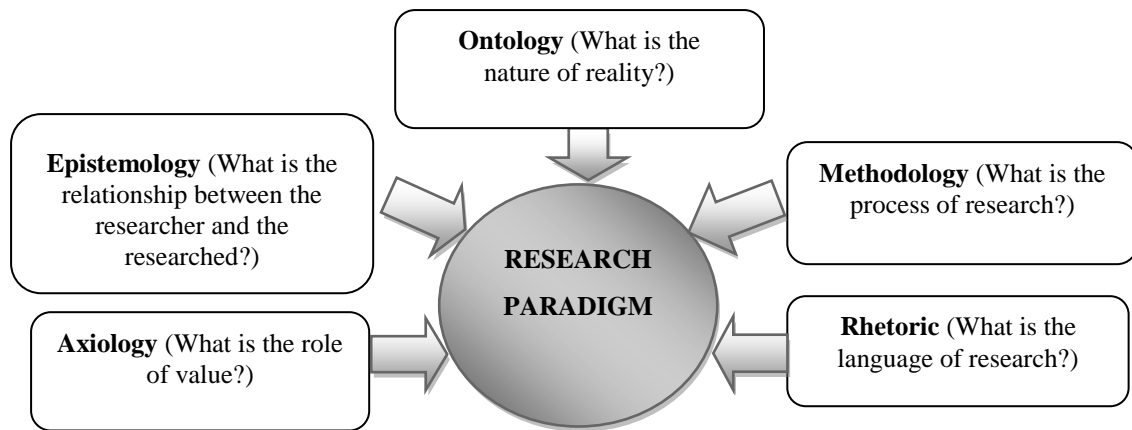


Figure 4.2: Research Paradigm – Key Questions

Source: Gunatilake (2013)

For avoiding confusion, due to the many terms and translations, five common paradigms or worldviews are identified by Yates (2004); Mertens (2005 as cited in Mackenzie and Knipe, 2006); McNeill and Chapman (2006); Creswell (2009); Thomas (2010) as follows:

Positivism: Positivism is sometimes referred to as the ‘*scientific method*’ or ‘*science research*’, and is “*based on the rationalistic, empiricist philosophy that originated with Aristotle, Francis Bacon, John Locke, August Comte, and Emmanuel Kant*” (Mertens, 2005 as cited in Mackenzie and Knipe, 2006) and “*reflects a deterministic philosophy in which causes probably determine effects or outcomes*” (Creswell, 2003 as cited in Mackenzie and Knipe, 2006). According to McNeill and Chapman (2006), positivism is a philosophical concept, and refers to a particular set of assumptions about the world and about appropriate ways of studying it. In general, positivists see society as more important than the individual, given that individuals are born, take their place in society and then die, but society continues largely undisturbed (McNeill and Chapman, 2006). This suggests that the society must address sustainability issues largely affecting the environment and the people, which are caused by human activities. Therefore, evidence has to be collected from the social world around us, and this requires empirical research to be done, requiring ‘*evidence from the real world*’ in contrast to ‘*theoretical*’ which requires analytical or abstract ideas (McNeill and Chapman, 2006).

Post-positivism: Positivism was replaced after World War II by post-positivism (Mertens, 2005 as cited in Mackenzie and Knipe, 2006). Post-positivism represents the traditional form of research, which holds true for quantitative research, by developing numeric measures of observations and studying the behaviour of individuals (Creswell, 2009).

Interpretivism or Constructivism: This is typically seen as an approach to qualitative research, which assumes that individuals seek understanding of the world in which they live and work (Creswell, 2009). The interpretivist or constructivist researcher relies as much as possible on the participants’ views of the situation being studied and recognises the impact on the

research of their own background and experiences (Yates, 2004). Interpretivists or constructivists do not generally begin with a theory (as with post-positivists) rather they “*generate or inductively develop a theory or pattern of meanings*” throughout the research process (McNeill and Chapman, 2006). The constructivist researcher is most likely to rely on qualitative data collection methods and analysis or a combination of both qualitative and quantitative methods - mixed methods (Creswell, 2009).

Advocacy, participatory or transformative: This worldview holds that research inquiry needs to be intertwined with politics and a political agenda (Creswell, 2009). Thus, the research contains an action agenda for reform that may change lives of the participants, the institutions in which individuals work or live, and the researcher’s life (Creswell, 2009). Advocacy, participatory or transformative researchers felt that the interpretivist or constructivist approach to research did not adequately address issues of social justice and marginalised peoples (Thomas, 2010). Advocacy, participatory or transformative researchers primarily rely on qualitative strategies for data collection (Mackenzie and Knipe, 2006).

Pragmatic: Researchers are free to choose the methods, techniques, and procedures of research that best meet their needs and purposes (Creswell, 2009). Pragmatism is not committed to any one system of philosophy or reality, therefore, pragmatist researchers focus on the ‘what’ and ‘how’ of the research problem (Creswell, 2009). Thus, for the mixed methods researcher, pragmatism opens the door to multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis (Creswell, 2009).

According to Kumar (2011) although paradigms may provide values, terminologies, methods and techniques to be applied in a research study, it is the purpose of the research rather than the paradigm that should determine the mode of enquiry. Therefore, in the context of this research study (section 1.2), paradigms that conform to the mode of enquiry are the positivist and pragmatic, which conform with the purpose of this research. It is to adequately answer the questions as to ‘what?’, ‘how?’ and ‘why?’ (see section 4.2) and can be related to ontology, epistemology and axiology respectively (see below). This is useful for gathering data on the social housing practitioners’ opinions on achieving sustainability in SHP.

Matthews and Ross (2010), view how paradigms tend to reflect the interests and focus of research communities, or of social scientists from a particular discipline or sharing a set of theory – informed beliefs about the social world. Guba and Lincoln (1994) describe paradigm as the basic belief system or worldview that guides the investigator, not only in choices of methodology but in ontological and epistemological ways. Endut (2008) argues that paradigm is more about the way a researcher understands and interprets all the philosophical trinity questions. Philosophically, researchers make claims about what is knowledge (ontology), how we know it (epistemology), what values go into it (axiology), how we write about it (rhetoric),

and the processes for studying it (methodology) (Guba and Lincoln, 1994; Durant-Law, 2005). The philosophical trinity questions can be discussed as follows:

- The ontology: This is concerned with what is the form and nature of a reality and what can be known about it? It seeks to find that if a ‘*real*’ world is assumed, then what can be known about it is ‘*how things really are* and ‘*how things really work*’ (Guba and Lincoln, 1994). As mentioned in Chapter 1 (Section 1.2) there is the concern with the existing nature of the reality about the conditions of social housing, and the ways it relates to the living conditions of the occupiers and the environment, similar to the argument presented by Blaikie (2009) above (See 4.2). In addition to the assumed nature of reality, there are ontological questions of the assumptions that can be raised (Saunders et al., 2012) about the way stakeholders operate and levels of their commitment to achieving sustainability in social housing.
- The epistemology: Guba and Lincoln (1994) view an epistemological question as one which is concerned with the nature of the relationship between the researcher and what can be known. Durant-Law (2005) argues that the seminal epistemological question for a researcher is – “*Can ‘real’ or ‘objective’ relations between social phenomena be identified, and if so how?*” This view has helped in this research to consider the use of quantitative (Section 4.5) methods as appropriate for determining the relationship between low-income households and decent housing in terms of achieving sustainability in SHP.
- Axiology: This is called value theory, and includes the disciplines of ethics, pragmatics, and aesthetics (Durant-Law, 2005). Unlike ontology and epistemology that deal with truth, axiology is about values and ethics, and provides the standard for the evaluation of epistemological and ontological claims (Durant-Law, 2005). The type of axiology concern in this research relates to how valuable the knowledge and expected findings can be for serving as a means to inform, transform, or enable positive change, where necessary for achieving a sustainability agenda of the government through the social housing sector. As generally believed, axiology is a branch of philosophy that studies judgment about value, given that the role that a researcher’s values play in all stages of the research process is of great importance for making the research results credible (Saunders et al., 2012). As noted by Creswell (2009) in planning this research, thought is given to the philosophical worldview assumptions in adopting the specific strategies, methods or procedures of research that can translate the overall approach into practice.

Having dealt with the issue of paradigms and philosophical questions, the following sections discuss types of research, methodology and method chosen for this research study.

4.4 TYPES OF RESEARCH

Types of research can be looked at from three different perspectives: application, objectives and enquiry mode. Although not mutually exclusive, research can be classified from the view point of: *application* as pure or applied research; *objectives* as descriptive, exploratory, explanatory or correlational research; *enquiry mode* as quantitative or qualitative research. Similarly, the four perspectives of research can be explained as follows (Kumar, 2011; Bhattacharjee, 2012):

- Exploratory research: This is often conducted in new areas of inquiry like the dearth of literature on SSHP, where the goals of the research are: (1) to scope out the magnitude or extent of a particular phenomenon, problem, or behaviour, (2) to generate some initial ideas (or ‘hunches’) about that phenomenon, or (3) to test the feasibility of undertaking a more extensive study regarding that phenomenon.
- Descriptive research: This involves careful observations and detailed documentation of a phenomenon of interest. It attempts to describe systematically a situation, problem, phenomenon, service or programme, or provides information about, say, the living condition of a community, or describes attitudes towards an issue. Descriptive research examines the what, where, and when of a phenomenon.
- Correlational research: This is to discover or establish the existence of a relationship/association/interdependence between two or more aspects of a situation or phenomenon.
- Explanatory research: This seeks explanations of observed phenomena, problems, or behaviours. Explanatory research seeks answers to what, why and how there is a relationship between two aspects of a situation or phenomenon.

As previously mentioned, this research study seeks to examine the achievement of sustainability in SHP for meeting housing needs; therefore, it is descriptive and explanatory in nature. As descriptive research, it seeks to find out what the sustainability position is with SHP; where it is particularly in the UK; and when the existing condition is. It also involves the description of the aspects relating to ‘why’ and ‘how’ of achieving sustainability in SHP. As explanatory research, it is for finding out, if or why there are any barriers and how the situation can be improved, in terms of recommendations for improving the implementation of SSHP. Sustainability issues in social housing are problems that can be making people uncomfortable and unhappy and which can be causing public friction. According to McNeill and Chapman (2006), social problems require social policy to deal with them, in terms of those actions of governments that have a direct and/or indirect effect on the welfare of the citizens of a country. However, the distinction between descriptive research and explanatory research is often very blurred, given that any explanation requires description, and it is difficult, or perhaps impossible, to describe something without at the same time explaining it (McNeill and Chapman, 2006). In addition, due to the

dearth of literature in SSHP, the exploratory aspect of the study involves the content analysis of sustainability related documents. This has helped to gather first-hand information about constituents, barriers and recommendations for achieving sustainability in SHP from economic, environmental and social perspectives (see Section 4.11 and Chapter 5).

4.5 RESEARCH METHODOLOGY

It is usually of importance for a researcher to examine types and nature of problems to be addressed from the mode of enquiry perspective. The research methodology is referred to as the philosophy or the general principle, which guides a researcher in terms of the overall approach to the topic and includes issues that need to be thought about: constraints, dilemmas and ethical choices including political, theoretical and philosophical implications of making choices of method when doing research (Dawson, 2006). It also includes the need to consider the ethical implications and consequences of research, negotiating access to the field, and the role of values attached to research by the researcher and the audience (Matt et al., 2006). Therefore, the research methodology can be regarded as the process being adopted by researchers for finding out answers to research questions.

There are three main approaches available to researchers. For example, Creswell (2008) argues that worldviews, methodologies, and methods all contribute to a research design that tends to be quantitative, qualitative, or a mixture of the two, which are specific research strategies that involve the forms of data collection, analysis, and interpretation that researchers usually propose for their studies. In contrast, Kumar (2011) argues that there are two approaches to enquiry: the structure approach, which consists of everything that forms the research process such as objectives, design, sample, and the questions that are planned to ask respondents – quantitative research; and in contrast the unstructured approach, which allows flexibility in all aspects of the research process - qualitative research.

The debate on research approaches has led to two schools of thought: (a) a group of social researchers who believe that there is a need to borrow approaches, designs, and methods that are commonly used within the natural sciences such as experiments – a deductive approach; and (b) others who argue that the social world is different from the natural world, therefore, effective social research, needs to design its own methodology (through an inductive approach) – designs and methods that are more relevant and fit for purposes (Matt et al., 2006). Much of the debate has centred on the issue of qualitative versus quantitative inquiry, which has been considered as the best and more scientific (Dawson, 2006).

What differentiates one approach from the other is in their usage. For instance, the qualitative approach is used for collecting, analysing, and interpreting data by observing what people do and say, whereas quantitative research refers to counts and measures of things (Bryman, 2008).

However, sometimes confusion can arise in the way the two are jointly referred to in the literature to mean two different things. For example, Mackenzie and Knipe (2006) observe that the terms qualitative and quantitative are often used in two distinct discourses; one relating to what is more commonly understood to be the research paradigm – “*how one understands the world and the purpose of the research*” and the second referring to research methods – “*how data are collected and analysed*”.

In addition, qualitative and quantitative methodologies differ in the ways in which data are collected, the nature of the data itself, the methods used to analyse the data and the ways in which results are interpreted (Haas, 2002 as cited in Liyanage, 2006). Qualitative methodologies often require the personal interaction of the researcher and those people whose experiences are the subject of the research, and involve the use of interviews, observation or analysis of documents (Liyanage, 2006). In contrast, a quantitative researcher may never see his or her subjects or respondents, since quantitative methods require the use of standardised measures, in which responses are assigned to pre-determined categories to which numbers are assigned (Liyanage, 2006).

4.6 CRITERIA FOR SELECTING APPROPRIATE RESEARCH METHODOLOGY

Crotty (1998) argues that while commencing research work, a researcher must first put considerable effort into answering four questions: (a) what methodologies and methods will be employed in the research? (b) how can the choice and use of such methodologies and methods be justified? (c) what theoretical perspective lies behind the methodology? (d) what epistemology informs this theoretical perspective? Accordingly, answers to these questions are duly considered in this research study. Ryan (2006), states that what should guide a researcher in the selection of any research strategy should be the type of research questions to be answered or research objectives to be addressed. Creswell (2008) argues that the nature of the research problem; accepting authority or audience; and the researcher’s experience in terms of technical skill, and knowledge of scientific writing, statistics, and computer statistical programmes are some of the criteria for selecting a research paradigm.

Furthermore, what can influence the choice of a methodology are: (a) methodology preference; (b) structure of research projects; (c) time limit for completing the research; (d) and nature of data to be collected (Matt et al., 2006). Although the choice between the two commonly used methodologies (quantitative and qualitative approaches) has been regarded as a crucial decision to researchers, neither of them is better than the other given that they are just different and both have their strengths and weaknesses (Dawson, 2006). This can be one of the reasons why some researchers have used a single method, while others have used a mixed method approach for

their research studies. As many of them articulate, no matter what or how many methods are used, what is chosen should be good enough to fulfil the aim and objectives of the particular research study (Liyanage, 2006).

There is quite a lot of literature supporting the use of a single method – a quantitative or qualitative approach for achieving diverse research objectives in social science and related fields of study in the construction industry. For example, the study by Odeyinka (2003) used a quantitative approach to carry out the development of a decision support model for the construction contractor. Due to the quantitative nature of the research, data for the study was generated through a combination of opinion-based questionnaire surveys for primary data and from archival materials for secondary data. Similarly, Ndubueze (2009) used a quantitative research strategy for studying urban housing affordability and housing policy dilemmas in Nigeria. Higham and Fortune (2012) used a quantitative research strategy to evaluate the state of the art relating to the theory of strategic investment appraisal together with the perceived importance of sustainability in the social housing sector. According to Higham and Fortune, the focus of their study called for the use of a measuring instrument that allowed data to be collected from a large number of practitioners in the field and therefore, considered the use of a questionnaire survey as a tool for collecting data as appropriate.

Similarly, in the context of this research, a quantitative approach and opinion-based questionnaire survey are considered appropriate for gathering data. This is because the focus of the research requires the use of the methodology and method that can allow data to be collected from the large number of social housing practitioners in England. Like the above mentioned studies, this study adopts the quantitative methodology and questionnaire survey to generate economic, environmental and social sustainability factors based on constituents, barriers and recommendations for the development of a framework for implementing SSHP.

4.7 JUSTIFICATION OF THE RESEARCH METHODOLOGY

Similar to many previous research studies, this research makes extensive use of a quantitative research approach to address a range of 6 research objectives (see Section 1.2). According to Bryman (2004) a quantitative approach is considered best for research that seeks to compare data in a systematic way, make generalisations to the whole population or test theories with a hypothesis. Creswell (2008) considers quantitative approach as appropriate when researchers want to compare or generalise information extensively within and from a specific population or between different population areas or within a particular geographical, social or income group like countries, regions, or low-income groups, etc. Factors that also favour the choice of quantitative approach are (Kura, 2012):

- It can be employed during latter stages of research;

- All stages of the research are carefully designed before data is collected;
- It employs instruments such as questionnaires, or equipment to collect numerical data;
- Data are in the form of numbers and statistics; and
- Quantitative data is more efficient and objective.

Kura (2012), argues that quantitative research aims to classify features, count them, and construct a statistical model in an attempt to explain what has been observed, which can be made easy because the researcher would have known what to look for and where to get them.

Researchers using a quantitative approach are doing so with the intent of specifying the type of data to be collected in advance of the study and form an opinion that the type of data to be gathered are numeric on scales of instruments (Creswell, 2008). Thus, the main features of quantitative research, therefore, are compatible with the nature of this research.

In the context of this research, features of SSH are classified into economic, environmental, and social constituencies and further determine the key barriers and recommendations for improving the implementation of SSHP. The classifications are done easily due to the knowledge about what to look for and where to get them. Although there is dearth of literature on SSHP, a variety of literature evidence exists, particularly on social housing, SD, sustainable construction and affordable housing, which represents the different areas covered by this research. In addition, social housing practitioners (housing associations and housing authorities) in England are considered appropriate as sources of gathering data in this research. Similar to the findings by Ryan (2006), a quantitative approach can help to show that the key factors of the aforementioned sources for gathering data and features of SSH are numerically significant; and can provide readily available and unambiguous information about the concept.

4.8 SELECTION OF RESEARCH METHODS

Having considered a quantitative approach as an appropriate methodology for this research, the next step is concerned with the selection of an appropriate method for gathering data for achieving the research aim and objectives. A research method is simply a technique for collecting data, which can involve a specific instrument, such as self-completion questionnaire, a structured interview schedule, or participant observation whereby the researcher listens to and watches others (Bryman, 2008). There is the evidence to show that quantitative research generates statistics through the use of a large-scale survey instrument, such as questionnaires or structured interviews (Dawson, 2006; Creswell, 2008; Higham and Fortune, 2012).

Odeyinka (2003) argues that several methods are open to a researcher for data collection. Research methods are the tools for gathering data about the social world, such as questionnaire

surveys, interviews or observations (Dawson, 2006; Matt et al., 2006; Denscombe, 2010). Distinctions between the three approaches as presented by Kumar (2011) are:

- The observational method, which is a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place. It is appropriate in situations where full and/or accurate information cannot be elicited by questioning, because respondents are either not co-operative or are unaware of the answers, for example, in respondents with a low level of education; and where it is difficult to disengage them from the study. This method is also appropriate for small numbers of respondents and is common with a qualitative approach.
- Interviewing is a commonly used research method of collecting information from small numbers of respondents. It involves person-to-person interaction, either face-to-face or otherwise, between two or more individuals with a specific purpose in mind. The method is appropriate for a qualitative strategy.
- A questionnaire is a written list of questions, the answers to which are recorded by respondents themselves. Therefore, a questionnaire should be developed in an interactive style for respondents to feel as if someone is talking to them while answering the questions. The method is appropriate when the research involves large participants and is usually the choice for a quantitative research study.

Buckingham and Saunders (2007) argue that a questionnaire survey may be an appropriate research instrument if the answer to the following four questions is 'yes':

- Does the researcher know the questions to ask respondents?
- Does the researcher intend to generate new data?
- Can and will members of the target population provide the researcher with what is needed to be known?
- Is the researcher interested in generalising about a large population?

In this research, the answer to all the above-stated questions is 'yes', which makes questionnaire surveys appropriate for data collection. Buckingham and Saunders (2007) also argue that questionnaires are best employed where the unit of analysis is individual human beings, when a fairly large population is involved and when a large geographical area is to be covered. Similarly, Denscombe (2007) argues that questionnaires are at their most productive when:

- Used with large numbers of respondents in many locations;
- What is required tends to be fairly straightforward information – relatively brief and uncontroversial;

- The social climate is open enough to allow full and honest answers;
- There is a need for standardised data from identical questions – without requiring personal, face-to-face interaction; and
- Respondents are able to read and understand the questions.

This research meets all these requirements, which makes the use of a questionnaire survey for gathering data more appropriate, compared to either observation or interview method. In addition, based on the methodology (quantitative) of this research (Sections 4.5 to 4.7); a questionnaire method is considered appropriate for data collection.

4.9 RESEARCH FRAMEWORK

A research framework or conceptual model is useful for analysing and communicating the rationale of a research, and for predicting the implications of the outcomes on an existing concept like SSH concept. A research framework represents a way of thinking about a problem or a study, or a way of representing how complex things work the way they do (Bordage, 2009). Conceptual frameworks, according to Smyth (2004), are structured from a set of broad ideas and theories that help a researcher to properly identify the problem they are looking at, frame their questions and find suitable literature. Such a framework explains, either graphically or in a narrative form, the main issues to be studied, key factors, constructs or variables and presumed inter-relationships (Liyanage, 2006).

This can be based on the premise that researchers owe their readers the duty of providing better and credible information about the assumptions and foundations of their work. More than developing a framework, the overarching intention is also that a research framework should be able to: guide in the identification of problems, through the review of literature (Section 1.4); provide a base for limiting the scope of the research (Section 1.5); and facilitate the process of developing a conceptual model of SSHP (Chapter 5) and developing a framework for implementing SSHP (Chapters 6-9). “*Research is a journey toward an endpoint – to develop new knowledge that will contribute to practice – and a research framework provides a guide*” (Sinclair, 2007). Based on the aforementioned, the research framework comprises of four major stages as shown in Figure 4.3.

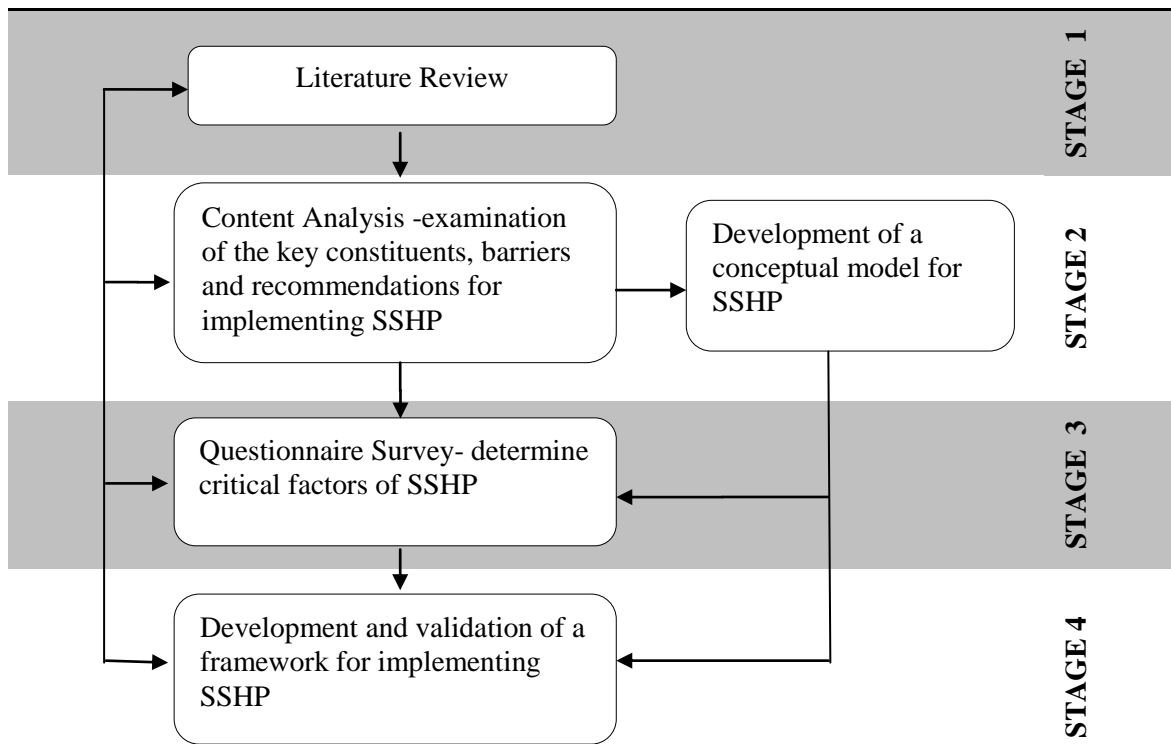


Figure 4.3: The Research Framework

4.10 STAGE 1: LITERATURE REVIEW

Reviewing the literature in one’s chosen subject area has been considered as one of the most important tasks in carrying out a research project (Bryman and Bell, 2007). Literature reviews help researchers limit the scope of their inquiry, convey the importance of studying a topic and share with the reader the results of other studies that are closely related to the one being undertaken (Creswell, 2009). In supporting this view, Jankowicz (2005) argues that whatever the epistemology, the work of a researcher is not done in a vacuum, but builds on the ideas of other people who have before studied the field. This can be achieved as it provides a framework for establishing the importance of a study as well as a benchmark for comparing the results with other findings (Creswell, 2009).

A researcher, therefore, is required to describe what has been published, and to arrange the information in a relevant and critical way (Jankowicz, 2005). Bryman and Bell (2007) offer some other benefits of the literature review as follows: (a) it provides the basis on which to justify the research questions and build the research design; (b) it informs how to collect research data and helps to analyse data in an informed way; (c) it enables a researcher to demonstrate ability to engage in scholarly review based on reading and understanding of the work of others in the same field; (d) it is a means of developing an argument about the significance of the research and where it leads; and (e) it is a means of affirming the researcher’s credibility as someone who is knowledgeable in a chosen area. In acknowledging

the above, the literature review has been carried out for achieving the various objectives of this research (Section 1.2).

The variety of literature consulted covers all the major areas of the research which are: Social Housing (chapter 2) and SSH (chapter 3). Therefore, the literature review has helped to establish academic and research areas which are relevant to the subject of this research and to lay a foundation for it (Oliva, 2008). Based on this background exercise, this research is not done in isolation but as a study which exists in the nature of an academic tradition. The literature consulted for this included documents of: public organisations; research organisations and professional bodies; academic journal articles; conference papers; unpublished research reports, and PhD theses; books of readings; text books; dictionaries; and Web of Knowledge. The first stage helped to achieve objectives 1-2 (Section 1-2).

4.11 STAGE 2: DOCUMENT CONTENT ANALYSIS

This stage is a continuation of the literature review that makes an in-depth document analysis of published works to develop a conceptual model of SSHP. It addresses objectives 3-5 (Section 1.2). Content analysis has been variedly described in the literature and this has tended to change over time with developments in the technique and with application of the tool itself to new problems and types of materials (Holsti, 1996). According to Bryman (2012), content analysis is an approach to the analysis of documents and texts that seek to quantify content in terms of predetermined categories and in a systematic and replicable manner. Krippendorff (2004), views content analysis as a research technique for making replicable and valid inferences from texts (or other meaningful matters) to the contexts of their use. It is a research tool used to determine the presence of certain words or concepts within texts or sets of texts (Busch et al., 2012). Therefore, it helps researchers to quantify and analyse the presence, meanings and relationships of such words and concepts, then make inferences about the messages within the texts, the writer(s), the audience, and even the culture and time of which these are a part (Busch et al., 2012). It has been found useful for examining trends and patterns in documents and provides an empirical basis for monitoring shifts in the provision of public services (Stemler, 2001). Neuman (2006) argues that content analysis is useful for three types of research problems: (a) it is helpful for problems involving a large volume of text; (b) when a topic must be studied at a distance, like the situation of a topic or problem from existing documents; and (c) when it can reveal important messages in a text that are difficult to see with a casual observation.

Based on the various arguments, this research considered it appropriate and relevant to adopt document content analysis. It is generally acknowledged that there are two main types of content analysis – conceptual analysis and relational analysis (Busch et al., 2012). These two types can be differentiated as follows: conceptual analysis can be thought of as establishing the

existence and frequency of concepts most often represented by words or phrases in a text; and in contrast, relational analysis goes one step further by examining the relationships among concepts in a text (Colorado State University, 2008; Busch et al., 2012). However, in the context of this research, the conceptual analysis method of the content analysis is adopted to develop a conceptual model for SSHP. Generally, the technique is used to condense extensive and varied raw data from the chosen texts into a brief summary format, and helps to establish clear links between the research objectives before summarising the findings derived from the documents (Thomas, 2003).

The conceptual model respectively encompasses the key economic, environmental and social constituents, barriers and recommendations for implementing SSHP (see Chapter 5). These are the concepts to code for in the content analysis. The literature shows that conceptual analysis usually requires adopting different steps. Accordingly, once the concepts have been established, the next step is to determine the coding methods, which can involve using the following eight steps for conducting the conceptual analysis: decide the level of analysis; how many concepts to code for; whether to code for existence or frequency of a concept; how to distinguish among concepts; and develop rules for coding the texts; decide what to do with ‘*irrelevant*’ information; code the texts; and analyse the results (Carley, 1992 as cited in Colorado State University, 2008). Based on this information, the following section discusses the steps adopted in conducting the conceptual analysis.

Level of analysis: The level of analysis encompasses constituents, barriers and recommendations for improving the implementation of SSHP. These are considered under the platform of the three pillars of SD – economic, environmental and social.

The concepts to code for: The concepts coded for are based on the level of analysis using the sets of words or phrases that are important for achieving sustainability in relation to the economic, environmental and social factors. A level of flexibility is introduced to the consideration of these sets of words or phrases so as not to omit some important submissions that could have significant bearings on the end result, and also not to include irrelevant information. The concepts to code for are the key economic, environmental and social factors as they relate to constituents, barriers and recommendations for improving the implementation of SSHP.

Decision on what to code for/Pattern of coding: Colorado State University (2008), specifically states that a researcher can decide to code for ‘existence’ or ‘frequency’ of a concept for determining the pattern of coding. However, “*when coding for existence*”, a word or phrase would only be counted once, no matter how many times it appeared and this would give the researcher a very limited perspective of the text and it could be that the number of times it appears is indicative of its importance. Therefore, ‘existence’ is not used for coding the concepts

in this research. Instead, 'frequency' has been used to code for the set of concepts and the outcomes on a comparative basis are used to determine their levels of importance for achieving SSHP (see Chapter 5). The set of factors under each category are ranked based on the numbers of frequencies they attained.

Distinguishing among concepts: The decision to distinguish among the concepts is for determining the level of generalisation as to whether the set of concepts in the documents are to be examined, considered and recorded: as they appear, different or similar to one another. In the context of this research, differences in the contents are considered for the purposes of grouping them according to constituents, barriers and recommendations as well as their related factors. In addition, the similarity of the factors is considered for grouping them under related word or phrases such as 'affordability'; 'efficient use of natural resources'; 'skills acquisition and employment opportunities'; 'stakeholders' participation'; 'lack of alternative transport modes'; and so on (see Chapter 5 and the attached recorded disc). The set of words or phrases are, therefore, considered and grouped according to their implicit and explicit meanings.

Rule for coding the texts: This step is for developing a "*translation rule that allows for streamlining and organising the coding process so that what is required is coded for, consistently throughout the text, in the same way every time*" (Colorado State University, 2008). For the translation rule, therefore, consistency is maintained in order not to lose the exact focus of the research. For example, 'adequate funding' is coded differently from 'inadequate funding'. This enables the interpretations drawn from the documents to remain valid and not confusing, which means the coding and recording processes give a concise level of coherence.

Decision on irrelevant information: Although the focus of a document may be similar i.e. sustainability, the objectives and approach may differ from that of this research i.e. achieving sustainability in SHP. This fact is considered so that submissions that do not add value to the focus of this research are ignored.

Coding the texts: According to Colorado State University (2008), coding the text can be done "*either by hand, i.e. reading through the text or manually writing down concept occurrences or through the use of various computer programmes*". Sections 4.11.3 and 4.11.4 respectively give detailed discussions on coding and application of the codes to the appropriate texts in the selected documents.

Analysing the results: This is the step for conducting a conceptual analysis for the development of a conceptual model of SSHP, which is an aspect of the content analysis adopted for this research. Section 4.11.5 provides full discussions on this step.

4.11.1 Steps in Conducting Content Analysis

In the context of this research, apart from the preliminary steps, five main steps are adopted for conducting the content analysis as shown in Figure 4.4. These are: (1) document selection; (2) creating a set of codes – document coding (manual), category coding and content coding; (3) application of codes to the appropriate texts in the selected documents; (4) sorting and ranking of coded texts; and (5) develop a conceptual model of SSHP.

4.11.2 Step 1: Document Selection

The decision to select a document for inclusion in the research was based on if its content can be described as relevant and contains significant information relating to the concept of the analysis. The ones chosen were the types that discussed issues about SD that can be related to SSHP. According to Boaz and Ashby (2003), the quality of a document is determined by its content in terms of the consideration based on ‘fitness for purpose’ of the objective of this research and currency, if the nature of its discussions can be related directly or indirectly to some of the current features about SSH.

Based on the combination of the criteria – quality of the content, currency, relevance and types; the documents considered are types that have the ability to tell a story, explicitly or implicitly about achieving sustainability in social housing in terms of discussions on relevant factors (constituents); consequences of stunting issues (barriers); and what can be done for addressing the issues (recommendations). Quality of selected documents was also ascertained based on criteria such as peer reviewed, citations, editorial comments and nature of discussion in relation to the focus of the research, etc. In addition, the documents considered for this study are those published from the year 2000 and beyond. The year 2000 was set as the limit because it constitutes a unique landmark in the history of SD in the world in general.

For example, in 1983 the UN General Assembly passed the Resolution, Reference Number A/RES/38/161 for establishing the WCED, now known as the Brundtland Commission to: “*propose long-term environmental strategies for achieving SD to the year 2000 and beyond ...*” (UN, 1983). The reports of the four Advisory Panels set up to assist the Commission submitted were published under the titles “*Energy 2000, Industry 2000, Food 2000 and Legal Principles for Environmental Protection and Sustainable Development*”. This can be regarded as an important development for achieving sustainability in the social housing sector similar to developments in other sectors of the economy like health, education, transport etc.

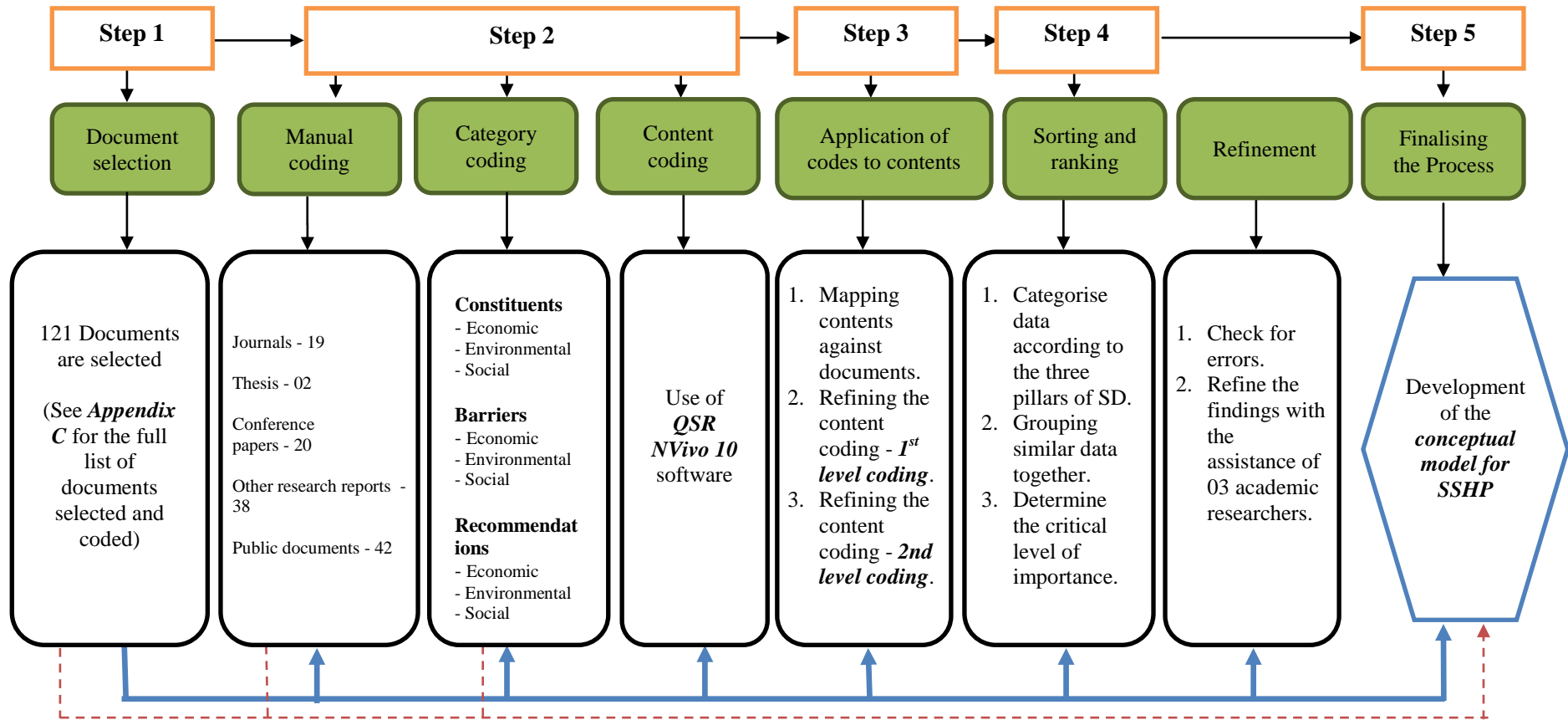


Figure 4.4: Stage Two of the Research Showing Steps in Conducting the Content Analysis

The year 2000 was also marked by what has been regarded as the largest gathering of the world leaders in human history at United Nations headquarters in New York, for the Millennium Summit with the focus for addressing extreme poverty in its many dimensions - income poverty, hunger, disease, lack of adequate shelter, and exclusion - while promoting gender equality, education, and environmental sustainability (UN, 2006).

These are basic human rights, particularly the rights of each person to health, education, shelter, and security, which are vital for achieving sustainability in social housing. In addition, year 2000 was the beginning of the second half of the 26-year period between 1987 when the Brundtland report was presented and 2013.

Document selection is a general term in selection processes which include filtering, retrieval, routing and searching (Buckland and Plaunt, 1997). These can be combined to form a dual task of collection and selection of documents. The exercise requires certain guidelines that are essential to guarantee the coherence and the compatibility of the database records, avoiding therefore, the inclusion of irrelevant documents and the exclusion of important ones (Rome, 2006).

Achieving the desired goal of this phase requires a process of searching websites, determining relevant documents based on their quality and importance including types of data to be collected. The procedure is carried out as follows.

Search of Websites: The Internet search engines used with key words searching for this research are: Google; Google Scholar; IEEEExplore; Web of Knowledge and Ebscohost.; Websites consulted are those of Governments (gov.); Academic Institutions (ac.); Educational Organisations (edu.) and Private Organisations (org.) with a research bias. Consideration is based on their usefulness as to their wide coverage subject areas; quality and quantity of information; currency of information and bias in the areas of this research. The sources contain relevant texts useful in achieving the objective of this stage. Consequently, sites of various governments and agencies, academic institutions, non-governmental organisations and professional bodies considered to be interested in SSHP are searched within the websites.

Document Selection: This is the task of selecting sites from a set of sites, based on a focus of attention, and from where documents that addressed the subject can be obtained (Buckland and Plaunt, 1997). The focus of attention for this research is SSHP and associated constituents, barriers to implementation, and recommendations for improvements. These formed the boundaries for the documents selected. The consulted sources are academic and professional journals, conference papers, other research reports, research theses, and public documents as shown in Appendix B. However, little success can be achieved if SSH is studied in isolation given that the concept shares some sustainability features with other SD issues including

sustainable housing; affordability; sustainable design and construction; and sustainable community development and management. This helps to explain the inclusion of documents in these areas that are considered relevant to this study as shown in Appendix B. The fact that SSHP is unique in certain areas like: regulation, nature of providers, funding strategies, social motive, price, tenure, allocation criteria and intended beneficiaries is duly considered. All these constitute the main focus of attention in the documents selected for the analysis.

Basis of Selection: The documents for the content analysis are chosen based on their quality of the contents, currency, relevance and type of document. The documents were also selected, based on research problems relating to achieving sustainability in SHP. A research problem is considered as the first and most important requirement in the research process as it serves as the foundation of a research study and if well formulated, a good study to follow is expected (Kroelinger, 2002). The aforementioned procedure is logically taken to finally select the documents from where appropriate data are collected. The literature evidence shows that the document selection process involves the use of initial query terms to select relevant documents from a list, use of additional terms to select from those relevant documents and if necessary, adding to the query terms and repeating the selection with expanded query terms as much as possible (Fong and Uyar, 2008). Accordingly, at the end of the selection exercise, 121 documents consisting 20 conference papers, 38 other research reports, 19 journal papers, 42 public documents and 2 theses are considered, as shown in Figure 4.5.

The literature evidence shows that there is no clear cut answer regarding the minimum number of documents to work with in content analysis. Nevertheless, *“a limit must be set to the range of documents included in any research study [... due to the risk of] a researcher being overwhelmed by the number of documents [... and of it not being] possible to ensure completeness of data”* (Unerman, 2000 as cited in Vourvachis, 2007). It is not necessary to study every available story or document on a particular subject to get a valid understanding of it as a good judgement sampling or probability can do that (GAO, 1996; Lynch and Peer, 2002). In addition, excessive interpretation on the part of the researcher poses a threat to successful content analysis (Elo and Kyngas, 2008). However, the sampling unit for each study depends on the research objectives on which inferences are to be made (Unerman, 2000 as cited in Vourvachis, 2007).

4.11.3 Step 2: Coding - creating a set of codes

There are a variety of methods for coding in content analysis. Generally, content analysis provides researchers with alternatives for coding texts for conceptual or relational studies. Boettger and Palmer (2010) present three most common methods for coding: (a) manual coding, (b) simple computer-assisted method, and (c) content analysis software. Neuman (2006)

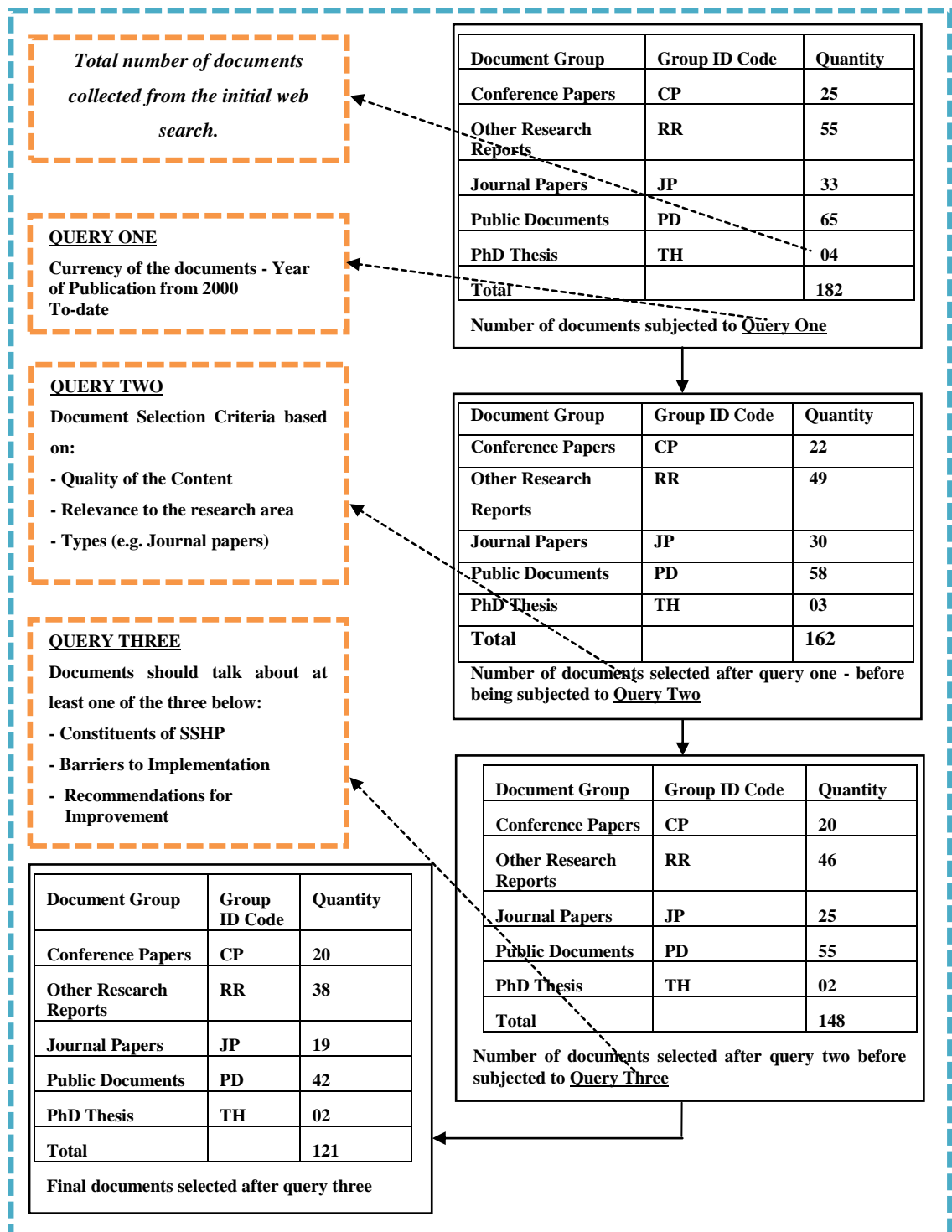


Figure 4.5: Document Selection Process

presents two coding methods as: (a) manifest (explicit) coding and (b) latent (implicit) coding. Neuendorf and Skalski (2010) argue that the two main content analysis methodological choices that exist are (a) human coding and (b) computer coding (i.e., computer-aided text analysis - CATA). These two methods, which are considered as common to all the suggested methods, are adopted for the content analysis. Three categories of coding are considered: manual coding of

the documents – document coding; and use of Nvivo 10 software for category coding and content coding.

Manual coding of documents: This involves grouping the documents according to types: academic and professional journals, conference papers, other research reports, research theses, and public documents, and each was given an appropriate group code and serially numbered, based on the year of publication. Details such as title of document, publisher/author, group code and classification of the content into constituents, barriers to implementation and recommendations for improvement are done manually. These are put together as shown in Appendix B, and a sample is as shown in Table 4.1. The sample represents how the 121 documents are coded manually.

Table 4.1: Selected Documents and Content Classifications (Sample)

No	Title of Paper	Publisher/Author	Year Published	Content Classification			
				Constituents	Barriers to Implementation	Recommendations for Implementation	Group Code
01	International Review of Sustainable Low-Cost Housing Projects	Ebsen and Rambol	2000	▪	▪	▪	01 CP
02	Basic Principles of Sustainable Development	Harris, J. M.	2000	▪	▪	▪	02 RR
03	The Challenge of ‘Sustainable Development’: From Concept to Practice	Steven Hayward, Elizabeth Fowler, and Laura Steadman	2000	▪		▪	03 RR
04	Sustainable Development and Sustainable Construction: A Literature Review for C-SanD	Khalfan, M.A.	2002	▪	▪	▪	04 RR
05	Report of the World Summit on Sustainable Development. Johannesburg, South Africa	United Nations	2002	▪	▪	▪	05 PD

117	Balancing the need for affordable housing with the challenges of sustainable development in South East Queensland and beyond	Fionn MacKillop	2012	▪	▪	▪	117 CP
118	Development Management Sustainability Appraisal SCOPING REPORT	London Borough of Haringey	2012	▪	▪	▪	118 PD
119	Core Strategy Sustainability Appraisal Scoping Report – Your Vale – Your Future	Vale of White Horse District Council	2012	▪	▪	▪	119 PD

120	Investment Appraisal Tools And Sustainability Evaluation In Social Housing	Anthony Higham and Chris Fortune	2012	▪	▪		120 CP
121	Lowering Co2 Emissions In The New Build Social Housing Sector: A Spanish Case Study	Mark Downey	2012	▪	▪		121 CP

Category coding: The NVivo 10 software is used to code the terms or themes into three different categories. In the context of this research, the main categories and sub-categories are previously determined before the coding. According to Boettger and Palmer (2010), a proper content analysis requires a researcher to identify terms or themes prior to coding any texts. Figure 4.6 shows how coding was carried out: (1) category coding: main categories – constituents, barriers and recommendations; (2) sub-categories – economic, environmental and social and (3) sub-sub categories: inadequate funding; inadequate supply; poor legal framework; etc. The figure is a representation of the use of NVivo software with the aid of the computer for effecting the category coding.

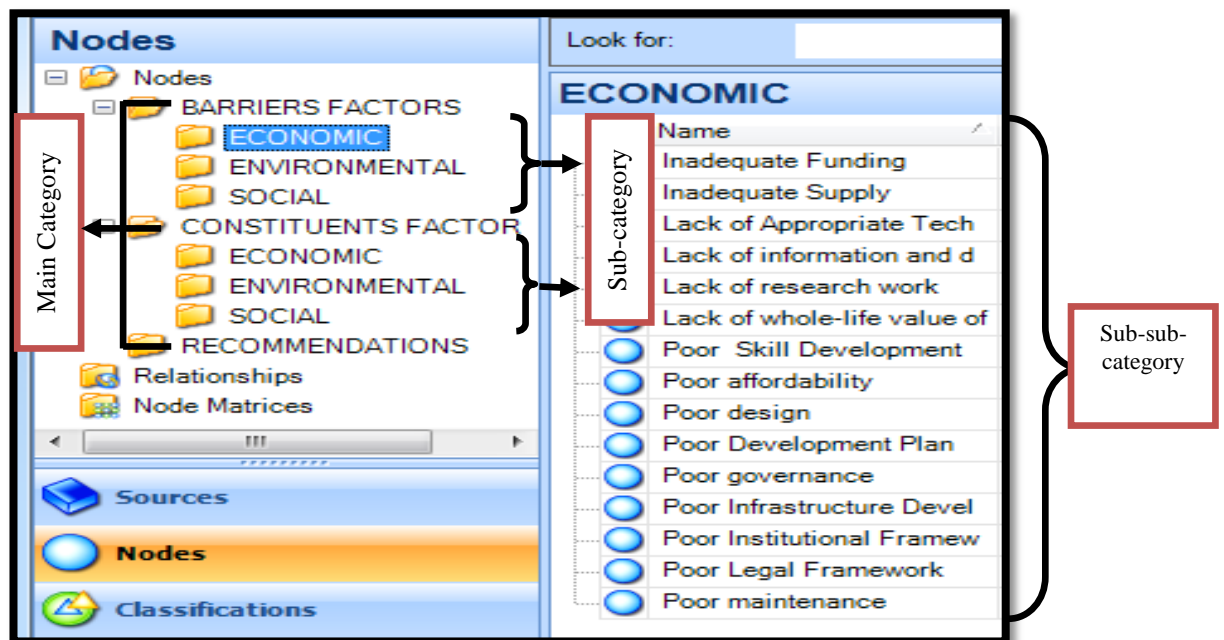


Figure 4.6: Category Coding – An Example

The sub-categories are determined according to the three pillars of SD and are grouped in relation to each of the categories. In addition, unlike the main categories and sub-categories that are determined before coding, the sub-sub-categories are determined as they emerge from the contents of the selected documents. For example, the character of a particular text would give an understanding of its meaning and the appropriate category it should belong as well as its code. Figure 4.7 shows the process involved in the three levels of category coding.

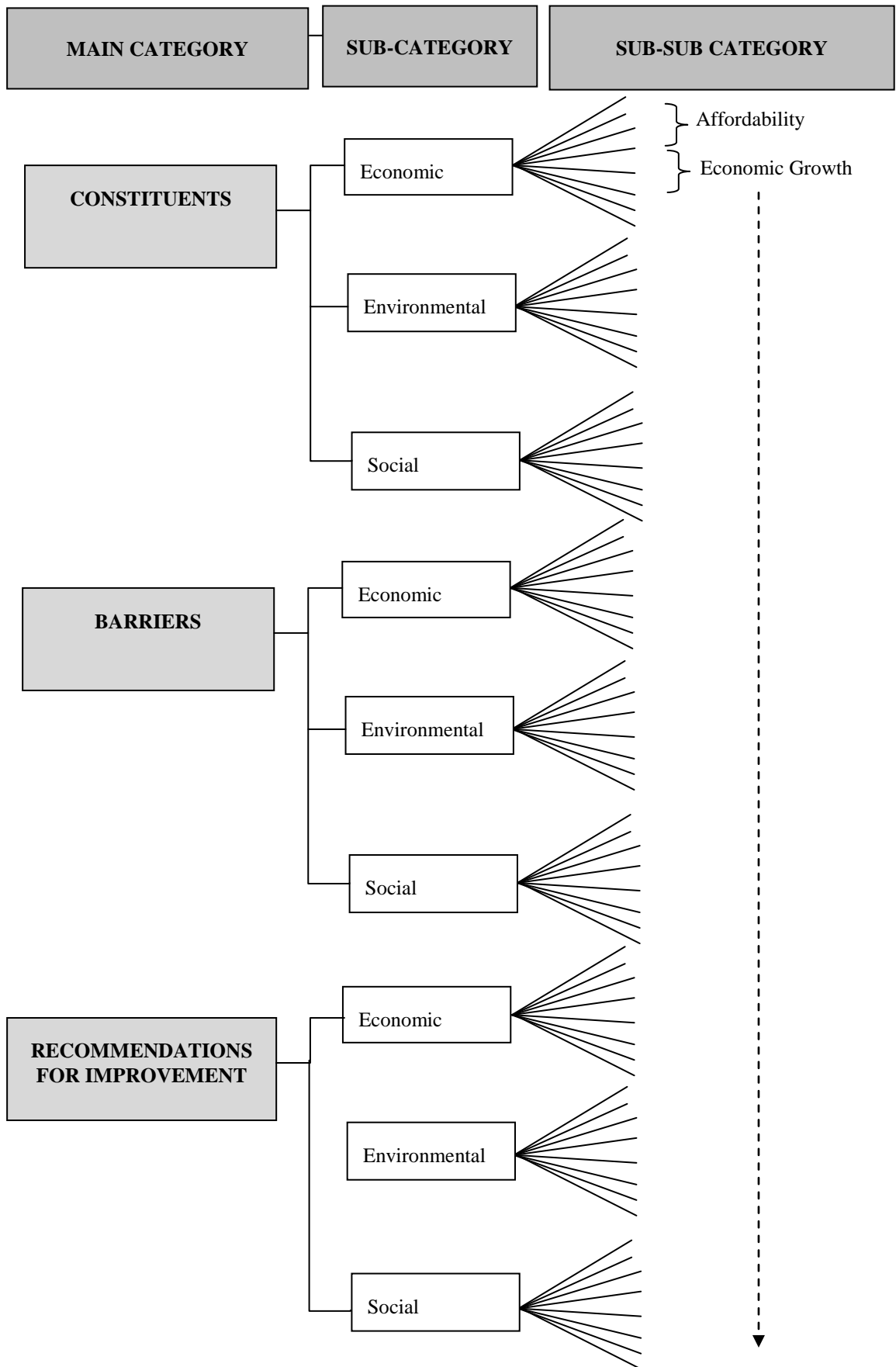


Figure 4.7: Category Coding – The Process

Content coding: Having discussed the category coding, this section discusses the content coding in detail. Content coding involves the application of codes to the appropriate texts in the selected documents. This allows relevant portions, texts, phrases or group of words in each document to be appropriately coded as they relate to the key factors of the economic, environmental and social constituents; barriers to the implementation and recommendations for improving SSHP.

According to Huberman and Miles (2002), the process of the content coding in research encompasses various stages like attending, reading, telling, transcribing, and analysing. The process has assisted in gathering what the authors presented in relation to the epistemological, ontological and axiological assumptions as earlier mentioned (see section 4.3). For example, there is a need to study the sustainability status of social housing, which requires having the primary knowledge of what to look for in the selected documents. Similar to the literature findings, these issues need to be investigated in great depth to uncover the realities that exist in the sector (Liyanage, 2006).

Therefore, in carrying out this exercise, the contents of the documents are carefully selected and coded separately as key economic, environmental and social factors under each of the main categories of constituents, barriers to implementation and recommendations for improving SSHP. This has been done as they differently relate to each document represented by an assigned code (Table 4.1 and Figure 4.5). The content coding also involves quantifying and tallying the presence or occurrence of the selected phrases or group of words within a document, which may be implicit as well as explicit (Busch et al., 2012). The rationale is to determine the implications and explanation offered in the authors' presentations as they relate to the chosen concept and the sub-areas of the concept as shown in the document. Figure 4.8 shows a sample of the content coding.

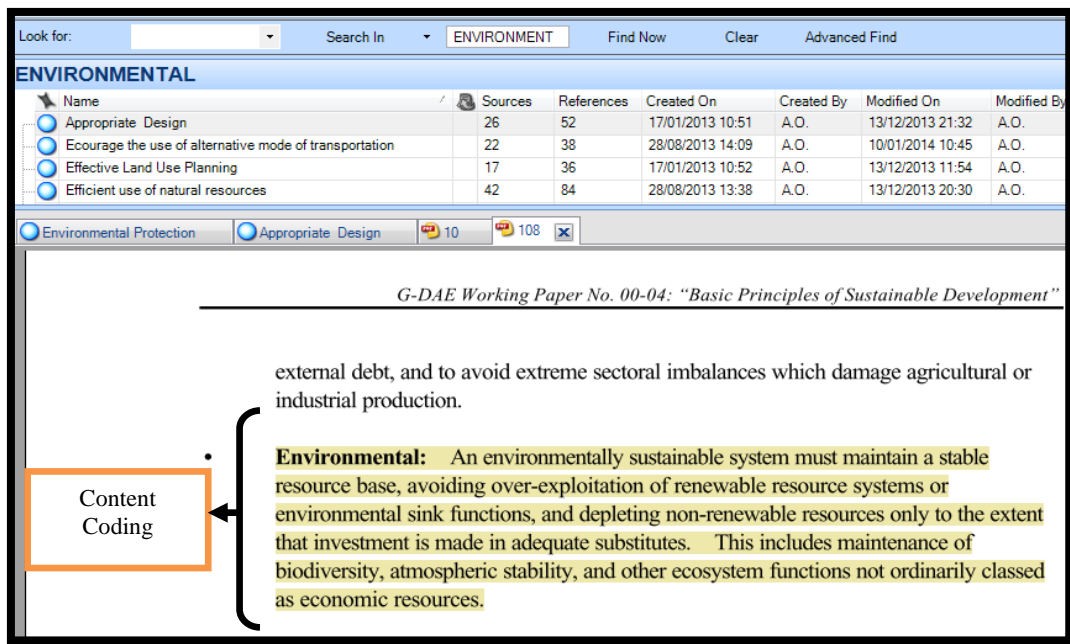


Figure 4.8: Content Coding – An Example

4.11.4 Step 3: Application of Codes to Content (Mapping)

Following from the above are the mapping codes (contents) against all the 121 documents with regard to constituents, barriers and recommendations for improvement as shown in Table 4.2. The relevant contents, extracted from the selected documents are coded as they relate to each document. This is for determining which document contains a particular coded content (group of words or phrases). This is followed by dividing the contents as they relate to all the three main categories -constituents, barriers and recommendations, and further grouping them appropriately into the three pillars of SD. Details about each of the documents in terms of the given code, title, name(s) of author(s) and year of publication as they relate to the contents are also included. The above is considered necessary as part of the refinement process of the outcomes of the content analysis. Table 4.3 is an example of how this section of the refinement process was carried out.

Findings at this level show that the number of factors identified in each pillar were too large to handle and manage. Therefore, the content analysis was extended by grouping similar factors together in each pillar to form items for the sub-sub category like affordability, adequate provision, good governance, effective land use planning etc. The contents are properly collated into similar factors according to the three pillars of SSH – economic, environmental and social, checked for errors and refined.

Table 4.2: Mapping Contents against Documents – (An example)

Content Coding - Constituents	Document																																												
	01.CP 2000	02.RR 2000	03.RR 2000	04.RR 2002	05.PD 2002	06.CP 2002	07.JP 2002	08.RR 2003	09.PD 2003	10.PD 2003	11.RR 2003	12.RR 2003	13.RR 2003	14.CP 2003	15.JP 2003	16.RR 2003	17.RR 2003	18.RR 2003	19.JP 2004	20.PD 2004	21.PD 2004	22.JP 2004	23.RR 2004	24.RR 2005	25.JP 2005	26.JP 2005	27.RR 2005	28.CP 2005	29.RR 2005	30.PD 2005	31.CP 2005	32.JP 2006	33.JP 2006	34.RR 2006	35.PD 2006	36.PD 2006	37.RR 2006	38.PD 2006							
Adequate funding/ financial assistance/ mortgage assistance especially to low-income households	1	1		1														1					1																						
Direct government investment in sustainable housing																		1																											
Development of 'Home-Swap' Pilot Scheme or 'Refurbishment Scheme' to assist those living in Unsustainable Housing							1			1																			1																
Construction activities that allow for job opportunities and economic growth	1		1			1		1		1					1				1			1	1			1												1			1				
Adequate and standard social housing on continuous basis for which people will be proud to live i.e. give sense of a place		1				1	1	1	1	1		1	1		1		1		1	1				1																					
Maximise the use of land through high density residential development								1										1						1		1																			
Reduction in various Taxes on building materials and Property Tax							1																																						
Application of subsidies (rent, alternative accommodation, tax etc)				1						1																																			
Refurbishment as against demolition where and when necessary								1																			1															1			
Taking account of costs and benefits on the environment in housing construction and adopting the polluter pay principle.										1		1		1	1		1						1						1																
Ensure that total revenue is sufficient to meet all operating costs e.g. maintenance cost, upgrading and recurrent expenditure												1		1																															

Table 4.3: Refining the content coding – 1 (An example)

Code	Title	Author	Year	Constituents	Barriers to Implementation	Recommendations for Improvement
01 CP	International Review of Sustainable Low-Cost Housing Projects	Ebsen and Rambol	2000	<p>Economic</p> <ol style="list-style-type: none"> 1) Affordable housing to low-income group 2) Adequate funding 3) Job creating construction activities such as labour-intensive construction methods <p>Environmental</p> <ol style="list-style-type: none"> 1) Minimise damage to environment through use of appropriate technology 2) Use of environmental friendly materials, determine the sustainability through life-cycle –analysis 3) Maximise the use of recycled materials and renewable resources 4) Consideration for renewable energy by integrating solar and wind energy. <p>Social</p> <ol style="list-style-type: none"> 1) Use simple design that requires simple maintenance and developing simple building concept which respects local climatic condition 2) Design that that respects cultural diversity 3) Develop housing to accommodate people of different economic class 4) Include gender in the planning process 5) Housing development should encourage community interaction. 	<ol style="list-style-type: none"> 1) Sustainable housing is a new concept 2) Sustainability not fully incorporate 3) Poor access to information 4) Lack of appropriate technology. 	<ol style="list-style-type: none"> 1) Appropriateness of housing projects 2) Holistic sustainable housing approach.

These steps are taken so as to make the final findings more meaningful and relate properly to the pre-determined concept of this section of the research i.e. determination of the main categories (constituents, barriers and recommendations) and sub-category factors (economic, environmental and social) of SSH. The refinement was carried out with the assistance of three other researchers in the related field of study.

Table 4.4 shows a sample of the final output of the content coding after collated, checked for errors and refined. **A 110-page main copy (soft copy)** of the final outcome of the content coding is contained in the attached disc at the end of this thesis for lack of space for its hard copy. Based on the above discussions, it is germane to show that content analysis can be carried out using either a qualitative or quantitative approach and by an inductive or deductive method. Deductive content analysis is used when the structure of analysis is operationalised on the basis of previous knowledge and the purpose is for testing theory (Kyngas and Vanhanen, 1999 as cited in Elo and Kyngas, 2008). The inductive approach is recommended where there is not enough former knowledge about the phenomenon or if this knowledge is fragmented (Lauri and Kyngas, 2005 as cited in Elo and Kyngas, 2008). In the context of this research, an inductive approach has been used. According to Thomas (2006), *“the purposes for using an inductive approach are to (a) condense raw textual data into a brief, summary format; (b) establish clear links between the evaluation or research objectives and the summary findings derived from the raw data; and (c) develop a framework of the underlying structure of experiences or processes that are evident in the raw data”*. This study, therefore, meets all the above mentioned requirements of the inductive approach.

However, before using the findings to develop a conceptual model of SSHP, the coded contents are further subjected to proper sorting and ranking as discussed under step four in the following section.

Table 4.4: Refining the content coding - 2 (An example)

MAIN CATEGORY: CONSTITUENTS		DOCUMENT CODE
SUB-CATEGORY: ECONOMIC FACTORS		
SUB-SUB CATEGORY: AFFORDABILITY		
1	Sustainable development (SD) strategy should generally include a commitment to expanding households' access to affordable, adequate and appropriate forms of housing.	08 RR 2003
2	Government must ensure availability of affordable social housing provision (ASHP) for all especially low-income households by subsidising the costs of provision and gives mortgage loans at subsidised rates.	09 RR 2003
3	SD concept seeks for ensuring affordability and availability of housing both now and in the future.	09 RR 2003
4	The concept of sustainable social housing (SSH) is for ensuring affordability and availability of housing for all people, whether choosing ownership or public or private rental.	09 RR 2003

5	There is the need for ensuring affordability of the cost of environmental protection strategies of different types of housing in different locations i.e. the cost of their impacts on air and water pollution, greenhouse gas emissions, water catchments, biological diversity, land degradation, resource use and waste generation.	09 RR 2003
6	The focus of SD is to ensure affordability of any economic instruments used to value or price social and environmental costs or to provide financial incentives to minimise them.	09 RR 2003
7	The government must make housing more affordable for the people entering the housing market for the first time, particularly low income renters.	09 RR 2003
8	Sustainability strategies include affordable mortgages to assist home owners with higher capital cost to ensure a lower lifecycle cost.	09 RR 2003
9	The government must encourage relevant local industrial ventures for the delivery of affordable and durable housing materials for achieving low lifecycle building costs.	09 RR 2003
10	The government must make sure that ASH is available, for all, especially low-income households by subsidising the costs of provision, purchase, rent including mortgage loans at subsidised rates.	23 RR 2008
11	ASH must reflect both public usage and appropriate policy goals and be reasonably adequate in standard, cost and location for meeting housing needs of lower- or middle-income households and be able to meet other basic living costs on a sustainable basis.	23 RR 2008
12	ASH refers to housing of which the cost to the tenant is not regulated by the market, but which is made cheaper through some form of government intervention.	23 RR 2008

57	The government must ensure the provision of affordable housing for meeting all housing needs.	87 PD 2005
58	There is the need to provide a greater range of affordable housing.	37 PD 2012
59	Sustainability concept promotes adequate affordable housing either for sale or rent, provides residents with the opportunity to choose and a better overall tenure mix.	37 PD 2012
60	SD seeks to increase the availability of affordable housing in the society.	48 PD 2012
61	SD encourages AHP that meets present housing needs without limiting the opportunity of future generations for meeting their needs.	35 TH 2011
62	Given that housing is a universal need, AHP is an essential requirement for meeting housing needs.	35 TH 2011
63	Housing is not affordable if its cost substantially covers a household's gross annual income to the extent that ability to meeting other basic needs is limited.	35 TH 2011
64	SD concept seeks to promote AHP through some integrated delivery strategies.	35 TH 2011

4.11.5 Step 4: Sorting and Ranking of Findings

The fourth step (see Figure 4.4), in the process of the content analysis, is considered necessary for sorting and ranking of the coded contents. This has helped in determining the level of importance of the key economic, environmental and social factors that have respectively emerged under the constituents, barriers and recommendations for improving the provision of SSH. These key factors are critical for achieving sustainability in social housing. The scope of this exercise is within the confines of the conceptual analysis approach of the content analysis. As observed by Siregar et al. (2008); Colorado State University (2008), the conceptual analysis method is used for establishing the existence and frequency of the key factors of the constituents, barriers and recommendations for implementing SSHP and they are ranked to

determine their critical levels of importance among the concepts in the selected texts. The outcomes at this stage are again checked for errors and refined with the assistance of three academic researchers before using the final results for developing the conceptual analysis. The overall findings of this step are given in-depth in Chapter 5.

4.11.6 Step 5: Develop Conceptual Model of SSHP

As earlier discussed at the beginning of section 4.11, the conceptual analysis approach is used to develop the conceptual model of SSHP. Data gathered from the content analysis were analysed with the NVivo 10 software and the findings used for developing the conceptual model. The development involved 3 steps (this is given in Chapter 5 - Figure 5.1). The model helps to provide detailed information about the key economic, environmental and social factors of SSHP from constituents, barriers and recommendations for improving the implementation perspectives. Full discussion of this stage of the research is contained in Chapter 5.

4.11.7 Validity

Validity is the extent to which a measuring procedure represents the intended concept (Figenschou, 2010). Validity in content analysis has been variedly defined and interpreted in the literature. Bapir (2012) argues that various arguments on validity in content analysis “*have two characteristics in common, first to do research in a professional, accurate and systematic manner, second, to state how research is concocted, transparently, meaning that, validity has to do with the association between data and conclusion*”. Therefore, to achieve validity in qualitative research is to “*reduce the gap between reality and representation and the more data and conclusion is correspondent the more a piece of qualitative research is valid*” (Bapir, 2012). The literature shows that validity in content analysis can be addressed in terms of correspondence and generalisability. Lederman (1991) refers to correspondence as agreement between two sets of measurement procedures for a particular construct or concept, and generalisability as the extent to which results are consistent with existing theory or predictive of associated events.

Krippendorff (1980) presents 7 types of validity based on technical recommendation as follows: (i) Data validity – “*assesses how well a method of analysis accounts for the information inherent in available data. It justifies the initial step of content analysis of having knowledge about the concept to code for*”. The knowledge of the concepts coded for in this research are: constituents, barriers and recommendations for improving SSHP from economic, environmental and social perspectives. (ii) Semantic validity – “*this is the degree to which a content analysis recognises and correctly represents qualities, meanings and conceptualisations in the system of interest*”. Based on the literature, the research recognises the concept of SSH and correctly represents the

need for achieving it for meeting housing need. (iii) Sampling validity –“*is the degree to which a collection of data can be analysed in relation to the universe of interest*”. Factors of SSHP were obtained through content analysis in relation to the generally acclaimed three pillars of SD. (iv) Product oriented or pragmatic validity – It “*assesses how well a method ‘works’ under a variety of circumstances*”. Findings from the content analysis have also worked for generating similar findings through the empirical survey in this research. (v) Correlational validity “*is the degree to which findings obtained from content analysis correlate with findings by another (convergent validity)*”. In this research, findings from content analysis correlate with those of the empirical survey (chapter 5 vs. chapters 6 – 8). (vi) Predictive validity – “*this is the degree to which predictions obtained by content analysis agree with, directly observable facts*”. The claims about the implications of the findings from the content analysis agree with the past, present or predictive future states or attributes of SSH. (vii) Process or construct validity – “*is the degree to which the inferences of a content analysis must be accepted as evidence with the accepted theories or models of the source*”. Data used for the analysis are obtained from the contents of the documents and are not fundamentally different from one another.

Based on the above discussions, the outcomes of the content analysis can be considered as meeting relevant criteria generally set for validity.

4.12 STAGE 3: THE QUESTIONNAIRE SURVEY

A survey is regarded as a procedure in which information is collected systematically about a set of cases such as people, organisations, or objects (Thomas, 1996). The questionnaire survey is usually designed by researchers to provide a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population (Creswell, 2009). The two main activities involved in questionnaire survey are: questionnaire preparation and collection of data (Enddud, 2008).

Similar to the content analysis stage, the questionnaire survey stage is aimed at achieving objectives 3 - 5 of this research. The questionnaire survey seeks ‘to empirically determine constituents, barriers and recommendations for the improvement of SSHP based on economic, environmental and social criteria through housing authorities and housing associations in England’. Figure 4.9 shows the research process for this stage.

4.12.1 Questionnaire Design

The questionnaire is commonly used as a data gathering instrument. It is regarded as the single most popular data collection tool in any research involving human subjects (Pickard, 2008; Leman, 2010). Questionnaires are popular due to a number of attributes they have as data collection tools. Pickard (2008); Bird (2009) detail a number of reasons for using a

questionnaire in research as: it can reach a large and geographically spread community at relatively low cost; can gather data from a larger sample than would be possible using any other technique; anonymity can be offered as well as confidentiality; and the data analysis and coding techniques can be determined from the outset before questionnaire distribution. Despite the good reasons for the use of the questionnaire in data collection, it has some limitations. Pickard (2008); Bird (2009) also identify the main limitations associated with the use of a questionnaire: can produce poor response rate compared with other techniques unless administered personally; and the researcher's inability to control who completes the survey, meet or talk to respondents while completing it.

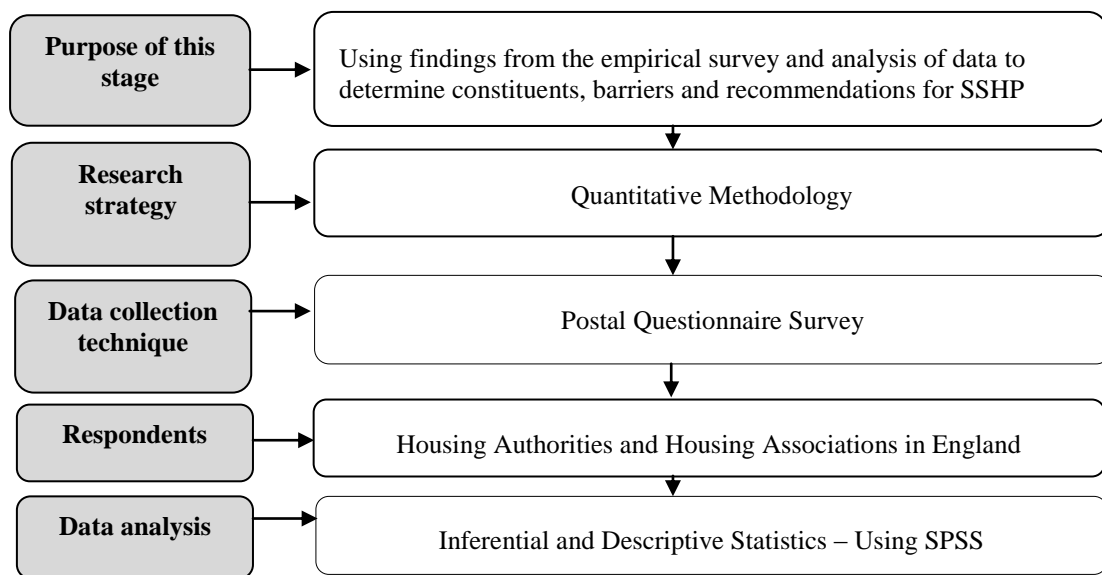


Figure 4.9: The Research Process during the Questionnaire Survey

Clark-Carter (1998) presents three formats for asking questions: unstructured (or free) interviews, semi-structured interviews and structured questionnaires. The structured questionnaire is adopted in this research given its appropriateness and advantages it has compared with the two other formats of asking questions, as follows (Clark-Carter, 1998):

- It is appropriate when researchers have a clear idea about the range of possible answers they wish to elicit.
- It involves precise wording of questions, which can be asked in a fixed order and for which respondents are required to answer one of the alternatives which are presented to them (Likert scale questions).
- Respondents could fill the questionnaires themselves, which means that it could save the researcher's time both in interviewing and travelling to where every respondent lives.
- It allows for a standard format that can minimise the effect of the way in which a question is asked on the respondent and on his or her response, and

- It allows for the responses to be more immediately quantifiable, for example 5-level Likert scale questions with 1- 5 allotted to the alternative answers.

The questionnaire was designed covering different areas of this research based on the combination of an extensive review of the literature dealing with SSHP in many countries and a content analysis of relevant documents. The questionnaire comprises of closed-end questions - requiring respondents to select an answer from a set of choices (Krosnick and Presser, 2010). The five-page questionnaire, accompanied by a self-explanatory covering letter, was prepared and sent through postal means to the chairmen/chairpersons, directors, accredited company representatives or secretaries of the selected social housing associations and housing authorities in England. The covering letter indicated the aim and objectives of the research including assurance that the information to be provided by respondents would be used strictly for research purposes. It contained an undertaking to take measures for ensuring anonymity of respondents concerning the questionnaire survey. A reply paid envelop was included with the questionnaire.

A questionnaire can be designed to incorporate the four main scales of measurement: nominal, ordinal, interval and ratio scales (Haughton and Stevens, 2010). Social science researchers mostly use scales because they: are useful for capturing the intensity, direction, level, or strength of a variable construct; good for high coverage; allow a high degree of accuracy and reliability; permit comparisons between sets of data; and can help to simplify collection and analysis of data (Neuman, 2006). Different types of scale include Thurstone scale, the Bogardus social distance scale, the Guttman scale and the semantic differential scale as well as Likert scale.

A combination of nominal and ordinal scales is used in this research. Types of nominal questions in this survey require respondents to choose from different types of housing sector to which their companies belong. The ordinal questions used are on a 5-level Likert scale. According to Endut (2008), the Likert scale is a commonly used method for quantitative research as it allows respondents to choose one of several degrees of feeling about a statement. Likert scales are popular among social scientists and have been used for more than half a century for they: are relatively easy to construct and believed to be more reliable; have a high degree of validity; provide simple scores from a set of items; have a very high reliability (between 0.85 and 0.94); and allow ranking of respondents. Likert scales can meet researchers' needs for gathering data on respondents' attitude, beliefs, or behaviour by asking them to choose one option that best aligns with their view (Losby and Wetmore, 2012). Although Likert scales have different odd and even numbers, the 5-point Likert scale is the most common, given that it provides balanced response options - two positive and two negative and still allows for a neutral opinion; gives fewer options; and makes the number of response categories meaningful to the respondents (Losby and Wetmore, 2012). Respondents were asked to rate the key factors

of economic, environmental and social constituents, barriers to implementation and recommendations for SSHP based on a five-level (1) Strongly Disagree, (2) Disagree, (3) Neither Disagree/Agree, (4) Agree, and (5) Strongly Agree.

4.13 DATA COLLECTION

In this research, data collection is referred to as the process and the survey technique used for gathering data from the public and private social housing practitioners in England. The details are given in the following subsections.

4.13.1 Piloting the Questionnaire

Questionnaire piloting is regarded as a vital part of the questionnaire design given that it can help ensure that questions are worded correctly and that respondents navigate round the questionnaire correctly (Leman, 2010). Van Teijlingen and Hundley (2001) argue that one of the advantages of conducting a pilot study is that it might give advance warning about where the main research project could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too complicated. Piloting can *“help avoid waste of resources and improve questionnaire design through initial respondents’ comments and recommendations that can inspire new ideas, new points to explore, and provides a different way of looking at things which the investigator did not think of initially and which can be integrated into the questionnaire”* (Gile, 2006). Pilot studies can also assist in identifying possible practical problems in the following questionnaire survey and devise precautionary procedures or safety nets against problems such as poor recording and response rates (Van Teijlingen and Hundley, 2001). Additionally, piloting can help to ensure that respondents understand the questions in the same way as each other (reliability), and their answers mean what you take them to mean (validity) (Leman, 2010).

A pilot questionnaire was designed and personally distributed to 100 delegates during the annual International Conference and Exhibition of the Chartered Institute of Housing, Manchester between 12 and 14 June 2012. Nine (9) copies of the questionnaire were filled and returned. The low rate of return was primarily due to the respondents’ complaints about the volume (8 pages) and abstract questions contained in the questionnaire. The majority of the questions were not detailed enough, which made them difficult to comprehend. The complaints were duly considered in drafting the main questionnaire for data collection for this research as shown in Tables 6.4 (page 182), 7.1 (page 214) and 8.1 (page 242). Table 4.5 shows the reduced numbers of questions for the questionnaire survey compared with the questions used for the piloting survey.

4.13.2 Identification of the Population

The population for this research fall into two categories: social housing practitioners in the public and private (non-profit) sectors in England. The social housing practitioners operate under different social housing associations and housing authorities for the private and public sectors respectively. In contrast to the measurement of population as in a general census, the aim of the research project is to collect data from a sample of the required population. This implies that a sample is a set of elements selected from a population. The study by Odeyinka (2003) shows that for ensuring reliable and adequate data to investigate the research problem it is necessary to have a population sample, which is homogeneous and comprehensive.

Table 4.5: Reducing number of factors Based on Respondents' Remarks

Categories	Factors given in the Questionnaire	
	<i>Pilot Survey</i>	<i>Main Survey(Reduced)</i>
Constituents		
Economic	14	8
Environmental	9	4
Social	12	9
Barriers		
Economic	13	8
Environmental	7	5
Social	8	5
Recommendations		
Economic	13	6
Environmental	6	4
Social	8	4
Total	90	53

4.13.3 Sampling Unit

Social housing practitioners (public and private sectors) in England constitute the sampling unit for this research. Blaikie (2009) argues that although it is seldom achieved, the ideal sample is one that provides a perfect representation of a population, with all the relevant features of the population included in the sample in the same proportions. The main area of operation of housing authorities (public organisations) and housing associations (non-profit private organisations) considered for this research is England and this constitutes the geographical area covered by the research.

The lists of respondents are accessed through the hard and internet copies of the Directory of members of the NHF (2012), which constitute non-profit private housing associations, and the website of the DCLG, UK (2012) for housing authorities, representing the public sector.

4.13.4 Methods of Sampling

According to Blaikie (2009), whenever data are to be obtained separately from a number of individuals, social units or social artefacts, the researcher has a choice of either taking a whole population, or selecting the whole sample of the element of a sampling unit as the sampling frame. In this study, the total population of a well organised group of social housing practitioners under the well-recognised NHF as members is considered appropriate. Similarly, the total population of the housing authorities in England serves as the second group of sampling frame. The NHF has a total population of 1200 individual corporate members (non-profit private organisations) and 140 housing authorities (public sector organisations) in England.

However, only 881 NHF members of the social housing associations in England were selected from the up-dated report contained in the NHF 2012 annual directory of members for ease of communication. Their contact information was obtained from the internet database using an officially given code number and a hard copy of the directory. The selection of eligible participants from the list of members of the NHF was based on full correspondence address and currency of operations as indicated. Therefore, only those members of the NHF that could not be reached through postal means and which did not have useful information about their operations were not considered. The list of the national housing authorities in England is obtained through an official website of the DCLG (2012). The total population (140) of the national housing authorities in England was selected for the questionnaire survey for achieving a wide-range of opinion on the social housing related activities across the country.

Respondents from housing authorities and housing associations are operating in nine designated regions in England: East Midlands; East of England; London; North East; North West; South East; South West; West Midlands and Yorkshire and Humber. Table 4.6 shows the total number of respondents from each region for the questionnaire survey.

Table 4.6: Targeted Number of Respondents for the Main Survey

Type	Targeted Population
Housing Associations – Private	
East Midlands	65
East of England	67
London	226
North East	34

North West	114
South East	122
South West	94
West Midlands	99
Yorkshire and Humberside	60
Housing Authorities – Public	140
TOTAL	1021

Researchers use a variety of methods for carrying out questionnaire surveys. These include: self-administered questionnaire surveys involving the researcher personally serving and asking respondents to fill in the questionnaires; internet administered questionnaires involving sending the questions as part of the email itself; questionnaires sent as an attachment to an email address; web-based questionnaires designed as a web page and located on a host site where visitors to the site can access them; and postal questionnaires sent by post to respondents.

In the context of this study, questionnaires were posted to 1021 respondents comprising 881 social housing association members of the NHF, operating in England and 140 members of national housing authorities within the territorial boundaries of England (see Table 4.6). Preparation and administration of questionnaires lasted three months from January to March 2013. The first batch of questionnaires was sent out on Thursday 21st February 2013 and continued until Friday 1st March 2013. The questionnaires completed were received within four weeks commencing from Monday 25th February 2013 until Friday 22nd March 2013. Several telephone calls were made to some of the respondents as a reminder during the period of collecting the questionnaires. According to Leman (2010) a reminder through postal mail, telephone, e-mail messages or personal contact is considered invaluable for increasing response rate. Table 4.7 shows the number of questionnaires returned on weekly basis. Some of the uncompleted questionnaires were returned either on the account that the addressee had moved or the addressees restricted by the Freedom of Information Act 2000, particularly for a number of the housing authorities.

Table 4.7: Response Rate – Main Survey

Nature of Return	Week	Frequency	%	Valid %	Cumulative %
Not completed	-	26	11.2	11.2	11.2
Completed	1	45	19.3	19.3	30.5
Completed	2	80	34.3	34.3	64.8
Completed	3	51	21.9	21.9	86.7
Completed	4	31	13.3	13.3	100.0
Total		233	100.0	100.0	

Table 4.8 shows a response rate of 22.82 per cent for the total returned questionnaires and 20.27 per cent for the fully completed ones.

Table 4.8: Response Rate – Total Returned vs. Total Completed

Total number of Questionnaires Administered	Total Returned		Total Completed	
	No.	Rate (%)	No.	Rate (%)
1021	233	22.82	207	20.27

The response rate was considered reasonable. There are several opinions regarding what should be reasonable as response rate for the postal survey technique. For example, Frankfort-Nachmias (1996) as cited in Liyanage (2006) puts the typical response rate for a personal interview as about 95%, and the response rate for a mail survey between 20 and 40%. The study by Akintoye and Fitzgerald (2000) assert that the response rate of 20 – 30 per cent is the norm with most postal questionnaire surveys of the construction industry. In contrast, Surveygizmo (2010) claims that internal surveys (e.g. student surveys or employee surveys) will generally receive a 30-40% response rate or more on average, while external surveys (e.g. customer satisfaction or public opinion surveys or postal survey) will generally receive an average of a 10-15% response rate. According to Leman (2010) typically, a postal response rate of 20% to 60% is reasonable.

4.14 DATA ANALYSIS

The first step taken in this process was to eliminate all cases with missing information and replace them with full stop (.) value. According to Bryman and Cramer (2005 as cited in Liyanage, 2006), missing data can be coded as ‘zero (0)’, ‘hyphen (-)’ or ‘full stop (.)’. Liyanage (2006) argues that “*using a hyphen in spreadsheets is considered unsuitable, as it causes confusion, being similar to the minus sign; the use of zero can also cause confusion as it can still be regarded as a figure*”, therefore, the use of a “*full stop can be considered as the most suitable as it avoids any confusion in terms of data analysis, handling or dealing with data*”.

The statistical analyses undertaken to interrogate the data obtained from the questionnaire survey included: descriptive analysis – frequency and cross-tabulation, a comparison of mean statistics, one-way analysis of variance (ANOVA) and reliability tests (Cronbach’s Alpha). The IBM Statistical Package for the Social Sciences (SPSS) software version 20 was used in carrying out statistical analyses. The software helps in the choice of methods used to analyse data obtained through the questionnaire survey in this research.

4.14.1 Descriptive Statistics

The two main techniques adopted in the descriptive statistics are the frequency distribution and cross-tabulation (Pallant, 2010). The two are discussed in the following sections.

4.14.2 Frequency Distributions

Frequency distribution is regarded as one of the first stages in analysing data, involving calculating and presentation of the frequency distribution of the dataset in a table format (Pickard, 2008). It is useful to start by describing the characteristics of the sample of cases with simple frequency tables or a series of charts (Matthews and Ross, 2010; Pallant, 2010). For example, a frequency table will look at one question from the questionnaire, and give the frequency of each possible response to the question including the percentage of respondents that gave the response (Haughton and Stevens, 2010). The usefulness of this data analysis enables frequency distributions to be regarded as the base of subsequent analysis of data, given that the distributions relate to the number of responses to each of the options available to respondents in each question contained in the questionnaire (Pickard, 2008). This method of analysis is adopted in this analysis.

4.14.3 Cross-tabulations

A cross-tabulation helps to present the data from two variables in one table; to identify similarities and differences between groups of different sizes and to show one variable in comparison to another (Matthew and Ross, 2010). Tables are useful to see where there may be differences in responses for one variable in relation to another variable. Differences can be made clearer by using percentages in each table column rather than just the number counts (Haughton and Stevens, 2010). In this research, cross-tabulation is used to identify differences and similarities between the opinions of the public and private sectors on economic, environmental and social constituents of SSH – and the importance and the need for achieving sustainability in social housing. Unlike frequency distributions, cross-tabulation can allow a researcher to look at any likely links between two variables (Pickard, 2008).

4.14.4 Comparing Means Statistics/ Mean Ranking/ANOVA

Means analysis is a parametric technique, involving comparison that can be made in various ways: between the means of two variables within a sample; between the means of one variable for two categories of another variable within a sample; and between the means of one variable across two samples. Blaikie (2003) however, argues that when more than two means are compared, ANOVA can be used. The nature of this research requires that more than two means

are to be compared and is based on the assumption that the population of scores, from which the sample came, is normally distributed and the variables that make up the data are independent of one another; that is, each measurement is not influenced by another. Several researchers have used mean value as a mechanism for ranking different variables of social research (Akintoye, 2005; Endut, 2008).

ANOVA tests the significance of the difference between more than two means. This can be between the means of an outcome variable for different categories of a predictor variable. ANOVA produces various statistics including the F ratio, which represents the variance between the groups divided by the variance within the groups; where large, the F ratio is an indication that there is more variability between the groups than there is within each group (Pallant, 2010). Accordingly, a Significant value or ‘p’ value less than or equal to 0.05 (e.g. 0.03, 0.001), means that there is a significant difference somewhere among the mean scores on the independent variables.

4.14.5 Reliability Analysis of the Data

Reliability of the research data means that the numerical results produced by an indicator do not vary because of characteristics of the measurement process or measurement instrument itself i.e. the dependability or consistency of the measure of a variable (Neuman, 2006). Checking the reliability of a scale is concerned with the scale’s internal consistency – the degree to which the items that make up the scale relate together (Pallant, 2010). The reliability analysis procedure calculates a number of commonly-used measures of scale reliability and also provides information about the relationships between individual items in the scale (Liyanage, 2006). One of the most commonly used indicators of internal consistency is Cronbach’s alpha coefficient (Pallant, 2010). According to DeVellis (2003 as cited in Pallant, 2010), the Cronbach alpha coefficient of a scale should be above 0.7. Table 4.9 gives the Cronbach’s alpha values of the scales used in this research.

Table 4.9: Cronbach’s Alpha Values of the Survey Data

Question No.*	Variables	Chronbach’s Alpha
1	General information about the respondents	.850
2 a, b, c	Economic, Environmental and Social Constituents of SSHP	.909
2.4	Barriers to the implementation of sustainable social housing	.834
2.6	Recommendations s for improving sustainable social housing	.801

*Refer to Appendix C

The outcome shows that the alpha coefficient of the data ranges from 0.801 to 0.909. This is suggesting that the measures of scale used are reliable and the data collected for the various analyses are interrelated, considering 0.7 as the acceptable cut-off value (Pallant, 2010; Norusis, 1992 as cited in Akintoye et al., 2005).

4.15 RESPONDENTS' PROFILE

Discussions of the respondents' profile are on their job titles and years of experience. This section can be regarded as important given that it helps to determine each respondent's level of responsibility and length of service in the organisation. The information gathered on respondents' profile can be used as an indication of the level of significance of the responses.

4.15.1 Respondents' Job Titles

Table 4.10 shows the job titles of respondents of the questionnaire survey used to obtain data for the various analyses carried out in this research. The respondents were drawn from housing associations - non-profit organisations (private sector) and housing authorities (public sector) and are in four categories. The result shows that 55.8% and 18.5% are chairmen/chief executives/managing directors and managers/heads respectively, compared with 5.6% and 4.3% who are secretaries and technical officers, respectively.

It has been observed that a job title can provide valuable information about the holder's level of performance, accountability and responsibility which can be of significant advantage to an organisation's level of business performance (Szaky, 2012). It is possible, therefore, to assume that about 74.3% of the respondents have significant management and executive roles in their establishment. The outcome can make the data obtained from these respondents more useful for achieving the objectives of this research. In view of the respondents' job titles, outcomes of the subsequent analyses could be assumed to be credible in relation to social housing sector needs and positioning.

Table 4.10: Job Titles of the Respondents

Respondents' Job Titles	Frequency	Percentage (%)
No Record of Job Title	37	15.8
Chief Executive/ Chairman/Director	130	55.8
Managers/Heads	43	18.5
Technical Officers	10	4.3
Secretaries	13	5.6
Total	233	100.0

4.15.2 Respondents' Years of Work Experience in the Social Housing Sector

Table 4.11 shows respondents' years of work experience in the social housing sector. The results indicate that 76.8% of them have above 10 years of work experience compared with 11.6% of below 10 years. This shows that a large number of the respondents could have acquired a reasonable practical experience and professional skill in the social housing sector. Acquiring work experience over a reasonable period of time has been regarded as a valuable asset that can greatly assist in making an outstanding contribution towards meeting the need of clients and achieving the organisation's objectives (McFarland, 2010). Therefore, it is possible to assume that the length of work experience of the respondents has enabled them to have some clear understanding about their clients' needs and the nature of the social housing business environment in the UK. This could have also helped them in acquiring reasonable practical knowledge about how SHP in the UK has developed over the years.

Table 4.11: Respondents' Years of Experience in Social Housing

Years of Experience in Social Housing Business	Frequency	Percentage
No record of respondents' years of experience	27	11.6
0-5 years	13	5.6
6-10 years	14	6.0
11-15 years	31	13.3
16-20 years	30	12.9
More than 20 years	118	50.6
Total	233	100.0

Based on the outcome, it can be inferred that respondents in this survey are well-placed to convey a valid and reliable opinion regarding operations and status of SHP in the UK. The years of experience should have enabled them to understand the strategies and operational activities in the social housing sector. Therefore, confidence can be given to the outcomes of the survey in terms of the valuable years of experience and the way the participants have responded.

4.16 ORGANISATIONS' PROFILE

The organisations' profile is basically on sizes and the sector (public or private), which a social housing organisation belongs.

4.16.1 Sectors of the Social Housing Organisations

Table 4.12 presents social housing organisations in six categories: public SSH; public social housing; private social housing; private SSH; cooperative social housing; and private/market housing (voluntary social housing organisations). The result shows that the organisations are in two sectors: the public sector known as housing authorities and the private sector as housing associations. They respectively constitute the two main sources for obtaining relevant empirical data for achieving objectives 3-5 of this research. The outcome shows that a total of 52% of the social housing organisations are in the private sector compared with 25.3% in the public sector, while 22.7% did not provide any information.

Table 4.12: Types of Social Housing Sectors

Social Housing Sector	Frequency	Percentage
With no indication of social housing sector	53	22.7
Public sustainable social housing	12	5.1
Public social housing	47	20.2
Private social housing	93	39.9
Private sustainable social housing	13	5.6
Cooperative social housing	9	3.9
Private/market housing (voluntary organisations)	6	2.6
Total	233	100.0

That the organisations in the private sector are more than twice those in the public sector is not surprising. This is because the growth rate of the not-for-profit housing associations and private practitioners in the UK started increasing due to the structural changes that took place in the 1970s followed by the RTB policy introduced in the Housing Act 1980 (Hills, 2007; Barclays, 2012). As the social housing stock of the local authority sector was reducing through demolitions, sales and transfers to housing associations, the stock of the private sector was increasing through transfers from the local authority sector, new buildings, and acquisitions of the existing properties (Hills, 2007). The development can be a major contribution to the higher figure of private housing associations in the UK. It has also been observed that some private social housing organisations are large in terms of stocks, number of branches and workforce (NHF, 2012). However, the outcome indicates that both public and private sectors are adequately represented in the questionnaire survey.

4.16.2 Size of the Social Housing Sectors

Table 4.13 indicates that the social housing organisations vary according to size. The result shows that organisations with sizes between 1-50 and 201-500 are dominant social housing organisations with 33% and 19.9% respectively compared with organisations having 51-100 (13.10%), 101-200 (16%) and above 500 (18%) staff strength.

Gupta (2010) argues that the organisation's size can be determined by the number of its employees, the largeness of its operation, and its market reach and share. The size of a social housing organisation can be an indication of the extent of its workload which could have an impact on the extent of the employment of qualified staff generally in the social housing sector. Given the wide spread and representation of the organisations in terms of size, it is reasonable to infer that the outcome of the analysis can be useful for achieving the objectives of this research.

Table 4.13: Sizes of the Social Housing Sectors

Number of Employees	Frequency	%
1 -50	68	33.00
51 -100	27	13.10
101 – 200	33	16.00
201 – 500	41	19.90
Above 500	37	18.00
Total	206	100.00

4.17 RE-CODING OF THE DATA FOR ANALYSIS

With the use of SPSS 20 software, some of the closed-end questions, including the 5-point Likert scale ones are collapsed and recoded as shown in Table 4.14. Recoding is a way of reducing or collapsing the number of categories of a categorical variable into fewer and manageable categories (Pallant, 2010). According to Buxton and Cornish (2007), recoding of the original variables may be needed in a number of different situations: to categorise a continuous variable such as recoding people's BMI (body mass index) into continuous group of variables - underweight, normal, overweight, obese; to combine some categorical variables to fewer categories; and to reverse the coding of the response to a particular question measured on a 5-point scale for 1 to become 5, 2 to become 4 and so on.

The survey conducted by Snyder et al. (2008) "consists of 31 questions, including 7 demographic questions, which mostly used a 7-point Likert scale (1 - strongly disagree, 4 - neutral, 7- strongly agree)". In analyzing the data, the 7-point Likert scale results were

collapsed into 3 categories: ‘Disagree’ (Likert 1 to 3), ‘Neutral’ (Likert 4), and ‘Agree’ (Likert 5 to 7)”. The research study by Magableh (2011) used a 6-point Likert scale, but the data were analysed by collapsing the results into dichotomous categories so as to produce fewer numbers which made the data easier to comprehend. According to Magableh (2011), collapsing the Likert scale into dichotomous categories helps to capture trends in data, thus, facilitating inferences, and improves the intelligibility of the analysis outcomes. The review of *Polling the Nations* by Choice Magazine (2011) shows that when data are “collected in 5-point, 7-point or 10-point Likert scale, two options are available for reporting the data: first, the data can be reported in terms of a Likert scale, giving the percentage strongly opposed and the percentage somewhat opposed, and second, the data can be collapsed, aggregating the number strongly opposed and somewhat opposed, to report simply the total percentage opposed”.

Table 4.14: Collapsed and Re-coded Categories of Variables

Group	Initial Variables for Data Collection	Recoded Variables for Data Analysis
1	Sector of the Social Housing Organisations	
	Public Social Housing	Public Social Housing Sector
	Public Sustainable Social Housing	
	Private/Market Housing (Voluntary)	
	Private Social Housing	Private Social Housing Sector
	Private Sustainable Social Housing	
	Housing Cooperative	
2	*Size of the Organisation (According to the number of people employed)	
	1-50	Small
	51-100	Medium
	101- 200	
	201-500	Large
	Above 500	
3	Sustainability/Green Need	
	Very Unimportant	Unimportant
	Unimportant	
	Moderately Important	Moderately Important
	Important	Important
	Very Important	
4	Achieving Sustainability in Social Housing	
	Very Unimportant	Unimportant
	Unimportant	
	Moderately Important	Moderately Important
	Important	Important
	Very Important	
5	Extent of Agreement to the Key Constituents, Barriers and Recommendations for Achieving SSHP from Economic, Environmental and Social Perspectives	
	Strongly Disagree	Disagree
	Disagree	
	Neither Disagree/Agree	Neither Disagree/Agree

	Agree	Agree
	Strongly Agree	

* (European Commission, 2012; Levy and Harris, 2013)

However, if the question has only dichotomous response categories, such as in favour or opposed, no such option exists. When data are collapsed, there are fewer numbers and they are easier to comprehend (Choice Magazine, 2011). Collapsing Likert scales into fewer response categories is a commonly used technique in public opinion research (Allen et al., 2007 as cited in Magableh, 2011).

4.18 STAGE 4 – DEVELOPMENT AND VALIDATION OF A FRAMEWORK FOR IMPLEMENTING SUSTAINABLE SOCIAL HOUSING PROVISION (SSHP)

In the context of this study, this section discusses the process followed to develop and validate the framework for implementing SSHP. Findings from stage 2 (content analysis) and stage 3 (the empirical survey) are used to develop the framework for implementing SSHP (Figure 4.3). The research process showing how findings from the two stages were used to develop and validate the framework is shown in Figure 4.10. The stage 4 consists of two phases. Phase one is the development of the framework for implementing SSHP and phase two encompasses the validation of the framework for implementing SSHP.

4.18.1 The Development of the Framework for Implementing SSHP (Phase One)

This section represents phase one of the process of the development of the framework for implementing SSHP and goes further to present discussions on the steps involved in the development. Figure 4.10 shows the processes involved in the development and validation of the proposed framework for implementing SSHP. The literature evidence suggests that various steps can be taken to develop a research framework. For example, Robinson et al. (2011) carried out 4 steps in the first phase of the process taken to develop a framework for the identification of research gaps. The 4 steps are: focused literature review; the review of the current practices of evidence-based practice; the review of current practices of organisations involved with evidence systems; and the development of a framework. By combining the first two steps (literature review/content analysis) in this research, three steps were carried out to develop a framework for implementing SSHP (Figure 4.10). The description of the three steps is as follows:

Step one: This step combines a review of the relevant literature and analysis of documents related to achieving sustainability in social housing in order to identify constituents, barriers to the implementation and recommendations for achieving SSHP (see Section 4.11 and Chapter 5).

Step two: This step adopts the quantitative survey approach involving the use of a postal questionnaire method to gather data on constituents, barriers to the implementation and recommendations for improving SSHP from housing authorities (public sector) and housing associations (non-profit private sector) in England (see Section 4.12 and Chapters 6, 7 and 8).

Step three: This step was taken to develop a framework for implementing SSHP (see Chapter 9). It uses findings from the content analysis and empirical survey to develop the framework.

4.18.2 Validation of the Framework for Implementing SSHP (Phase Two)

This section presents discussions on the need to validate the developed framework for implementing SSHP. Figure 4.10 shows the four steps involved in this phase. In the context of this research, validity relates to the question, ‘What does the framework seeks to achieve?’ (Burns, 2000). This implies that validity is significant for confirming the accuracy and trustworthiness of the research framework (Bernard, 2013). The concept of validity is to ensure that through the research findings or a framework, the objective of a study can be achieved (Kumar, 2011). The literature evidence shows that there are different types of validity. For example, Krippendorff (1980) presents 7 types of validity (see Section 4.11.7) and Burns (2000) presents five types of validity as: “*predictive, concurrent, content, construct and face*”. On the contrary, Bernard (2013) argues that there are four types of validity as: “*face, content, construct, and criterion validity*”. Although Kumar (2011), simply grouped validity types into three: “*face and content; concurrent and predictive; and construct*”, actually they are still five types.

According to Bernard (2013), establishing **face validity** involves looking at the operational indicators of a concept in order to decide whether or not the indicators make sense on the face of it. In this context, five professionals in the social housing sector were asked to decide whether or not the sustainability indicators contained in the framework make sense in terms of how they can adequately address sustainability issues in SHP. Basically, the **content validity** was to establish the extent to which indicators of the constituents, barriers and recommendations for improving SSHP in Section A, the relevant stakeholders and their responsibilities identified in Section B and how to evaluate the effectiveness of the stakeholders’ performance shown in Section C can help to achieve sustainability in SHP. However, Kumar (2011) argues that a respondent’s judgement on “*face and content validity*” can be based on subjective logic given that different people may have different opinions on the two types of validity. The **concurrent validity** is for the chosen professionals to comment on the depth of coverage of the framework on the issues relating to achieving sustainability in SHP if compared with any similar

framework they might have come across. The **predictive validity** seeks to determine the extent to which the framework can assist in the implementation of SSHP in terms of whether it can be concluded that it has accurately achieved the overarching aim of this research i.e. ‘the development of a framework for implementing SSHP’. Finally, the **construct validity** tends to show if there is a close fit between what the framework is supposed to address (Bernard, 2013). In this context, the outcome of the validation is to show how reliable is the framework as an instrument for implementing SSHP.

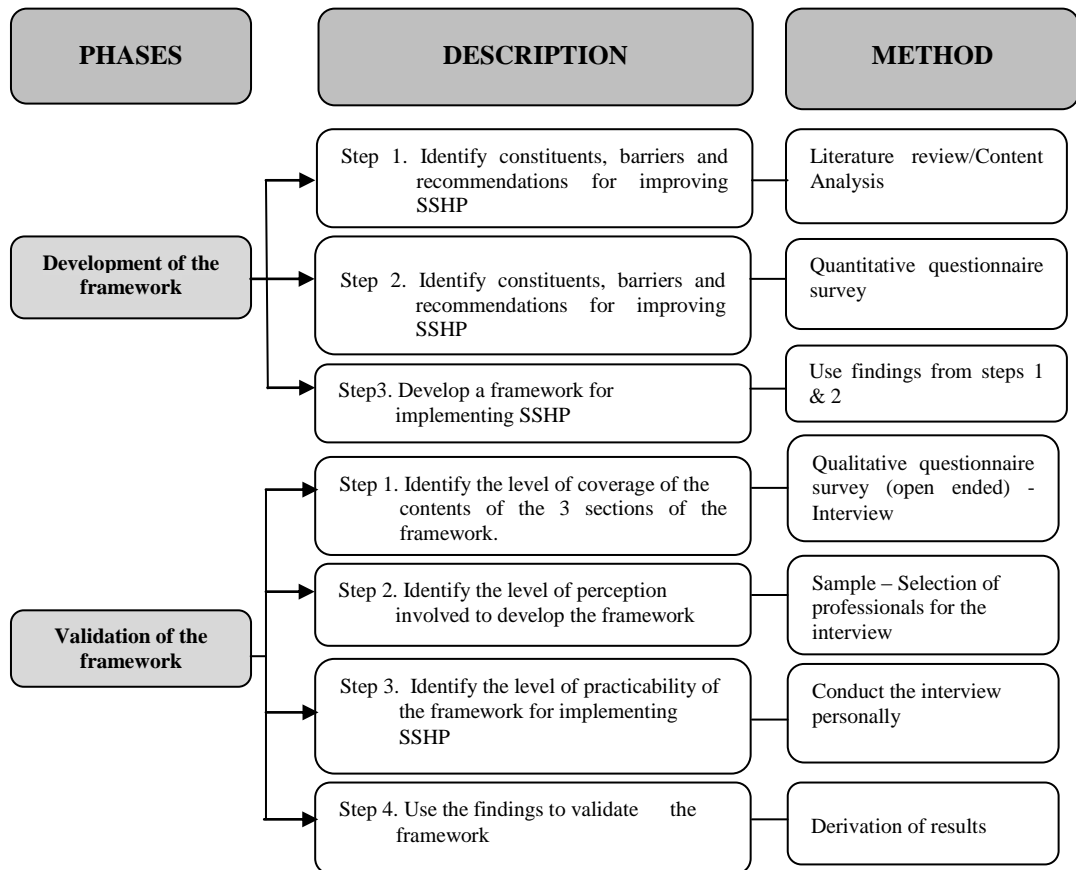


Figure 4.10: Development and Validation of the Framework for Implementing SSHP

Based on the above listed types of validity, relevant interview questions were used to test the validity of the developed framework. The questionnaire comprised of open-ended questions (see Section 9.9) to address the following aspects of the framework:

- The level of coverage in terms of the three sections that constitute the framework. This was to establish the appropriateness of the whole sections for addressing the need for the framework.
- The level of coverage in terms of the in-depth of the contents of each section. This becomes necessary in order to establish the adequacy of sustainability indicators and if

the framework adequately captured the stakeholders and their responsibilities, including evaluation criteria.

- The flow, simplicity or logic of the construction of the framework. The rationale of establishing validity through logic is for ensuring the justification of the entire contents of the framework for achieving the aim of this research (Kumar, 2011). This implies that the validity is for confirming that the framework can be useful for implementing SSHP.
- The overall usefulness of the framework in terms of its relevance in the SSH sector. This is important to establish whether the framework can have an impact on achieving sustainability in SHP.
- The view of the professionals regarding the overall concept of the framework was further required, which was obtained through the validity. The participants at this stage are to make additional comments or professional judgment about any other areas of the framework that were not covered by the aforementioned aspects.

Based on the above, the developed framework was validated using 5 professionals in the social housing sector, who participated in the empirical survey of this research. According to Jabareen (2009) validating a theoretical framework is a process involving the researcher seeking validation among outsiders who may be relevant professionals, researchers or members of the public. The selected interviewees were to give independent opinions regarding the aforementioned aspects of the framework. The contribution of the interviewees was useful in establishing the practicability of the developed framework. The selected interviewees are those with practical experience within the social housing sector.

The developed framework was personally delivered to all the five interviewees a week prior to the interviews. Section 9.9 presents more discussions on the validation of the developed framework.

4.19 SUMMARY

This chapter detailed the epistemological paradigm of this research and established the philosophical trinity and philosophical alignment of the research. The positivist and pragmatic epistemologies adopted have assisted in the choice of appropriate methodology and methods for this research. Findings from this chapter have shown that, although quantitative and qualitative methodologies can be adopted for different purposes, one is not superior to the other. The two can be combined or only one approach can be adopted, depending on the nature of research and research objective(s) to be achieved. Based on the nature of respondents and expected data, a quantitative approach has been adopted for the empirical survey of this research. The use of the

methodology has been justified “by the context of the research, research questions, issues of sampling, relationship between the researcher and subject, and validity and reliability.

Literature findings have also shown that 5-point, 7-point or 10-point Likert scale variables can be recoded into a 3-point level for the purpose of data analysis (Section 4.17). Accordingly, the 5-point Likert scale results of this research have been collapsed into a 3-point level (Table 4.14). The data is condensed and easier to comprehend without losing its strength. The chapter adequately represents all stages involved in the research (Figure 4.3).

CHAPTER 5. CONCEPTUAL MODEL OF SSHP

5.1 INTRODUCTION

This chapter deals with the development of a conceptual model of SSHP through document content analysis. The main objective of this chapter is to present the key factors of SSHP within the context of selected documents and used the outcomes as guide for preparing the questionnaire for the empirical survey which sought to generate data for this research. Nvivo 10 software is used for analysing the data generated from the contents of the relevant documents before using the findings to develop the conceptual model for SSHP. The variables of constituents, barriers and recommendations as contained in the various documents selected for the content analysis are explained in Sections 5.2.1; 5.3.1 and 5.4.1). These explanations are applicable to the usage of the variables in Chapters 5, 6, 7, 8 and 9 of this study.

5.2 CONSTITUENTS OF SSHP

Our Common Future also referred to as the Brundtland report published in 1987 by the World Commission on Environment and Development (WCED) defined the term, sustainable development (SD), as “*development which meets the needs of the present without compromising the ability of future generations to meet their own needs*” (WCED, 1987). Arising from the report is the concept of SD from which the three pillars of economic, environmental and social sustainability have emerged. Various discussions and adoption of the concept since the Brundtland report have commonly viewed the three aspects of SD (Reed ed., 1997 as cited in Harris, 2000) as:

- Economic: An economically SD should encourage the provision of adequate and lasting goods and services;
- Environmental: An environmentally SD must maintain a steady resource base, avoiding excessive use of renewable resources, and depleting non-renewable resources for generating adequate and useful investment; and
- Social: A socially SD must promote equal distribution, adequate provision of social services, like health and education, and ensure gender equity and accountable and participatory governance.

Similarly, Simpson and MacDonald (2003) argue that every planning policy and practice on sustainability values must encourage adequate housing provision, embrace social cohesion, and promote economic prosperity and environmental protection.

Accordingly, with respect to SSH, the contents of the selected documents are analysed within the context of the three pillars of sustainability, which are detailed in the subsequent sections. The findings are presented in the tabular format as follows (Table 5.1):

Table 5.1: Presentation of Findings (An Example)

Ranking (Column A)	Key Factors (Column B)	Occurrences (Column C)	% (Column D)
1	Affordability	64	20.2
2	Economic Growth	49	15.5
3	Meeting housing needs of everyone	41	13.0
		
		
		
		
Cumulative Total		316	

5.2.1 Explanations on Economic, Environmental and Social Constituents of Sustainable Social Housing Provision (SSHP)

Economic Constituents

Affordability: Affordability is in terms of housing of which the cost to the tenant is not regulated by the market forces of demand and supply, but is made cheaper through some form of government assisted programmes or subsidies for ensuring that households are not paying more than 30% of their annual household incomes for occupying it.

Adequate funding: This is referring to the situation whereby stakeholders - governments, financial institutions and non-profit organisations provide adequate funds for the provision of SSH through various means like budgetary allocations, low interest mortgage, subsidies, etc. with the clear purpose of meeting housing needs.

Adequate provision: The provision of SSH should be for meeting housing needs of the present and future generations, particularly low income households so as to avoid housing crisis like homelessness, high prices, overcrowding, etc.

Appropriate construction technology: This refers to the use of modern construction technology that enhances efficiency in the use of resources e.g. materials, land, energy, water, etc. for achieving sustainability in SHP.

Economic design: This refers to housing design that increases flexibility and adaptability for accommodating future changes in households' sizes, ages, cultures, physical abilities, waste reduction and enhancing residents' lives through affordable rental, purchase or maintenance cost.

Economic Growth: This is an economic situation that creates an enabling environment, through government's economic policies that promote the provision of SSH for meeting housing needs.

Effective legal and administrative frameworks: These are sustainability requirements for making governments to provide appropriate regulatory and fiscal environment that can stimulate necessary innovations in the provision of SSH by ensuring the use of modern technologies, environmental friendly materials, efficient components accreditation schemes and qualified public officials to supervise and give necessary guidance to housing design teams, developers, building contractors and local authority staff who are involved in the building process.

Efficient economic planning: This requires the government to ensure efficient allocation and use of resources, reduce the strain and construction impact on the environment, promote the use of modern technology and expert knowledge and to improve funding strategies for the provision of adequate and affordable social housing.

Efficient management: This is referring to the prudent use of natural, human and financial resources, including efficient co-ordination of construction and user activities so as to achieve the set sustainability objectives.

Efficient use of resources: This is in terms of ensuring efficient resource consumption, less waste, re-use and recycling of materials, lower life-cycle and maintenance costs and greater user satisfactions.

Good governance: This is in terms of the political will and government's determination to ensure the provision of adequately funded social housing, which is made available at affordable costs, particularly for vulnerable households and for advancing the cause of women, sustaining the environment, creating opportunities for skills acquisition and employment and promoting the well-being of residents.

Meeting housing needs of everyone: This requires that providers must make SHP accessible and available to every household, in terms of costs, location and number, irrespective of sex, disability, economic, social and cultural backgrounds.

Provision of infrastructure/social services: These are social, economic goods and services provided by developers on a continuing basis like health, education, public transport, local shops, bus stops, neighbourhood schools, water and energy supply, employment opportunity, security and other municipal infrastructure aimed at improving living conditions and well-being of residents within the social housing environment.

Whole-life cost: This is concerned with the land, building structures and operating costs over the life of the social housing, particularly those costs built into the house itself, its location or its supporting infrastructure e.g. energy, maintenance, water and transport facilities, including owning and living costs.

Environmental Constituents

Environmental protection: SSH seeks to promote sustainability strategies for preventing environmental issues arising from the construction industry like pollution such as water, ground and air; greenhouse emissions; climate change; waste of natural resources; hazards and emissions from vehicles.

Appropriate design: Sustainable building design is required for promoting appropriate strategies for protecting the environment through renewable energy consumption, healthy and comfortable interior spaces, efficient use of resources like land and materials, mixed-use development, flexibility and adaptability of the development to changes in sizes, ages, cultures and physical disabilities of households; and for ensuring affordability and quality of social housing.

Use of alternative transport modes: Alternative transport modes like pedestrian walkways, cycling, and public transport facilities can help to reduce traffic congestion, air pollution and gas emissions, travel needs through the use of private motor vehicles like car, taxi and motorbike and can further promote opportunities for walking, cycling and use of public transport.

Effective land use planning: This is the strategy of the government to make adequate land available for SHP and for ensuring that job locations and other social facilities are accessible to homes by foot, bicycle or public transport.

Efficient use of natural resources: This refers to the prudent use of natural resources, particularly land and by minimising waste through re-use and recycling of materials, and ensuring sustainable waste disposal.

Efficient waste management and use of recyclable materials: These involve optimising material usage, energy and water consumption etc. for enhancing sustainability criteria like good human health; environmental quality; efficient waste disposal; and standard landscapes, townscapes and opens spaces.

Ensure the polluter pays for the act: This requires the government to ensure that polluters of the social housing environment bear the cost of pollution and for curbing further acts of pollution in the public interest.

Environmental friendly materials: This is for ensuring that the choice of materials, goods and technologies used for the provision of social housing is in recognition of the environmental limits, so as to avoid pollution and relate the form of buildings to a harmonious relationship between the inhabitants and natural environment.

Use of renewable energy resources: This shows that achieving sustainability in SHP can help to promote the use of renewable energy sources like solar thermal, wind power, bio-mass, etc. for minimising carbon emission and climate change.

Social Constituents

Accessible to efficient social services: SSH requires that residents should have equal access to basic social services like health, water, education, transportation, recreation, market, employment and participatory decision on a continuing basis.

Welfare and quality life: SSH promotes residents' well-being and creates equal opportunity for all, including the assurance of a sense of security, belonging, familiarity, support, neighbourliness and social cohesion by integrating different social groups, based on respect for cultures, traditions, economic, and social backgrounds.

Skills acquisition and employment opportunities: This is a sustainability requirement as a welfare package for empowering social housing residents through skills acquisition and employment opportunities, first from social housing construction activities and by any other possible means for meeting financial obligations for the accommodation and for promoting a sustainable life style.

Provision of community development and social services: This is a sustainability requirement for ensuring the provision of quality local health care, local markets and shops, schools, security and opportunities for cultural, leisure, community sports and other lifelong social services for children, young and older residents.

Stakeholders' participation: This is a social sustainability constituent for enabling every stakeholder in the provision of SSH, particularly the end-users to actively participate in the development processes and be given the opportunity to have a say in decisions that directly affect their lives like design, construction, allocation and management activities.

Security of life and property: This requires that residents in a residential community must be sure of safety on roads and be free from the fear of vehicle crime, burglary, robbery, violent crime and anti-social behaviour.

Good and quality housing provision: This refers to the physical elements of social housing in terms of design, materials, facilities and surrounding open spaces, including those elements that are related to the management of tenancies like rights and responsibilities, and other subjective elements that promote tenants' satisfaction and which prolong the useful life of the building.

Promote social cohesion: This is the provision of a well-integrated mix of decent homes of different types and tenures that support a range of household sizes, ages, culture and incomes.

Gender equality: This is a social sustainability requirement for promoting women's equal access to decent and full participation in housing provision, on the basis of equality with men during planning, delivery and decision-making processes.

A sense of a place to live: This is a situation for providing residents with decent social housing in decent neighbourhoods i.e. housing that is inclusive; well planned, attractive, properly maintained; and offers comfort, security, equality of opportunity and good services for all.

Public awareness: This requires that end-users, providers, contractors, suppliers and the general public must be educated and well-informed about the use of simple sustainability technologies, ability to operate sustainable home equipment through user-guide leaflets and be provided with adequate sustainability data, including benefits of living a sustainable life style.

Equity: This is a social constituent for enabling every household to have equal access to decent housing without any form of discrimination in terms of disability, sex, colour, race, culture, social and economic.

5.2.2 Analysis of Economic Constituents

Table 5.2 shows the key economic constituents of SSH as generated from the selected documents and publications. The occurrences of the key economic constituents of SSHP mostly appear as phrases (explicit and implicit) in the analysed documents. This is similar to all the factors listed under constituents, barriers and recommendations for achieving sustainability in SSHP in the rest of this chapter.

The result shows that the top ten of the economic constituents of SSHP are: affordability (20.20%); economic growth (15.50%); meeting housing needs of everyone (13.00%); adequate funding (8.20.00%); provision of infrastructure and social services (6.00%); adequate provision (6.00%); efficient use of resources (5.40%); economic design (5.40%); efficient economic planning (5.10%); and good governance (4.70%).

Although four of the key constituents are last on the list, they are by no means irrelevant to achieving economic sustainability in SHP. For example, the use of appropriate construction technology is vital for enhancing energy efficiency by minimising gas emission and can assist in providing adequate and secure housing for everybody, taking into consideration cultural differences, specific social conditions and vulnerability (UN, 2002; Parkin et al., 2003; Kirklees

Council, UK, 2008; Pullen et al., 2010a). It is not surprising that achieving whole-life costs of building is ranked last on the list. This only suggests that many people may not be taking it as a serious issue despite its importance to achieving sustainability in SHP. The study by the Institute for Sustainable Futures, the University of Technology, Sydney (2003) shows that sustainability principles consider various costs like: costs of the land and construction of the house, and operating costs during the life of the building like costs of maintaining the environment and supporting infrastructure such as electricity, water and residents' transportation. Whole-life costs should be considered and planned for in housing provision, procurement and maintenance (Parkin et al., 2003; Chartered Institute of Housing, Northern Ireland, 2010; Dolata, 2011).

Table 5.2: Constituents of SSHP – Economic

Ranking	Key Factors	Occurrences	%
1	Affordability	64	20.2
2	Economic Growth	49	15.5
3	Meeting housing needs of everyone	41	13.0
4	Adequate funding	26	8.20
5	Provision of infrastructure/ social services	19	6.00
5	Adequate provision	19	6.00
7	Efficient use of resources	17	5.40
7	Economic design	17	5.40
9	Efficient economic planning	16	5.10
10	Good governance	15	4.70
11	Efficient management	10	3.20
12	Appropriate construction technology	9	2.80
13	Effective legal and administrative framework	8	2.50
14	Whole-life cost	6	2.00
Cumulative Total		316	100

Affordability ranks highest among the key factors. This outcome is not surprising given the general believe that SHP should be adequately available and affordable for meeting housing needs. This implies that the respondents are of the view that achieving affordability is a fundamental objective of SHP. The study by Environment Australia (2003 as cited in the Institute for Sustainable Future, the University of Technology, Sydney, 2003) shows that a sustainable housing must be affordable:

- To the present and future generations;

- To the people whether opting for ownership or rental from the public or private sector;
- To meet everybody's housing need irrespective of age, physical disability, household sizes, culture, structure, and income; and
- By considering the whole-life cost of the house irrespective of types and locations.

Wiesel et al. (2012) describe affordable housing as housing (market or non-market) that is provided for rent or purchase at a cost that is within the financial capacity of every household. Given its importance, Mulliner et al. (2013) conclude in their study that the evaluation of housing affordability should be based on the wide-ranging conditions that affect residents from economic, environmental and social perspectives. Thus, it appears acceptable that the overarching aim of SSH is to allow access to decent housing at affordable price for every household.

The study by Emsley et al. (2008) shows that affordable housing can be referred to as all housing whose cost to the occupiers is not strictly regulated by the market but rather made cheaper through some form of government intervention. Wiesel et al. (2012) also argue that the main objective of affordable housing provision is to improve housing affordability such that low-income households can access a decent housing that they could not have afforded through the private market. Therefore, the outcome tends to suggest that affordability remains the main focus of SSHP, even if viewed from the economic, environmental and social sustainability. Arguably, affordability is the driving force for other key factors for achieving sustainability in SHP. Clearly, the outcome shows that affordability remains the most critical constituent of SSHP.

However, affordability and sustainability can be viewed as two opposing concepts. For example, Karuppannan and Sivam (2009) observe that affordable housing can limit the cost of housing since less than 30% household's income should be spent on housing. Karuppannan and Sivam (2009) further argue that if households spend more than 30% of the household income on housing it implies they are in housing stress. Thus, it is challenging for both facilitators and providers to provide affordable housing that is also sustainable (Karuppannan and Sivam, 2009). Notwithstanding, SSH is meant to be provided by governments and not-for-profit organisations, particularly for meeting the housing needs of the low and moderate-income households whose gross annual income cannot be sufficient for accessing decent housing in the market.

5.2.3 Analysis of Environmental Constituents

Table 5.3 shows the key environmental constituents of SSHP generated from the contents of the analysed documents. The outcome details 9 key factors from which environmental protection (34.60%); efficient use of natural resources (13.60%); use of renewable energy resources and minimising energy consumption for reducing environmental impact (11.70%); efficient waste management and use of recyclable materials (10.80%); and appropriate design (9.70%) are five highest ranking environmental factors. That environmental protection ranks highest is not surprising, given that the growing awareness of SD has led to the increasing acceptance of the concept as that which protects the environment (Harris, 2000; Wiesel et al., 2012). The concept of SD is to develop the environment and ensure that the natural resources required for sustaining human life and for meeting housing needs are intact and safeguarded for future generations (Department of Trade and Industry, UK, 2006; Cooper and Jones, 2008; 2009; Opoku and Fortune, 2011; Aluko, 2011).

Human activity is only environmentally sustainable when it can be carried out continually without exhausting natural resources or degrading the natural environment (Khalfan, 2002). Therefore, construction activities require sustainability policies to combat them, given that they constitute the four major sources of environmental pollution such as waste materials, emissions from vehicles moving people and materials, noise from construction sites and dumping of wastes to water and ground (Finch, 2007). Power (2004) argues that SD promotes a healthy environment that reduces ecological impact, low waste generation or pollution and encourages recycling and protection of the natural environment so that everybody may enjoy environmental benefits like greenery, space planning, social well-being and community facilities such as space for walking, cycling, playing and relaxing.

Zakaria (2007) argues that environmental aspects of any SD, which can be related to SSH development, require finding a balance between protecting the physical environment and its resources, and to use these resources in a way that will enable the earth to keep on providing a suitable quality of life for all human beings. Similar to what obtains in the US and Australia, the UK's SD guiding principles is for regarding the limits of the planet's environment, resources and bio-diversity, to improve our environment and ensure that natural resources required for life are unspoiled and keep on for future generations (European Commission, 2009; Higham and Fortune, 2011).

Appropriate design is regarded as a key sustainability factor that cannot only assist in improving the structural quality of social housing but the general purpose of meeting house needs. Accordingly, the main features of sustainable residential design such as growing density, varied

use and nearness to public transport are being embraced gradually in Australian cities (Karuppanan and Sivam, 2009; Pickvance, 2009b).

Table 5.3: Constituents of SSHP – Environmental

Ranking	Key factors	Occurrences	%
1	Environmental protection	160	34.60
2	Efficient use of natural resources	63	13.60
3	Use of renewable energy resources and minimise energy consumption for reducing environmental impact	54	11.70
4	Efficient waste management and use of recyclable materials	50	10.80
5	Appropriate design	45	9.70
6	Use of alternative transport modes	38	8.20
7	Effective land use planning	28	6.00
8	Environmental friendly materials	19	4.10
9	Ensure the polluter pays for the act	6	1.30
Cumulative Total		463	100.0

According to Khalfan (2002), a good designed house ensures that all possible measures are engaged to accomplish a resourceful, enduring and elegant relationship of use areas, circulation, building form, mechanical systems and construction technology. Appropriate design allows for sufficient size, scale and density, and the appropriate design to support basic facilities in the neighbourhood and minimises use of resources such as land (Simpson and MacDonald, 2003); increases the flexibility and adaptability of housing to provide for changing household sizes, ages, cultures and levels of physical ability (Hanna and Webber, 2005); and can help to achieve a better relationship between the physical aspects of a community's housing, layout and build quality and the sustainability of the demand for that property (Long and Hutchins, 2003). Appropriate design can help to achieve a better relationship between the physical aspects of a community's housing, layout and build quality and the sustainability of the demand for that property (Long and Hutchins, 2003).

On the basis of its construction, environmental sustainability in social housing can address the impact of construction activities on the environment by minimising waste, using natural

resources and energy resourcefully (Opoku and Fortune, 2011). Thus, the outcome can assist in achieving environmentally healthy social housing. In a similar context, Hanna and Webber (2005) observe that sustainable and environmentally healthy housing are integrated concepts. They further claim that environmentally healthy housing will not only contribute to broader environmental well-being, but it can also flow from a context where ecological stability, connectivity, self-organising of natural systems, and the maintenance of ecological integrity are present.

Although ensuring that polluters should be paying for their acts is the least ranked environmental factor for achieving SSHP, it is widely acknowledged at international level as an important means of addressing environmental issues. For example, the polluter pays principle is “*to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest*” (Principle 16, UN General Assembly, 1992 as cited in Munasinghe, 2003). The economic justification is that this offers an inducement for polluters to decrease their emissions to optimal (i.e., economically efficient) levels (Munasinghe, 2003). The concern of the international authorities is to make sure that environmental and social costs are passed onto those who impose them (Polluter Pays) through the legislative and fiscal frameworks that support sustainable behaviour, and provides necessary penalty to curb unsustainable practices (Cooper and Jones, 2008; Chorley, Preston and South Ribble Core Strategy – Sustainability Appraisal Scoping Report, 2006).

5.2.4 Analysis of Social Constituents

Table 5.4 shows the key social constituents of SSHP. The result shows that, welfare and quality life (18.00%); skills acquisition and employment opportunities (17.40%) and accessible to efficient social services (14.60%) constitute the three topmost key social constituents of SSHP. This is not surprising given that the social aspect of SD globally is widely recognised to encompass these three key factors. According to the South London Waste Plan Sustainable Appraisal, Scoping Report (2008) SD seeks to accompany a better-quality of life, community well-being and sustainable economic development while still guarding against environmental degradation, depletion of resources and loss of biodiversity.

The social aspect of SD also entails the growth of impartial and just societies that nurture positive human development and offer people with opportunities for self-actualisation and a suitable quality of life (Zakaria, 2007). According to Harris (2000); Power (2004), a socially sustainable system must promote accessibility to good quality local public services such as health and education, achieve distributional equity, political accountability and participation. Sustainable development encourages housing developers, their design teams, and the planning

system to create high quality places with priority for the provision of walking, cycling and public transport facilities for the delivery of a quality of life which occupants are eligible to enjoy, in terms of facility, safety and suitability for present and future generations (Government of Ireland, 2009; Opoku and Fortune, 2011).

Table 5.4: Constituents of SSHP – Social

Ranking	Key factors	Occurrences	%
1	Welfare and quality life	69	18.00
2	Skills acquisition and employment opportunities	67	17.40
3	Accessible to efficient social services	56	14.60
4	Equity	33	8.60
5	Provision of community development and social services	32	8.33
6	Stakeholders' participation	30	7.80
7	Security of life and property	26	6.77
8	Good and quality housing provision	21	5.50
9	Promote social cohesion	19	4.90
10	Gender equality	11	2.90
10	A sense of a place to live	10	2.60
12	Public awareness	10	2.60
Cumulative Total		384	100.0

Nonetheless the low ranking of factors like promotion of social cohesion; gender equality; creation of a sense of a place to live; and public awareness, they are important for achieving social sustainability, particularly in social housing provision. For example, Parkin (2000) argues that SD is that which gives respect for people's culture and promotes cohesion and good living. Parkin also believes that SD must add to the social progress of the society by recognising gender equality and meeting housing needs of everyone. Therefore, SSHP can be regarded as a development for promoting gender equality, a place to be proud of living and eradication of poverty in the society. For example, the UN (2002) advocates for the need to support women's access to decent housing with full involvement in the decision-making process at all levels, on the basis of equality with men. Poverty, which is regarded as the greatest global challenge facing the world (UN, 2002) can be eradicated through SSHP that seeks to meet housing needs. Expressing a similar view, UN-HABITAT (2011) opines that "*low cost sustainable housing*

policies, standards, and techniques have the potential to provide multiple benefits for residents and the wider population, including: reduced greenhouse gas emissions, durability and resilience to climate change, health benefits, and poverty alleviation”.

According to Kates et al. (2005) SD helps to create: a condition that enables every household meet its housing needs; have opportunities of choices; and a situation in which self-respect, harmony, fairness, economy, employment, security, health, and quality of life. The Government of Ireland (2009) presents three ways in which objectives of sustainable housing can be achieved as follows: (i) by ensuring the provision of high quality homes and neighbourhoods, (ii) residences where people truly want to live, to work and to raise families, and (iii) environment for meeting the housing needs of the present and those of the future generations. In addition, governments should assist in neutralising bad perception of affordable and SSH schemes as a way of overcoming community opposition by undertaking specific advocacy activities in educating developers about more appropriate and environmentally sustainable housing types (Gurran, 2003; CIH, Northern Ireland, 2010). Public awareness strategies are necessary for educating residents like the provision of users’ manual for showing how to use sustainable equipment being installed in houses, and to minimise waste generation, environmental pollution and maximise energy efficiency (South London Waste Plan: SA Scoping Report, 2008).

5.3 BARRIERS TO THE IMPLEMENTATION OF SSHP

This section contains discussions and data analysis on the key barriers to the implementation of SSHP. Respondents’ opinions are considered based on economic, environmental and social perspectives.

5.3.1 Explanations on Economic, Environmental and Social Barriers of Sustainable Social Housing Provision (SSHP)

Economic Barriers

Poor affordability: Poor supply relative to demand and high costs can make vulnerable households not to have access to decent housing, which can also be major reasons for experiencing housing stress as a result of the need to spend more than 30% of annual household incomes on housing with little to spend on other basic family needs like education, feeding, clothing, health, mobility, etc.

Inadequate supply: Shortage of SHP can prevent the need to meet housing needs, which can be a major reason for housing crisis like poor affordability, slums and homelessness.

Inadequate funding: Shortage of funds from governments in terms of poor budgetary provision etc, financial institutions and non-profit housing associations is a major barrier for achieving sustainability in social housing for meeting housing needs.

Poor legal and administrative framework: Inefficient policy, legal and administrative frameworks can be barriers to the provision of affordable housing by governments and not-for-profit organisations for meeting housing needs.

Poor development plan: Poor development plan can cause a mismatch between supply and demand of social housing like the supply of too much land and too many new homes in some low demand localities and inadequate provision in some higher demand areas.

Poor governance: This is evident in the lack of political will, poor monitoring and enforcement of law and legislation for promoting sustainable construction, achieving sustainability, including poor funding, adequate provision and lack of incentives to private developers who may want to pursue sustainability in their social housing projects.

Poor infrastructural development: Inadequate provision of physical infrastructure and social services like roads, bus stops, railways, etc. can be barriers to achieving sustainability in SHP.

Lack of Appropriate Technology: This refers to the lack of understanding of low-energy design strategies, poor concept of whole-life costing technique, inability to identify opportunities for the inclusion of renewable energy technology and poor accessibility to appropriate guidance in sustainable building methodologies and technologies.

Poor design: This refers to a building design that does not promote the use of sustainable materials, fails to allow for affordable costs and avoid the use of appropriate technology for SHP.

Poor maintenance: Poor structural condition and obsolescence, etc. are signs of poor maintenance.

Lack of research work: Minimal research work may not promote achieving sustainability in social housing in terms of the use of environmental friendly materials, modern technology etc.

Lack of whole-life value of buildings: Poor knowledge about elements that constitute whole-life costs of SSH like land, construction and maintenance can cause sustainability issues like funding, affordability, quality and completion (abandonment).

Environmental Barriers

Use of poor quality materials: The use of unsustainable construction materials for developing social housing can increase maintenance costs, reduce the quality, increase construction costs and degrade the environment.

Non-usage of renewable materials: Non-usage of recyclable materials and renewable energy sources can a major barrier to achieving sustainability in SHP.

Poor accessibility: This refers to the situation whereby residential neighbourhoods are not provided with adequate transportation facilities like roads, rail, and bus stops, pedestrian and disabled walkways for easy accessibility.

Lack of alternative transport modes: Preference to the use of private cars with inadequate provision of public transport facilities, cycling and pedestrian walkways can be identified as barriers to SSH. **Waste of natural resources:** Pressures on land, energy use, and waste of natural resources like water, biodiversity and green space can constitute barriers to achieving sustainability in SHP.

Poor land use plan: Poor land use plan increases pressures on developed land and pollutes the natural environment causing inadequate allocation of land resources for the provision of social housing and unattractive houses with lack of adequate amenities and facilities.

Poor Environmental Protection: Evidences of poor environmental protection are: landscape deterioration, flooding in the low lying areas, depletion of air and water quality, including careless garbage management and indiscriminate dumping of waste.

Social Barriers

Poor Health and well-being: Poor healthy living and well-being of social housing residents can manifest through crime and fear of crime, high levels of pollution, poor healthcare and educational services, poor access to cultural, leisure, community, sport and other activities, which can serve as barriers to SSH neighbourhoods where people can enjoy a high standard of living.

Lack of stakeholders' involvement: Non-involvement or late involvement in the development processes can prevent end-users from: participating in the design, construction, delivery and management activities; having access to the necessary information needed for making appropriate choice about suitable accommodation; the knowledge about the benefits of living a sustainable life style; and awareness of the significance of achieving sustainability in social housing for meeting housing needs.

Poor education and skill development: Poor education and skill development can be major issues in achieving sustainability in SHP given the: unfamiliarity amongst builders with the use of sustainable building techniques and products; general lack of understanding of low-energy design strategies; poor concept of whole-life costing; inability to identify opportunities for the inclusion of renewable energy technology; and residents' inability to use or maintain sustainable technologies effectively for they can be too complicated.

Poor employment generation: Lack of employment opportunities can prevent residents from fulfilling necessary obligations for achieving sustainability in SHP and can also lead to poor motivation, deprivation, social exclusion and waste of human resources.

Poor safety measure: Poor disaster resistant, vandalism, crime and fear of crime due to poor safety measures can be barriers to achieving SSH communities where people can enjoy a high standard of living.

Poor social service provision: Inadequate provision of social facilities like: indoor and outdoor community sports facilities, limited public transport services; and poor access to employment opportunities, health-care facilities, education, shops and other social services can limit the achievement of sustainability in SHP.

Poor social cohesion: Non-provision of mixed housing types for accommodating people with different economic, social and cultural backgrounds can create stigmatisation, exclusion and deprivation.

Poor public awareness and lack of data: Out-dated or insufficient sustainability data and relevant information can constitute barriers to the implementation of SSH programmes.

5.3.2 Analysis of Economic Barriers

Table 5.5 details key economic barriers of SSHP. The Table shows that poor affordability (17.00%); poor legal and administrative framework (17.00%); inadequate supply (15.40%); inadequate funding (14.00%); and poor governance (12.10%) are the five highest ranking economic barriers of SSHP. The outcome is not surprising given that affordability has become a global issue and multi-dimensional in nature. According to Karuppanan and Sivam (2009) many studies have recognised different factors linked with poor housing affordability such as, high interest rates; low income levels; high construction costs; increasing land prices and difficulties in accessing it; including increasing rents and purchase prices. The National Housing and Planning Advice Unit - NHPAU (2008 as cited in Forster-Kraus et al., 2009) argues that one of the end results of the affordability problem is that first time buyer households will have higher housing cost burdens, which can make them remain longer at home with their parents prior to starting their first household on their own. A higher demand compared with the supply can be regarded as a major reason for affordability problems, particularly for low-income earners in some parts of the UK like South Manchester, North East Cheshire, Kirklees District Council area, and Essex (Office of the Deputy Prime Minister, 2003; Kirklees District Council, 2008; Uttlesford District Council, 2008).

Inadequate provision is generally regarded as a global phenomenon which has greatly affected the supply of SSH in many countries. The scenario observed all over Europe is that the level of supply remains less than the number of required homes (Office of the Deputy prime Minister, 2003 as cited in Forster-Kraus et al., 2009). The study by Wiesel et al. (2012) has also shown that there is a wide gap between the affordable housing demand by moderate and low income

households in Australia and supply. The scenario is multi-dimensional in nature, the effect of which has helped to propagate the housing crisis. Arguably, the relatively low provision increases housing cost, which can also affects affordability and make not only lower income households to be in housing stress but also moderate and high-income earners (Forster-Kraus et al., 2009).

Table 5.5: Barriers of SSHP – Economic

Ranking	Key factors	Occurrences	%
1	Poor affordability	21	17.00
1	Poor legal and administrative framework	21	17.00
3	Inadequate supply	19	15.40
4	Inadequate funding	17	14.00
5	Poor governance	15	12.10
6	Poor development plan	6	5.00
7	Lack of Appropriate Technology	5	4.00
8	Poor infrastructural development	4	3.30
8	Lack of incentive to providers	4	3.30
8	Poor design	4	3.30
11	Poor maintenance	3	2.40
11	Lack of research work	3	2.40
13	Lack of whole-life value of buildings	1	0.80
Cumulative Total		123	100.0

Thus, the idea of high-priced housing as related to high housing costs can be constraining the entire household budget with a variety of different outcomes (Forster-Kraus et al., 2009). Although, a conspicuously barrier to accomplishing sustainability objectives in many cases is the cost, in others, knowledge had shown that sustainable choices were more costly (Williams and Dair, 2006). For example, findings by Williams and Dair (2006) reveal that most developers have argued that meeting legal requirements, as entrenched by the planning requirements, such as site investigations, determining users' needs through surveys, contributions to neighbourhood well-being, use of renewable materials and energy, affordable housing provision and land preparation are onerous tasks. Stakeholders such as developers, purchasers, tenants and end users may not have the power to enforce the required sustainable measure if the available legal system does not make them to be important requirements (Williams and Dair, 2006). In most

cases, vagueness of sustainability measures is another major issue making it difficult for inexperienced housing providers to develop affordable housing (Wiesel et al., 2012). The study by Cooper and Jones (2009) shows that not only is high cost of provision a major internal hurdle but lack of the required resources constitutes another significant barrier to achieving sustainability in the social housing sector. For example, a key issue for many social housing providers was the lack of adequate financial resources to implement a policy once it had been prepared (Guran, 2003).

Findings from the analysed documents also show that one of the most noteworthy issues to consider in achieving sustainability in social housing is poor governance associated with poor legal framework. Similar to what obtains in Minnesota, the study by Dolata (2011) shows that poor regulations can create barriers to sustainability approach in two ways, particularly where there is lack of proper enforcement: first, if the existing rules do not allow appropriate sustainable measures like in some schemes where balancing street space requirements for cars, bicyclists and pedestrians remain unresolved; and second, where rules and regulations encourage fewer sustainable options to cause lower standards. Clearly, another significant issue cited mostly for the failure of social housing development is a situation where various arms and sections of the government operate different housing policies and service delivery systems that are poorly coordinated and inefficiently delivered (Dodson and Smith, 2003). The scenario is an evidence of poor governance, which is capable of causing a barrier to the implementation of sustainable social housing if the necessary step is not taken to guide against it. The study by Abidin (2009) emphasised the need for government intervention in terms of playing a larger part in encouraging sustainable activities, through actions such as tough enforcement of regulation on such things like funding, affordable rental and cost of purchase, developing new policy, or providing motivations to developers who want to implement sustainability in their projects.

Overall, the issue with achieving sustainability in social housing can be seen as a paradox. In the UK, the Office of the Deputy Prime Minister (2003) details three challenges of sustainable housing as: first, an inconsistency between supply and demand, with some areas having low demand; second, high demand compared with supply causing affordability problem for many local households; and third, where some of the existing housing stocks suffer from poor condition and obsolescence. However, it has been observed that low cost sustainable housing policies, adequate and decent housing provision including sustainable techniques of construction have the potential for providing multiple benefits for protecting the environment, ensure well-being of residents and the wider population (UN-HABITAT, 2011).

5.3.3 Analysis of Environmental Barriers

Table 5.6 shows the key environmental barriers of SSHP. The outcome reveals that poor environmental protection (47.00%) and poor land use plan (20.00%) are the two most critical barriers to achieving sustainability in SHP. Others are waste of natural resources (13.00%); lack of alternative transport modes (6.00%); poor accessibility (6.00%); non-usage of renewable materials (4.00%); and use of poor quality materials (4.00%). The outcome with regard to the poor environmental protection is not surprising given that the issue has a long standing global implication such that it constituted a major aspect of the WCED's (1987) report - *Our Common Future*.

Table 5.6: Barriers of SSHP – Environmental

Ranking	Key factors	Occurrences	%
1	Poor Environmental Protection	24	47.00
2	Poor land use plan	10	20.00
3	Waste of natural resources	7	13.00
4	Lack of alternative transport modes	3	6.00
4	Poor accessibility	3	6.00
6	Non-usage of renewable materials	2	4.00
6	Use of poor quality materials	2	4.00
Cumulative Total		51	100.0

Arguably, the increasing rate of development in many countries can be a major cause of many environmental issues. Empirical studies have also shown that many countries have experienced some significant level of development in every sector of the economy, even since the end of World War II in 1945. For example, Harris (2000) argues that worldwide, most nations have made substantial developments both in GDP and in human development index (HDI) measures. A combination of such human development activities and rapid population growth has put a great pressure on the environment, causing impacts such as depletion of the natural resources like land, water and quality air, especially in urban areas (Larasati, 2006). The significant effect of the human development activities and the overall record of growth on the global scale is opened to two main criticisms: (i) there has been an uneven distribution of the benefits of the growth causing increasing income disparities for several years; and (ii) the negative impact of the development activities on the environment and the natural resources (Harris, 2000).

As argued by Khalfan (2002), human action can only be regarded as sustainable only if it can be done indefinitely without exhausting natural resources or degrading the natural environment.

Furthermore, Khalfan details that human activities can be environmentally sustainable if the followings can be achieved: (i) low resource consumption; (ii) use of renewable and recyclable materials without depletion of the resource base; (iii) use of renewable energy (solar or wind etc.); (iv) efficient use of natural resources; (v) reduction of waste generation and emissions to the environment; (vi) reduce greenhouse gases' emission; (vii) provision of alternative transport modes; (viii) reduce construction impact on human health and the environment; and (ix) ensure elimination of toxic substances.

Similarly, poor environmental protection has been identified as a key sustainability issue in some residential areas. For example, the potential risk of flooding in some residential areas; air pollution; high vehicular movement and congestion; and use of energy produced from fossil fuels instead of renewable sources can be a clear evidence of poor environmental protection (Oxford City Council, 2008). Degradation of natural resource and environmental pollution are harmful to residents and housing environment given that they can increase vulnerability and poor health system (Munasinghe and Shearer, 1995 as cited in Munasinghe, 2003).

Findings have also shown that achieving sustainability in social housing would require adequate land use plan for SHP; appropriate environmental protection strategies; improving environmental performance of structures; appropriate building design and layout; use of local and renewable materials including the provision of efficient alternative transport modes. Therefore, where all these factors are lacking as documented in this section, it may be difficult to achieve SSHP.

5.3.4 Analysis of Social Barriers

Table 5.7 shows barriers of SSHP from social perspective. The outcome indicates that poor public awareness and lack of data (27.60%); poor education and skill development (25.50%); poor social cohesion (10.20%); and poor social service provision (10.20%) are four barriers regarded as the most critical to achieving SSH agenda.

Table 5.7: Barriers of SSHP – Social

Ranking	Key factors	Occurrences	%
1	Poor public awareness and lack of data	27	27.6
2	Poor education and skill development	25	25.5
3	Poor social cohesion	10	10.2
3	Poor social service provision	10	10.2
5	Poor Health and well-being	9	9.20
6	Lack of stakeholders' involvement	7	7.10
7	Poor safety measure	6	6.10

8	Poor employment generation	4	4.10
Cumulative Total		98	100

Lack of tenants' information on the use of sustainable technology, poor sustainability skills and poor employment opportunity can be some of the major barriers for achieving sustainability in social housing (UN, 2002; Parkin et al., 2003; Kates et al., 2005; Government of Ireland, 2009). According to Gurran (2003), the main weaknesses associated with sustainable plans can be related to outdated and inadequate data, coupled with a lack of resources or procedure necessary for the execution of the public awareness programme. Furthermore, the lack of awareness of the importance of achieving sustainability constitutes the reason for the inability of many government agencies to build strong relations with social housing providers, especially in data sharing and asset management planning information (Gurran, 2003). The study by Abidin (2009) shows that some people believed that sustainability is an academic pursuit, which is often used in the intellectual circle, therefore it is seldom known outside leading to non-practice. Similarly, lack of awareness can be one of the major reasons for the poor perception of the sustainable construction and the use of sustainable energy products on one hand and poor public understanding of the potential benefits of a sustainability way of life on the other hand (Abidin, 2009).

Higham and Fortune (2011) argue that it is becoming increasingly accepted that improving the sustainable performance of existing social housing is a key challenge facing many private and public housing organisations. For example, the Oxford City Council (2008) details some key sustainability issues in Oxford areas of the UK as:

- Inadequate provision of health care and poor access to health delivery;
- Poverty, social exclusion and deprivation;
- Increasing crime rates and fear of crime in some areas;
- Poor employment generation and long-term unemployed across the council area.

The existence of the aforementioned sustainability factors requires that issues of safety, health care, unemployment and poor social cohesion must be addressed in order to achieve sustainability in social housing. Non-provision of mixed housing types has been regarded as a major cause of poor social cohesion on one hand and stigmatisation of social housing estates on the other hand (Log and Hutchins, 2003). Although it may be difficult to quantify community cohesiveness, but it can be regarded as an important contributor to the health of a community given that sustainable housing can help to promote interaction and good neighbourliness among residents within a social housing environment (Log and Hutchins, 2003; Hanna and Webber, 2005).

Therefore, achieving sustainability in SHP may require the provision of efficient institutions and adequate infrastructure for addressing management risks, and poor skills acquisition (Sage, 1998 as cited in Shelbourn et al., 2006).

5.4 RECOMMENDATIONS FOR IMPROVING SSHP

Considering the aforementioned barriers to achieving sustainability in SSHP, this section goes further to discuss the key economic, environmental and social factors for addressing the issues and improving sustainability in social housing.

5.4.1 Interpretations of the Economic, Environmental and Social Recommendations for Implementing Sustainable Social Housing Provision (SSHP)

Economic Recommendations

Promote research works: Research works can help the public and non-profit private social housing providers to monitor, create awareness and up-date the knowledge about sustainability requirements for meeting housing needs.

Ensure the use of appropriate technology: The use of an appropriate technology can assist in reducing pollution and greenhouse gas emissions; provide a better environmental management services; improve access to basic energy needs such as lighting or hot water supply; reduce fuel poverty; increase housing quality; reduce maintenance costs; and improve health and safety of the construction workers and residents.

Constitutes an urban development strategy: Urban development strategy incorporating: compact design; pedestrian friendly design; eco-efficient houses; sustainable transport that reduces car dependency; equal access to housing, education and training, jobs, health, shopping, open space, leisure and recreational facilities and other community services can assist in achieving sustainability in SHP.

Ensure resources are efficiently used: Efficient use of resources through the provision of a well-integrated mix of decent homes of different types, sufficient size, scale and density, including affordable costs for a range of household sizes, ages and incomes can assist in the implementation of SSH for meeting housing needs.

Development for mixed-uses: This refers to the provision of integrated and mixed- use tenure and different affordable social housing types, including transport system with a variety of modal links to services, work, leisure and homes; childcare centres, community workshops, schools, and employment opportunities.

Effective management and maintenance strategies: The use of modern technologies, quality materials and timely response to repairs can assist in addressing supply and demand issues,

including meeting changing social requirements and expectations of residents, prolong the life span of the building, reduce building life-cycle costs and increase users' satisfaction.

Adequate provision of fund to the sector: Adequate funding of the social housing sector is essential for achieving adequate supply, reducing letting and owning costs, promoting affordability and for meeting housing needs.

Ensure effective legal and institutional frameworks: Efficient legal framework can help in ensuring: adequate provision; efficient use of natural and physical resources; affordable price; and standard provision with necessary infrastructure, services and facilities on one hand and efficient institutional framework can assist in promoting the use of trained, skilled and experienced workforce for monitoring and enforcing the compliance of stakeholders with sustainability requirements on the other.

Ensure affordable housing costs to every income earner: This requires that providers must make SSH affordable and accessible to every household through subsidies and other necessary assistance for meeting housing needs.

Good governance for ensuring that appropriate strategies are taken: This is a form of participatory systems of governance with political will and policies that promote adequate and affordable SHP through intergovernmental and public-private collaborations for adequate funding, counteracting negative perceptions of social and affordable housing projects, giving priority to the vulnerable households, promoting gender equality, enhancing environmental quality, and creating skills and employment opportunities and promoting the well-being of residents.

Undertake appropriate planning and design: This refers to building planning and designs with consideration for the local climatic condition, that accommodate appropriate density, e.g. low, medium and high; incorporate community facilities like public transport, shops, bus stops, neighbourhood schools and pedestrian walkways; promote the use of renewable energy technologies and reduce greenhouse gas emissions; and minimise building maintenance and life-cycle costs.

Ensure adequate provision to meet housing needs of everyone: The public and private non-profit social housing providers are expected to 'meet the housing needs of the present without compromising the ability of future generations to meet their own needs' through delivery strategies that promote adequate and affordable housing provision for all without discrimination, stigmatisation and exclusion on the basis of sex, economic, social and cultural backgrounds.

Ensure the provision of incentive to providers: The government can encourage private participation in the provision of SSH through incentives like: official recognition, training opportunities, tax relief, government guaranteed loans, access to public land and subsidies.

Environmental Recommendations

Ensure the use of appropriate materials for reducing life-costs: Social housing developers must adopt the use of appropriate building materials in terms of cost, quality and environmental friendly, which can help to reduce environmental degradation and achieve resource efficiency, durability, affordability, minimal maintenance and building life-cycle costs, including occupants' well-being.

Promote the use of alternative transport modes: Provision of alternative transport modes e.g. public buses, train services, cycling and pedestrian walkways can help to improve travel choice and proximity to schools, shopping and places of work; and reduce the need for travelling by private cars.

Ensure the polluter pays for the act: The government must promote sustainable environment through the polluter and user-pays principle like the introduction of levies on unsustainable energy use and indiscriminate waste disposal.

Use appropriate land development plan: Appropriate development plan is for ensuring availability and allocation of adequate land in suitable locations for the provision of SSH for meeting housing needs.

Ensure environmental protection: An overarching aim of achieving sustainability in SHP is for limiting global environmental threats such as: climate change and environmental degradation; protect human health and safety from hazards such as poor air quality and toxic chemicals; and to protect things which people need or value, such as wildlife, landscapes and historic buildings and creating opportunities for walking and cycling, reducing noise pollution and dependence on cars, including measures for the reduction, re-use, recycling and recovery of waste.

Ensure good accessibility: Meeting housing needs requires having an improved access to: land, adequate shelter and basic services like education and training, jobs, health, shopping, open space, leisure and recreational facilities and other community services.

Social Recommendations

Encourage stakeholders' participation and opportunity of a choice: Stakeholders, particularly the end-users must effectively participate in the design, development and allocation processes of SSH with the opportunity of a choice so as to enable them have a say on what may affect their lives.

Creation of the sense of a place to live: The concept of SSH seeks to create residential environment where people should want to live and work, now and in the future in terms of security, availability of social services, community identity and belonging with opportunities for cultural, leisure, sport and other activities.

Ensure security of life and property: The concept of SSH seeks to create residential environment, which is safe and where crime, disorder and fear of crime are reduced, including free of diseases and threats to residents' lives and property.

Promote job opportunities: Sustainable social housing can help to provide skills and employment opportunities for residents so as to be able to meet both personal and residential obligations.

Develop public awareness strategies: This refers to the awareness of the importance of achieving sustainability in SHP through education, sensitisation of members of the public and end-users, and provision of tenant awareness booklets, which can assist in reducing opposition to sustainable building practices, promoting the use of alternative technologies in housing renewal or new build developments and providing necessary information about the direct benefits of SSH.

Ensure there is social cohesion: Achieving sustainability in SHP seeks to promote the provision of mixed-tenure and mixed-income housing for people of different religious, cultural and economic backgrounds.

Promote skills acquisition and education: Providing residents with opportunities for skills acquisition and education can help to enhance human capital development, standard of living, strengthen social values and address skills shortages in the area of SSHP.

Promote adequate provision of social services: The desire for meeting housing needs through SSH can help to ensure residents' access to job opportunities, health-care services, education, transport and sustainable homes with pedestrian friendly walkways, sports and markets facilities.

5.4.2 Economic Context - Analysis

Table 5.8 shows the key economic factors recommended for improving SSHP. The outcome shows that the first two major factors for improving SSHP are: ensuring adequate provision for meeting housing needs (24.10%) and appropriate planning and design (14.20%). This is an indication that through SSHP housing needs can be met. For example, meeting housing need is rated 3rd as a factor of the economic constituent (see Table 5.2) and the inadequate supply of SSH has also been shown as the third most economic barrier (see Table 5.5).

Table 5.8: Recommendations for Improving SSHP – Economic

Ranking	Key factors	Occurrences	%
1	Ensure adequate provision to meet housing needs of everyone	73	24.10
2	Undertake appropriate planning and design	43	14.20
3	Good governance for ensuring that appropriate strategies are taken	30	9.90
3	Ensure affordable housing costs to every income earner	30	9.90
5	Ensure effective legal and institutional framework	27	8.90
6	Adequate provision of fund to the sector	21	6.90
7	Effective management and maintenance strategies	19	6.30
8	Development for mixed-uses	18	5.90
9	Ensure resources are efficiently used	15	5.00
10	Constitutes an urban development strategy	12	4.00
11	Ensure the use of appropriate technology	7	2.30
12	Promote research works	5	1.60
13	Ensure the provision of incentive to providers	3	1.00
Cumulative Total		303	100

Governments should, therefore, ensure the effectiveness of non-profit housing associations, with a clear mandate to provide for vulnerable households who cannot afford to buy or rent decent housing (Priemus and Dieleman, 2002; Tan, 2011). According to ODPM, UK (2006 as cited in Wiesel et al., 2012), SD objectives encourage the provision of housing that meets the various needs of the present and future users; protected environments; provided with community facilities; social inclusive and equity. According to Khalfan (2002), SD means ability to meet human needs through efficient social, economic and technological development, including environmental protection. Generally, sustainable housing is the housing that meets different needs and provided in the appropriate locations (Simpson and MacDonald, 2003; Power, 2004). Similarly, sustainable housing provision promotes efficient community infrastructure, appropriate planning and design, community participation, adequate land and access to development funds (Karuppanan and Sivam, 2009). In addition, efficient land use planning and design, including adequate provision of infrastructural facilities such as neighbourhood shops; efficient health services, education, and bus stops can assist in promoting a sense of community living and the well-being of residents (Power, 2004).

The UN (2002) observes that SD can promote efficient use of science and technology, including a network of research activities among research institutions, universities, governments, non-governmental organisations, as well as between and among developing and developed countries. Promoting research works through educational programmes can widely spread the required knowledge on sustainable building practices (UN-HABITAT, 2011). Accordingly, SSHP can benefit from research works and be regarded as an important strategy for promoting urban development in terms of physical, economic and environmental improvement. The use of

appropriate technology and research works can be considered as significant for achieving sustainability in social housing.

Similarly, a well-designed social housing structure with an overall mix of land uses can contribute positively toward meeting housing needs and creates a safe environment for occupiers (London Borough of Bexley, 2010). It is equally important for achieving sustainability through the provision of the appropriate building regulations that can promote the provision of low cost sustainable housing and the use of local environmental friendly materials (UN-HABITAT, 2011). Quite a number of scholars have shown that good governance is central to the achievement of sustainable housing development. Most importantly, good governance is essential for the provision of SSH, considering its main objective of meeting the housing needs of low-income households. According to Jiboye (2011), good governance gives priority to the provision of adequate housing, reduces poverty, promotes gender equality, protects the environment, and creates efficient job opportunities.

5.4.3 Environmental Context - Analysis

Table 5.9 shows key environmental recommendations for improving SSHP with the need to ensure environmental protection having the highest ranking (55.70%). This helps to show that environmental issues can be among the factors majorly stunting the achievement of sustainability in social housing as shown in this research. According to Tan (2011), important antidotes for addressing environmental issues is for social housing developers to give consideration to the use of local and recyclable materials; supply energy from renewable sources like solar or wind; provide good environmental qualities within and around housing structures, such as green space provision; alternative transport modes; and proximity to parks. Environmental issues are of international concern, which every nation and group of nations are seeking to address with vigour. For example, the objectives of The 'European Strategic Environmental Assessment Directive' (2001/142/EC) are to ensure environmental protection and encourage development plans and programmes that give adequate consideration to the limitation of the environment in order to promote SD (Chorley, Preston and South Ribble Core Strategy, Sustainability Appraisal Scoping Report, 2006). According to the Department of Trade and Industry, UK (2006), achieving SD requires that the provision of housing should minimise adverse impacts on the environment, during and after construction activities.

The result further shows that good accessibility (18.80%); use of the appropriate development plan (11.30%); and ensuring that the polluter pays for the act (6.60%) are three other critical factors for achieving sustainability in social housing. A good location is regarded as an important factor for achieving sustainability in housing provision. For example, if houses are provided near adequate and efficient transport facilities, it cannot only promote the use of the

public transport system instead of private cars, but can also reduce transport expenses and living costs (Karuppannan and Sivam, 2009). Therefore, housing developers should provide good accessibility within and around the housing environment in order to improve proximity to basic services for residents (UN, 2002; Tan, 2011). Similarly, sustainability can be achieved in low cost housing through appropriate regulations and efficient skills in order to reduce poverty and greenhouse gas emissions (UN-HABITAT, 2011).

Table 5.9: recommendations for Improving SSHP – Environmental

Ranking	Key factors	Occurrences	%
1	Ensure environmental protection	59	55.70
2	Ensure good accessibility	20	18.80
3	Use appropriate land development plan	12	11.30
4	Ensure the polluter pays for the act	7	6.60
5	Promote the use of alternative transport modes	4	3.80
5	Ensure the use of appropriate materials for reducing life-costs	4	3.80
Cumulative Total		106	100

Thus, the provision of sustainable low cost housing should meet residents' needs, improve the environment, and encourage the use of environmental friendly materials (UN-HABITAT, 2011). Guran (2003) argues that a related step that can be useful is to identify suitable sites for social housing development through the appropriate planning process. In addition, environmental pollution, waste of natural resources and social costs occur because those responsible are not those who bear the outcome (Power, 2004). Therefore, sustainability can be achieved through the application of a polluter pay strategy, which requires that those who pollute the environment should be responsible for their actions (Cooper and Jones, 2008).

5.4.4 Social Context - Analysis

Table 5.10 shows the key recommendations for improving SSHP from social perspective. The outcome shows that sustainability activities must encompass four main factors: adequate provision of social services (23.60%); the promotion of skills acquisition and education (21.80%); social cohesion (14.40%); and encourage stakeholders' participation with the opportunity for choosing accommodation that meets the need (14.40%).

This finding is not surprising given that the London Borough of Bexley (2010) details 6 main sustainability appraisal objectives as:

- Accessibility: To provide access to basic infrastructural facilities.
- Education and skills: To promote skills acquisition.
- Housing: To encourage an adequate provision of decent housing for every household.
- Human health: To promote the well-being of residents and reduce health inequalities.
- Prosperity and inclusiveness: To reduce poverty and social discrimination.
- The quality of surroundings: To improve the quality of the environment and promote the security of residents' lives and property.

Table 5.10: Recommendations for Improving SSHP – Social

Ranking	Key factors	Occurrences	%
1	Promote adequate provision of social services	51	23.60
2	Promote skills acquisition and education	47	21.80
3	Ensure there is social cohesion	31	14.40
3	Encourage stakeholders' participation and opportunity of a choice	31	14.40
5	Develop public awareness strategies	18	8.30
6	Promote job opportunities	17	7.90
7	Ensure security of life and property	12	5.60
8	Creation of the sense of a place to live	9	4.00
Cumulative Total		216	100

Similarly, Varady and Carroza (2000 as cited in Wiesel et al., 2012) argue that the provision of social services like community spaces can promote social interaction and a good neighbourliness. In addition, sustainable housing should provide residents with good access to transport facilities and community services. Greenhalgh and Moss (2009) describe a decent housing environment as a place where residents may want to live. Furthermore, a sustainable community promotes social cohesion by allowing a mixture of households with different income levels, tenures and occupations.

5.5 CONCEPTUAL MODEL OF SSHP

According to Environment and Heritage (2011), a conceptual model should present a clear understanding of the process of achieving a goal, including relevant components and how they

interact in a manner that can help to address every issue that militates against the success of development activities. Likewise, in this research, the conceptual model of SSHP represents the current understanding of what constitute SSH, barriers to the implementation and recommendations for the improvement and shows the interrelationships between the components in a systematic manner. The appropriate data gathered through content analysis, has made it quite possible to develop the conceptual model that takes account of key factors relating to SSHP. A model is ‘an example, pattern or prototype’ and tends to presents a rich description of a particular approach and a unique solution (Adair et al, 2003 as cited in Liyanage, 2006). A conceptual model serves as a link between a pre-determined goal and actualisation of the goal (Robinson, 2010).

Accordingly, the conceptual model represents a knowledge-based system that has real world correspondence, particularly about achieving sustainability in social housing in terms of constituents, barriers and recommendations for improving the provision so that it can meet housing needs. It tends to bridge the gap created by issues stunting the implementation of SSHP (problem domain) and what should be regarded as the real sustainable social housing. The conceptual model can help to know and understand some basic facts about SSHP. The development of the conceptual model, therefore, has been considered useful for addressing sustainability issues in SSHP.

Similar to findings by Gross (2003), the conceptual model seeks to convey important principles and the basic practicability of SSHP. It further strives to satisfy the following objectives among others:

- Improves stakeholders’ understanding of what it takes for achieving sustainability in social housing;
- Be a pointer to what may likely be roles of stakeholders in ensuring the provision of SSH;
- Paves the way, as a point of reference, for further research in the social housing sector;
- Provides a background for interpreting the study findings, explains observations and encourages a development that is practicable;
- Provides data for meeting housing needs so as to protect the constitutional rights of citizens to decent housing on an equal basis; and
- Provides avenues for measuring progress towards performance goals in SSH delivery strategies.

Conceptual models show ideas about components and important processes in a system; highlight the relationship between components and processes; and can identify gaps in the

knowledge (Manley et al., 2000 as cited in Gross, 2003). However, the goal of a conceptual model will only be achieved by a monitoring programme that is well designed and that considered the full range of natural and human-caused variations (Gross, 2003). Figure 5.1 shows steps adopted to develop the conceptual model of SSHP.

STEP 1. Formulate research objectives (see Section 1.2): Research objectives 3, 4 and 5 are formulated and considered important for developing a conceptual model of SSHP as part of the processes involved to develop a framework for implementing SSHP.

STEP 2. Identify the central focus of the conceptual model: Step 2 aimed at identifying the central focus of the conceptual model with respect to the key constituents, barriers and recommendations for improving SSHP based on the three pillars of SD – economic, environmental and social. This serves the purpose of properly identifying the critical areas to be considered as part of the conceptual model. It also aimed at comparing the key factors of constituents, barriers and recommendations from economic, environmental and social perspectives.

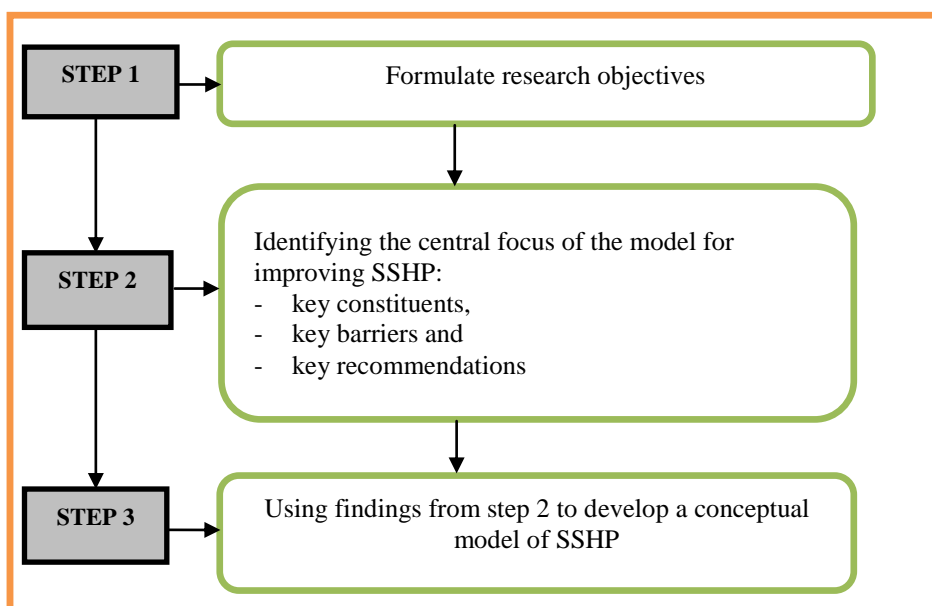


Figure 5.1: Steps Adopted to Develop the Conceptual Model of SSHP

For the purpose of identifying the central focus of this model, all the constituents, barriers and recommendations from economic, environmental and social perspectives can be grouped into three main areas. These can be regarded as criteria for (i) enabling; (ii) delivery; and (iii) implementation. This can be referred to as the ‘triangle of SSHP’ for achieving sustainability in the sector. Factors in the first group are referred to as those things that can facilitate the provision of SSH such as good governance; economic growth; adequate funding; effective legal and administrative frameworks; and efficient economic planning. Governments have major

roles to play in these areas. These factors and other ones identified in this research constitute the foundation for creating an enabling environment for promoting the achievement of sustainability in SHP. The second group of factors are those that are necessary for ensuring an adequate and quality standard of SSHP. These are factors like the use of appropriate technology; economic design; efficient use of resources; provision of infrastructural facilities and consideration for a whole-life cost. Factors in the third group encompass principles to be adopted in carrying out the distribution of sustainable social housing (the end product) to beneficiaries. Some of these factors are: affordability; meeting the housing needs of every household; equity, gender equality and efficient management and maintenance.

The three groups of factors necessary for achieving success in SSHP is similar to the three stages of project execution identified by Atkinson (1999 as cited in Chan and Chan, 2004): the first stage “*the delivery stage: the process: doing it right*”; the second is “*post-delivery stage: the system: getting it right*” and the last stage is “*the post-delivery stage: the benefits: getting them right*”. Factors in the aforementioned three groups are compared critically for the purpose of determining how they relate to one another on the basis of constituents, barriers and recommendations for addressing issues that may hinder achieving sustainability in social housing. These constitute the central focus of the conceptual model for addressing the identified critical areas. The critical areas are fully discussed in step 3.

STEP 3. Development of a conceptual model of SSHP: Findings from step 2 are used to develop a conceptual model of SSHP (Figure 5.2). The steps indicated in Figure 5.1 are followed based on findings from the document analysis. Brathwaite (2003) uses six criteria to determine which of the six models of cultural competence “*was the most appropriate to guide the development of an educational intervention for research study as follows: comprehensiveness of the content, logical congruence, conceptual clarity, a high level of abstraction, quantifiable utility and perspective of culture*”. Similarly, six criteria can be used to critique the conceptual model for its appropriateness.

For instance, the content is comprehensive and clearly categorised the findings into constituents, barriers and recommendations; each category is further sub-divided into economic, environmental and social; and the categories provided show a logical similarity within the social housing sector. The study by Elo and Kyngas (2007) presents the abstraction process in content analysis in three categories: main category, generic category and sub-category. The distinction between the groups can help to show an element of clarity with some reasonable level of certainty of an idea. This includes an impression of usefulness for classifying the SSH sector as a viable one for meeting the housing needs. The model shows an attribute of the culture of housing provision in any society with ‘sustainability’ as the main issue to address. Therefore, it

can be reasonable to consider the conceptual model as appropriate for meeting the objectives of this research.

5.6 SUMMARY

This chapter deals with key constituents, barriers to the implementation and recommendations for improving the implementation of SSHP. Each of the three categories is further sub-divided into economic, environmental and social factors. Although, the factors are important for achieving sustainability in SSHP, the degree of their importance within each sub-group was determined by ranking them based on frequencies of their occurrences in the selected documents. The findings show that the first three factors for achieving sustainability from each category are:

Constituents: (i) economic – affordability, economic growth and meeting the housing needs; (ii) environmental – environmental protection, efficient use of natural resources and use of renewable energy resources, and minimise energy for reducing environmental impact; (iii) social – welfare and quality life, skills acquisition and employment opportunities, including access to efficient social services.

Barriers: (i) economic – poor affordability, poor legal and administrative framework and inadequate supply; (ii) environmental - poor environmental protection, poor land use plan, and waste of natural resources; (iii) social - poor public awareness, poor education and skills development, and poor service provision.

Recommendations: (i) economic – ensure adequate provision to meet the housing needs of everyone, undertake an appropriate planning and design and good governance for ensuring appropriate strategies are taken; (ii) environmental – ensuring environmental protection, ensure good accessibility and use of appropriate development plan; (iii) social – promote adequate provision of social services, promote skills acquisition and education, and ensure social cohesion.

The overall findings are used to develop a conceptual model of SSHP as shown in Figure 5.2. This has also helped in preparing the ground for designing the questionnaire used for gathering data during the empirical survey of this research (Chapters 6, 7 and 8).

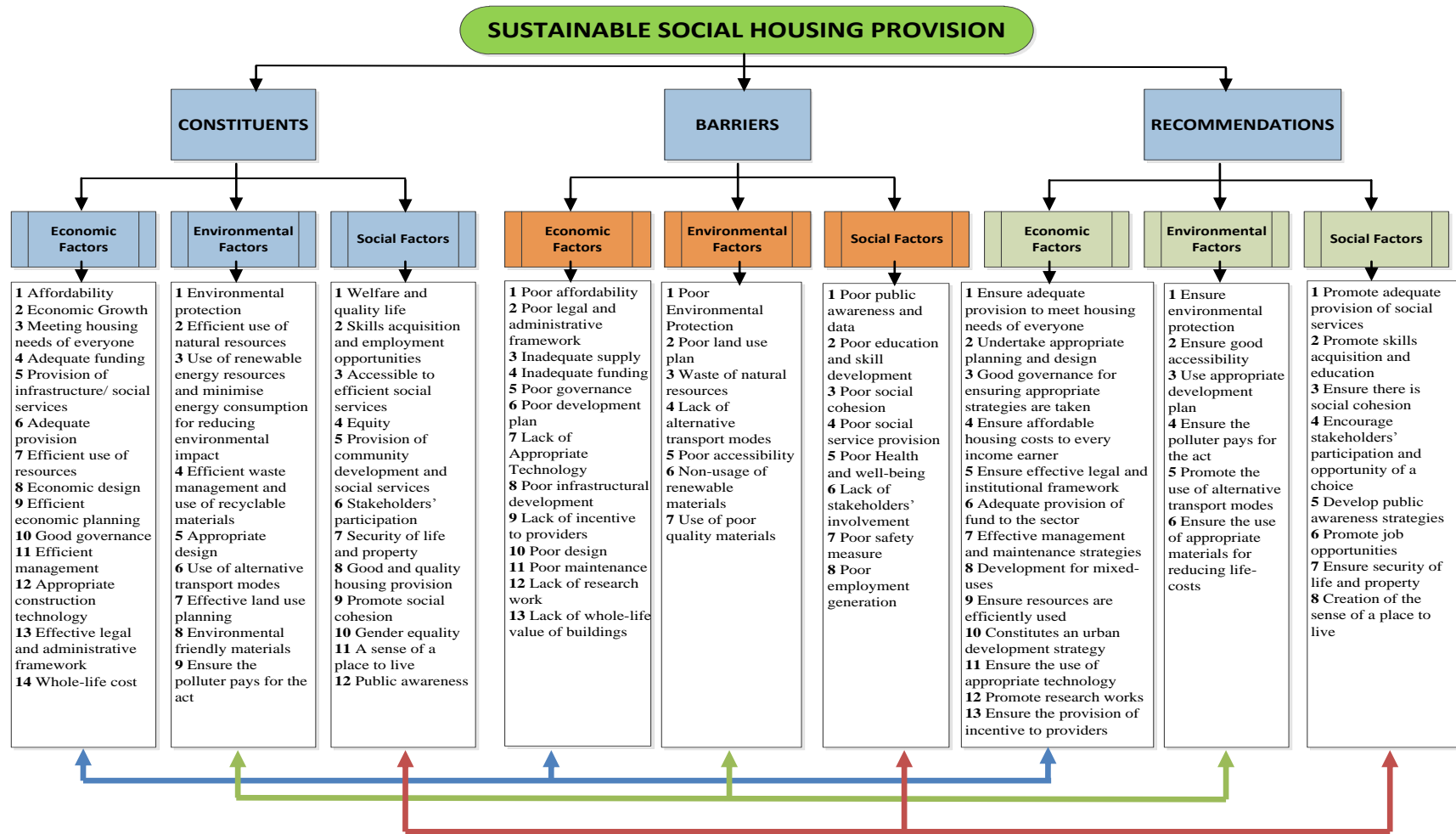


Figure 5.2: A Conceptual Model for SSHP

CHAPTER 6. CONSTITUENTS OF SUSTAINABLE SOCIAL HOUSING PROVISION (SSHP)

6.1 INTRODUCTION

Following the development of a conceptual model of SSHP in chapter 5, this chapter deals with the presentation and analyses of data obtained through the questionnaire survey. The overarching aim of this chapter is to present the key factors of the economic, environmental and social constituents of SSHP from the empirical survey perspective.

6.2 THE IMPORTANCE OF ‘SUSTAINABILITY/GREEN NEED’ TO SOCIAL HOUSING ORGANISATIONS

Table 6.1 indicates considerations of the importance of achieving sustainability/green need by social housing organisations. The result indicates that 71.1% of the organisations regarded sustainability/green need as important compared with 7.8% and 21.1% that viewed it as unimportant and moderately important respectively. The result is significant and can be regarded as a reflection of how SSHP is important for addressing sustainability issues among the professional social housing practitioners. Similar to what operates in North America, the result shows that sustainability/green need is becoming a standard goal for many social housing associations and housing authorities in the UK (Kozyra, 2007).

Table 6.1: Importance of Sustainability/Green Need for the SHP

Importance of Sustainability/Green Need	Public Sector (N = 59)		Private Sector (N = 121)		Total	
	No	%	No	%	No	%
Unimportant	4	6.8	10	8.3	14	7.8
Moderately Important	15	25.4	23	19.0	38	21.1
Important	40	67.8	88	72.7	128	71.1
Total	59	100	121	100	170	100

The general observation in the literature has been that housing development can bring some major negative impacts to the environment. It is possible that through the awareness of the importance of sustainability/green need as demonstrated by the outcome of this research, the negative impact of social housing development on the environment and the society can be mitigated. The wish of the UK government is that all housing developers, including social

housing associations and housing authorities should incorporate sustainability into their development and management activities based on economic, environmental and social criteria in order to provide adequate sustainable housing projects in the country (Essa et al., 2007). This is because a green housing can help to reduce environmental impact, pollution and energy consumption as well as providing buildings, which interact efficiently with the environment (Green Future, 2008). This outcome is similar to the general view that sustainable construction and operational practices can assist in addressing economic, environmental and social issues in the community (Green Building Council, 2010).

The result indicates that awareness of the importance of sustainability/green need is becoming wide-spread across the social housing sector. This is not surprising given the UK government directive for ensuring that every new housing provision should ‘meet zero-carbon standards from 2016’. The UK government introduced The Climate Change Act in 2008 to become the “*first country to pass legislation for reducing greenhouse gas emissions by 29% in 2017; 35% by 2022; 50% by 2027 and 80% by 2050*” (Kelly et al., 2012). This result can help in achieving the sustainability goal of the government through the social housing sector. The outcome cannot only help to improve the design and sustainability of housing, but can also reduce the impact of construction activities on the environment, including, waste generation (Homes and Communities Agency, 2012b).

The manner of response also indicates that stakeholders in the social housing sector are positive in making the sustainability desire of the UK government becoming a reality. The breakdown of the result shows that 72.7% of the private sector organisations regard sustainability/green need as important compared with 67.8% in the public sector.

Nonetheless, many social housing stocks in the UK still fall short of sustainable standard, particularly the older ones. Findings have shown that many of the social housing stocks in the UK are above 60 years and over 50% of them were constructed prior to 1965 (Cooper and Jones (2009). This is similar to what obtains in the “*US as 2010 Census records reveal that 71.2% of all housing units built prior to 1990 in the country are much more energy inefficient than today’s newly built units*” (Barker, 2012). In addition, Clark and Hay (2012) observed that achieving sustainability by lowering emissions and bills in older social housing could involve “*a significant cost, as illustrated by modelling improvements to tenement flats in Edinburgh and older housing in York areas of the UK*”. Therefore, the burden of requirements for attaining sustainability status can be a major reason for the current standard of many old social housing structures in the UK. Green Futures (2008) earlier argued that many Council Authorities in the UK lack the cash and capacity to actively champion the renewal of the old social housing to sustainable standard levels.

The sustainability status of the old buildings in the UK notwithstanding, the common understanding is that environmental issues relating to the urban growth, climate change, poverty reduction, affordable housing provision, access to quality social services, and pollution can be addressed through SD (UN-HABITAT, 2012b). In addition, SSHP has the potential for improving economic prosperity; environmental quality and social development. The outcome shows that the social housing organisations, both the public and private can play a noteworthy role in addressing recurring sustainability issues through the sector. Although, the result shows that sustainability/green need is important in SHP, the involvement of some of the social housing organisations in sustainability agenda might be limited by scarce resources (Green Futures, 2008; Clark and Hay, 2012). Adequate funding of sustainability programmes, therefore, can accelerate the progress of achieving sustainability in social housing.

6.3 THE IMPORTANCE OF ACHIEVING SUSTAINABILITY IN SHP

The analysis of the previous section sought to investigate the importance of sustainability/green need to respondents in both the public and private sectors of social housing organisations. This section, on the other hand, seeks to investigate how important is achieving sustainability in social housing. The results of data analyses in this section present respondents' opinions on the importance of 'achieving sustainability' in SHP from the characteristics of the social housing organisations in terms of their sectors and sizes.

6.3.1 Achieving Sustainability in SHP

Table 6.2 shows opinions of social housing organisations in the public and private sectors regarding the importance of achieving sustainability in social housing. The result indicates that the two sectors are not differing in their opinions regarding achieving sustainability in social housing. For example, 81.4% and 82.6% of the public and private sectors respectively agreed that achieving sustainability in social housing is important. The failure to regard achieving sustainability as important by few of the organisations cannot be a surprise given the burden of achieving sustainability in terms of the required funds, technology, skills and use of local friendly materials (Clark and Hay, 2012). The burden of requirements notwithstanding, CIH Northern Ireland (2010) regards sustainability as a benefit and not a cost to organisations that can embrace the concept.

The organisations' view can be for various reasons including limited financial resources and low level operations. It has been observed that organisations that can use their large stocks as collateral securities, to obtain mortgage loans for the purposes of improving their services, can easily align their operations towards achieving sustainability agenda (Hills, 2007). The benefit is in relation to the appropriate design; construction; materials; funding, quantity of stocks and

technical functioning of structures as they can have positive impact on the environment and residents' lives (AECB, 2006 as cited in Pickvance, 2009b). In addition, achieving sustainability in social housing development can enhance the quality, quantity, durability and cost effectiveness in the operation and maintenance of the entire structures (Stevenson and Williams, 2000).

It is generally believed that governmental support in terms of subsidies is crucial for achieving the delivery of SSH in any nation UN-HABITAT (2012b). Therefore, adequate government subsidies can help to address the existence of many unsatisfied social needs caused by increasing urbanisation problems, population growth, social exclusion, poverty and unemployment are reducing governments' attention to the sustainability issues (economic, environmental and social).

Table 6.2: Achieving Sustainability in SHP – Views of Public vs. Private Sector

Importance of Achieving Sustainability	Public Sector (N = 59)		Private Sector (N = 121)	
	No	%	No	%
Unimportant	7	11.8	11	9.1
Moderately Important	4	6.8	10	8.3
Important	48	81.4	100	82.6
Total	59	100.0	121	100.0

However, the UK government is playing a leading role in achieving sustainable development agenda (Dernbach, 2003; HM Government, 2012). For instance, the Homes and Communities Agency (HCA) and its predecessor, the housing Corporation had issued a myriad of best practice and policy guidance to housing associations, registered landlords and other stakeholders that are involved in the delivery of social housing in the UK (Higham and Fortune, 2012).

The manner of response demonstrates that a large number of practitioners in the private sector (social housing associations) and public sector (housing authorities) are aware of the importance of achieving sustainability in social housing provision.

6.3.2 Achieving Sustainability Based on Sizes of Social Housing Organisations

Table 6.3 shows respondents' opinions on the importance of achieving sustainability in social housing based on sizes of social housing organisations. The result indicates that 63.2%, 65.0%, and 76.9% of the small, medium and large organisations regard achieving sustainability in social housing as important respectively. Similarly, 25.0%, 23.3% and 20.5% of the small, medium and large organisations regard achieving sustainability in social housing as moderately important respectively. It is not surprising that some organisations based on size still regard

achieving sustainability in social housing provision as unimportant. Barker (2012) argues that sustainability is probably one of the most interesting, but least understood concepts.

However, the manner of response by the respondents suggests a higher level of understanding of the need for achieving sustainability in social housing irrespective of the size of an organisation. Considering the outcome, there is hardly any difference based on the size of organisations in the way the organisations perceived achieving sustainability in social housing. Arguably, it is possible that sustainability concept, especially in social housing can be fully appreciated sooner than expected. The result suggests that the sustainability agenda of the government can be achieved through the sector. The fact that all sizes of the organisations rate the factors high suggests that achieving sustainability in social housing is important. Therefore, the outcome can be useful for achieving the objectives of this research.

Table 6.3: Achieving Sustainability in SHP – According to the Size of Organisation

Sizes of Organisations	Unimportant		Moderately important		Important		Total	
	No	%	No	%	No	%	No	%
Small	8	11.8	17	25.0	43	63.2	68	100
Medium	7	11.7	14	23.3	39	65.0	60	100
Large	2	2.6	16	20.5	60	76.9	78	100
Total	17	8.3	47	22.8	142	68.9	206	100

6.4 CONSTITUENTS OF SSHP

Based on the three pillars of SD, data on the key factors of the economic, environmental and social constituents of SSHP are analysed in this section. The overarching aim is for seeking respondents' opinions in the public and private social housing organisations on the importance of SSHP. Based on findings, the key constituents of SSHP are ranked and also used the outcomes for determining the critical and most critical factors for achieving sustainability in SSHP. Table 6.4 shows how the key economic, environmental and social constituents of SSHP are generated through content analysis (Chapter 5) and are combined and refined based on findings from the pilot survey (Section 4.13.1). The 8-page questionnaire was reduced to 5 pages and the abstract questions are expanded and became meaningful without losing any of the vital information contained in the pilot questionnaire.

Table 6.4: Key Constituents of SSHP included in the Questionnaire Survey

Key Constituents of SSHP gathered through the Content Analysis		Combined Key Constituents of SSHP used for the Empirical Survey
Key Economic Constituents		
1	Affordability	Affordability of Social Housing by subsidising the costs of provision, purchase, rent and mortgage loan rates etc.
2	Good governance	Good Governance for promoting Economic Growth that allows for the provision of adequate Sustainable Social Housing that meets housing needs.
3	Economic Growth	
4	Adequate funding	
5	Adequate provision	Ensure Adequate funding to enable the public and private sectors Provide Adequate Sustainable Social Housing for meeting Housing Need of Every Household .
6	Meeting housing needs of everyone	
7	Economic design	Economic Design of mixed development and flexible structures that promotes Efficient Use of Resources and minimises future maintenance and expansion costs.
8	Efficient use of resources	
9	Appropriate construction technology	Appropriate Construction Technology to allow for a refurbishment, minimise waste, protect the environment, ensure the construction of sustainable social housing that meets housing needs.
10	Efficient management	Efficient Management of housing provision activities during construction and usage to minimise Whole-Life Cost and ensuring continuity and benefits to stakeholders.
11	Whole-life cost	
12	Efficient economic planning	Efficient Economic Planning to ensure the Provision of Infrastructure/ Social Services like roads, water, efficient energy, rail services, etc.
13	Provision of infrastructure/ social services	
14	Effective legal and administrative framework	Effective Legal and Administrative Frameworks for enhancing efficient implementation and control of social housing provision activities like procurements, award of contracts and distribution.
Key Environmental Constituents		
1	Environmental protection	Environmental Protection by adopting construction technique that Uses Renewable Energy Resources like wind or solar, Minimises Waste Generation and encourages the use of Recyclable Building Materials and ensuring that Polluter Pays for the Act .
2	Use of renewable energy resources and minimise energy consumption for reducing environmental impact	
3	Efficient waste management and use of recyclable materials	
4	Ensure the polluter pays for the act	
5	Appropriate design	Adopt Appropriate Design for simple and flexible construction including the use of building materials that meet local climatic and environmental conditions.
6	Effective land use planning	Effective Land Use Planning that promotes Efficient use of Natural Resources and incorporating the Use of Alternative Transport Modes like pedestrian, cycling and disabled routes including public bus services
7	Efficient use of natural resources	
8	Use of alternative transport modes	
9	Environmental friendly materials	Use of Environmental Friendly Materials that are durable and meet local housing needs without degrading the environment.
Key Social Constituents		
1	Equity	Promote Equity by ensuring equal distribution, social justice, Gender Equality , women empowerment and meet the needs of the
2	Gender equality	

		less-privileged households in the society.
3	Promote social cohesion	Social housing that promotes Social Cohesion through mixed development for residents with different economic, cultural and social backgrounds using common social facilities: sports, market, transport, health and education.
4	Stakeholders' participation	Stakeholders' Participation by involving them in the development process and encourage community participation in the decision making activities.
5	Skills acquisition and employment opportunities	Minimise poverty through social housing programme that engages community members in the construction activities and provide them with Skills Acquisition and Job Opportunities .
6	Accessible to efficient social services	Social housing that enjoys a good range of Social Services like public transport, health, education, security network, water and electricity
7	Welfare and quality life	Ensuring Welfare and Quality Life by providing health and recreational facilities within social housing environment.
8	Good and quality housing provision	Community Development, Good and Quality Housing Provision for meeting the needs of every household and creates the Sense of a Place to Live .
9	A sense of a place to live	
10	Provision of community development and social services	
11	Public awareness	Ensuring Public Awareness through social housing programme that provides avenues for educating residents on how to accept and live a sustainable lifestyle in their production activities and consumption culture.
12	Security of life and property	Ensuring Security of Lives and Property by creating a safe and secure housing environment for the residents and their property.

6.5 ECONOMIC CONSTITUENTS OF SSHP

This section presents respondents' opinions on the key economic constituents of SSHP. The objective is to present eight key economic constituents with a view to determining their degree of importance in terms of ranking for achieving sustainability in SHP.

6.5.1 The Key Economic Constituents of SSHP

Table 6.5 shows responses on the key economic constituents of SSHP. The result shows that affordability (91.30%); adequate funding and provision of social housing for meeting housing needs (89.85%); use of the appropriate construction technology (83.57%); economic design that promotes efficient use of resources and mixed development (82.61); and efficient economic planning to ensure the provision of infrastructure/social services (81.64%) are the first five critical economic constituents for achieving sustainability in social housing.

Table 6.5: Level of Agreement for Key Economic Constituents

Factors	Disagree		Neither Disagree/Agree		Agree		Rank
	No	%	No	%	No	%	
Affordability	3	1.45	15	7.25	189	91.30	1
Adequate Funding and Provision for meeting housing needs	3	1.45	18	8.70	186	89.85	2
Appropriate Construction Technology	-	-	34	16.43	173	83.57	3
Economic Design that promotes efficient use of Resources and Mixed Development	1	0.48	35	16.91	171	82.61	4
Efficient Economic Planning to ensure the Provision of Infrastructure/Social Services	3	1.45	35	16.91	169	81.64	5
Good Governance for promoting Economic Growth	6	2.90	39	18.84	162	78.26	6
Efficient Management for minimizing Whole-life Cost	1	0.48	48	23.19	158	76.33	7
Effective Legal and Administrative Frameworks	4	1.93	67	32.37	136	65.70	8
Cumulative Total	21	1.27	291	17.57	1344	81.16	

(N = 207)

The result indicates that all the eight key constituents are rated between 65.70% and above as important compared with 2.90% and 32.37% as the highest rating for disagree and neither disagree/agree respectively. The respondents' opinions suggest that much importance has been attached to achieving sustainability in social housing from economic perspective. This also shows that these key economic constituents can assist in achieving sustainability in SHP. Therefore, it can be concluded that the sustainability agenda of the government can be achieved through the social housing sector if the key economic constituents are duly considered in SHP

Table 6.6 shows the comparison of public and private sectors' opinions about the key constituents for achieving sustainability in social housing. Based on the cumulative totals of the responses, 79.2% and 81.7% of the public and private sector organisations respectively agreed that the key constituents can be used to achieve sustainability in social housing. The gap between the scores is relatively close, which indicates that the two sectors regarded all the key constituents as important. The outcome indicates that affordability, adequate funding and provision of social housing for meeting housing needs and use of the appropriate construction technology are three constituents considered as mostly important to both the public and private sectors.

The private ranks, adequate funding and provision of social housing for meeting housing needs as 1st compared with the 3rd position by the public. This suggests that the public may be having a lesser problem with funding than the private. This is not surprising given that the public makes use of tax payers' money and can obtain loans with relative ease for executing SSH projects

compared with the private sector organisations. In a situation where the private sector finds it difficult to access adequate funds for its operations, there can be limitations to its ability to pursue sustainability agenda.

The private sector considers the economic design as the 3rd important constituents, compared with the 5th position by the public. This is suggesting that minimum space utilisation and cost reduction through economic design is more important to the private sector compared with the public. The public organisations can be more comfortable with land acquisition and cost than the private sector. However, economic design is necessary for the two sectors in achieving sustainability in social housing and in order to minimise a waste of resources. Although efficient management for minimising a whole-life cost of buildings and legal and administrative frameworks are 7th and 8th by the two sectors, they can still be regarded as important factors for achieving sustainability in social housing. Overall, the topmost three economic critical constituents for achieving sustainability in social housing are affordability; adequate funding and provision; and appropriate construction technology.

Table 6.6: Level of Agreement for Key Economic Constituents – Public vs. Private Sector

Key Factors	Public Sector (N= 59)							Private Sector (N = 121)						
	Disagree		Neither Disagree/ Agree		Agree		Rank	Disagree		Neither Disagree/ Agree		Agree		Rank
	No	%	No	%	No	%		No	%	No	%	No	%	
Affordability	3	5.1	3	5.1	53	89.8	1	-	-	11	9.1	110	90.9	1
Adequate Funding and Provision for meeting housing needs	3	5.1	7	11.9	49	83.1	3	-	-	11	9.1	110	90.9	1
Appropriate Construction Technology	-	-	9	15.3	50	84.7	2	-	-	20	16.5	101	83.5	3
Economic Design that promotes efficient use of Resources and Mixed Development	1	1.7	11	18.6	47	79.7	5	-	-	20	16.5	101	83.5	3
Good Governance for promoting Economic Growth	2	3.4	12	20.3	45	76.3	6	3	2.5	19	15.7	99	81.8	5
Efficient Management for minimizing Whole-life Cost	-	-	16	27.1	43	72.9	7	-	-	28	23.1	93	76.9	7
Effective Legal and Administrative Frameworks	3	5.1	17	28.8	39	66.1	8	1	0.8	41	33.9	79	65.3	8
Efficient Economic Planning to ensure the Provision of Infrastructure/Social Services	3	5.1	8	13.6	48	81.4	4	-	-	23	19.0	98	81.0	6
Cumulative Total	15	3.2	83	17.6	374	79.2		4	0.4	173	17.9	791	81.7	

6.5.2 Means Ranking of Key Economic Constituents of SSHP based on Sectors, Sizes and Importance of Sustainability/Green Need

Table 6.7 shows means ranking of the opinions of social housing organisations in the public and private sectors regarding key economic constituent of SSHP. The outcome indicates that all the factors have overall means value above 4.00 except effective legal and administrative frameworks that has an overall mean value of 3.73. The outcome notwithstanding, the general believe is that for achieving sustainability in the housing sector, there is a need to provide an efficient policy and legal framework for ensuring standard construction of housing, provision of infrastructure, adequate housing funding and adequate provision (Choguill, 2007; Sivam et al., 2002 as cited in Karuppanan and Sivam, 2009).

The overall means value for all the constituents are relatively high, which shows that they are considered important for achieving sustainability in social housing. The ANOVA analysis indicates that opinions of the public and private sectors did not differ on six of the constituents at the 5% significant level except economic design for promoting efficient use of resources and mixed development (f-stat 4.134, p=0.044); and adequate funding and provision for meeting housing needs (f-stat 4.540, p=0.034). Despite this outcome, SSH that will meet housing needs and promote economic efficiency is only possible when enough money is spent on buildings and services like energy, transportation, etc. (Neuchâtel, 2005).

The government should also promote the development of sustainable and accessible funding streams and methods for the provision of SSH (Du Plessis, 2007). Similarly, sustainable design is the careful planning process which determines exactly what will be provided at moderate cost (Dolata, 2011). Evidently, sustainable design can significantly reduce adverse construction and human impacts on the natural environment on one hand and improve the quality of life and economic well-being of residents on the other hand (Hanna and Webber, 2005). Abidin and Jaapar (2008) in their study observe that economically designed social housing can adequately meet people's social needs for shelter, changes their lifestyle, improves their standard of living and further modernised the community. Barker (2012) also argues that economic design can be used to regulate sizes of buildings because larger buildings would generally consume more electricity for heating, cooling, and lighting. Barker (2012) further observes that appropriateness of design in terms of economic design can help to determine the amount of lighting, heating, and cooling a building will require.

Generally, the trend of the overall ranking is similar to that of the private sector, but slightly different on the part of the public sector. In addition, both the public and the private sectors considered adequate funding and provision of social housing for meeting housing needs; affordability; efficient economic planning to ensure the provision of infrastructure/social

services; and the use of appropriate construction technology as the first four critical constituents.

Notwithstanding, the private sector unlike the public sector regards adequate funding and provision of social housing for meeting housing needs to be more important to affordability. This is suggesting that the public sector is more concerned about ensuring affordability of SSH than the private sector. It also suggests that the public can conveniently obtain loans at lower rates with some other relaxed terms for executing SSH projects compared with the private. Although private social housing associations are non-profit organisations, they are providing voluntary services unlike the public that has the constitutional role and social responsibility for meeting housing needs at affordable cost compared with the private sector.

One of the sustainability objectives is that social housing should be affordable for all people entering housing market, particularly low income renters and buyers (Institute of Sustainable Futures, 2003). Similarly, Emsley et al. (2008) argue that the overarching aim of affordable SHP is for meeting the housing needs of households whose incomes are not sufficient to allow them to access decent housing in the market system without a form of assistance. Generally, there are strong arguments in favour of adequate funding in terms of subsidies to developers, renters and buyers, which can help in achieving adequate provision of affordable social housing. This implies that it is not enough to develop housing, but the driving force must be the desire to meet the housing needs of the low-income earners through affordable schemes such as SSHP.

Table 6.7: Mean Ranking for the Key Economic Constituents – Public vs. Private Sector

Key Factors	Overall (N = 180)		Public Sector (N = 59)		Private Sector (N = 121)		f-stat	Sig.
	Mean	Rank	Mean	Rank	Mean	Rank		
Adequate Funding and Provision for meeting housing needs	4.43	1	4.24	2	4.52	1	4.540	0.034
Affordability	4.41	2	4.34	1	4.44	2	0.563	0.454
Efficient Economic Planning to ensure the Provision of Infrastructure/Social Services	4.22	3	4.14	3	4.26	3	0.755	0.386
Appropriate Construction Technology	4.11	4	4.03	4	4.14	4	0.814	0.368
Economic Design that promotes efficient use of Resources and Mixed Development	4.09	5	3.92	7	4.17	5	4.134	0.044
Good Governance for promoting Economic Growth	4.06	6	3.98	5	4.09	6	0.530	0.468
Efficient Management for minimising Whole-life Cost	4.02	7	3.97	6	4.05	7	0.398	0.529
Effective Legal and Administrative Frameworks	3.73	8	3.75	8	3.72	8	0.033	0.856

The public sector organisations rate good governance for promoting economic growth higher than private organisations. This cannot be a surprise given that the requirement should concern public housing organisations as agents of the government than the private sector organisations. According to Power (2004), success of all sustainable housing strategies will depend on effective and participative systems of governance and efficient public institutions. Overall, it can be concluded that the outcome can assist in achieving the sustainability agenda of the government. It can be regarded as a valuable guide to SSH practitioners for achieving sustainability in SHP.

Table 6.8 shows means ranking of the key economic constituents of SSHP based on sizes of social housing organisations. Generally, the outcome shows that all the constituents are rated differently based on sizes of the social housing organisations. Notwithstanding, all the constituents have mean value above 3.75. This suggests that they can be regarded as important for achieving sustainability in social housing from small, medium and large organisations' perspective. The result indicates that size of organisations gives no significant difference of opinion on five of the economic constituents at 0.05 significant level except affordability (f-stat 4.359, $p = .014$); efficient economic planning to ensure the provision of infrastructure/social services (f-stat 6.216, $p = .002$); and efficient management for minimising whole-life cost (f-stat 3.344, $p = .037$). This outcome, however, is not an indication that the three factors are not regarded as important by the three categories of social housing organisations.

For example, the government must ensure the provision of “*affordable housing that: limits the cost of housing because households should not pay more than 30% of their household income; is appropriate for the needs of a range of low to moderate income households; and allows them to meet their other essential basic living costs*” (Karuppannan and Sivam, 2009). On the other hand, efficient economic planning helps to enhance economic and social satisfaction in housing and reduces disparities in its provision and distribution (Chorley, Preston and South Ribble Core Strategy – Sustainability Appraisal Scoping Report, 2006). In addition, SD requires efficient economic planning for ensuring that natural resources are used more efficiently and for reducing the strain on the environment and natural resources (Neuchâtel, 2005). Efficient economic planning also promotes the provision of infrastructure like urban transport, development of industrial zones, and rehabilitation of industrial brown-field sites for achieving sustainability in housing development (Council of Europe Development Bank, 2010).

Irrespective of size, some organisations can be indifferent to efficient economic planning and effective legal and administrative frameworks, especially the private sector. These two economic constituents are the government tools used to moderate SHP. However, from sizes of

the organisations, it is reasonable from the result to conclude that the key economic constituents are important for achieving sustainability in SHP.

Table 6.9 shows means ranking of the key economic constituents of SSHP from the perspective of the importance of sustainability/green need. Similar to the overall mean value ranking, all the constituents have been ranked as important based on the importance of sustainability/green need to the social housing organisations. The ANOVA results show that all the constituents are significant at 0.05 significant level with a mean value for each above 3.75. Woodcraft et al. (2011) observe that achieving SSH requires adequate funding and provision, affordable, and appropriate planning for incorporating basic amenities. It also requires the provision of a robust social infrastructure, and the use of the appropriate construction technology (Woodcraft et al., 2011). Generally, the analyses have shown that the key constituents are important and can assist in achieving the sustainability/green need agenda of the government. Therefore, it is possible that these key economic constituents can assist in achieving objectives of meeting housing need.

Table 6.8: Ranking of Key Economic Constituents – According to the Size of Organisation

Key Factors	Overall N=206		Small Size(N=68)		Medium Size(N=60)		Large Size(N=78)		f-stat	Sig.
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank		
Adequate Funding and Provision for meeting housing needs	4.45	1	4.38	2	4.62	2	4.38	1	1.767	.173
Affordability	4.42	2	4.35	3	4.67	1	4.28	2	4.359	.014
Efficient Economic Planning to ensure the Provision of Infrastructure/Social Services	4.23	3	4.50	1	3.97	5	4.21	3	6.216	.002
Appropriate Construction Technology	4.11	4	4.26	4	4.03	3	4.03	5	2.273	.106
Economic Design that promotes efficient use of Resources and Mixed Development	4.09	5	4.22	5	3.93	6	4.10	4	2.086	.127
Good Governance for promoting Economic Growth	4.03	6	4.18	7	3.88	7	4.03	5	1.532	.219
Efficient Management for minimising Whole-life Cost	4.02	7	4.21	5	4.03	3	3.85	7	3.344	.037
Effective Legal and Administrative Frameworks	3.76	8	3.87	8	3.77	8	3.67	8	0.858	.426

Table 6.9: Ranking of Key Economic Constituents – According to the Importance of Sustainability/Green Need

Factors	Overall (N=206)		Unimportant (N= 17)	Moderately Important(N=47)	Important (N=142)		f-stat	Sig.
	Mean	Rank	Mean	Mean	Mean	Rank		
Adequate Funding and Provision for meeting housing needs	4.45	1	4.41	4.26	4.52	1	1.934	.147
Affordability	4.42	2	4.35	4.26	4.48	2	1.435	.240
Efficient Economic Planning to ensure the Provision of Infrastructure/Social Services	4.23	3	4.12	4.32	4.22	3	0.389	.679
Appropriate Construction Technology	4.11	4	4.12	3.96	4.15	4	1.225	.296
Economic Design that promotes efficient use of Resources and Mixed Development	4.09	5	4.18	3.94	4.13	5	1.182	.309
Good Governance for promoting Economic Growth	4.03	6	3.76	3.83	4.13	5	2.596	.077
Efficient Management for minimising Whole-life Cost	4.02	7	4.24	4.04	3.99	7	0.675	.510
Effective Legal and Administrative Frameworks	3.76	8	3.65	3.77	3.77	8	0.144	.866

6.6 ENVIRONMENTAL CONSTITUENTS OF SSHP

This section deals with the environmental constituents of SSHP. The overarching aim is to seek respondents' opinions about the validity of the key environmental factors and then use the outcome for determining their degree of importance in terms of ranking.

6.6.1 The Key Environmental Constituents of SSHP

Table 6.10 shows respondents' opinions on the key environmental constituents of SSHP. The result shows that respondents have equal level of agreement on three of the constituents - environmental protection by using renewable energy resources, minimise waste generation, and using recyclable materials; use of environmental friendly materials; and appropriate design with 83.58% for each. The third constituent - effective land use planning that promotes efficient use of natural resources and use of alternative transport modes has a frequency of 66.67%. Based on cumulative totals, the result indicates that 79.3% of the respondents agree that the environmental constituents are important for achieving SSH compared with 6.8% and 13.9 % that disagreed and neither disagreed nor agreed respectively. The high level of respondents' agreement suggests that these environmental constituents can assist in achieving sustainability in social housing and can also assist in achieving the sustainability agenda of the government.

Table 6.10: Level of Agreement for Key Environmental Constituents

Factors	Disagree		Neither Disagree/Agree		Agree		Rank
	No	%	No	%	No	%	
Environmental Protection by using Renewable Energy Resources, Minimise Waste Generation, using Recyclable Materials and ensuring Polluter pays for the Act	6	2.90	28	13.52	173	83.58	1
Environmental Friendly Materials	8	3.86	26	12.56	173	83.58	1
Appropriate Design	7	3.38	27	13.04	173	83.58	1
Effective Land Use Planning that promotes Efficient use of Natural Resources and Use of Alternative Transport Modes	35	16.9	34	16.43	138	66.67	4
Cumulative Total	56	6.8	115	13.9	657	79.3	

(N = 207)

Table 6.11 shows the public and private social housing organisations' opinions on the key environmental constituents of SSHP. The result indicates that the two sectors of the social housing organisations regard all the four environmental constituents as important for achieving

sustainability in social housing. For instance, the public sector rates each of the constituents above 74.5% and above 66% by the private sector.

The results reveal that the private sector regards environmental protection by using renewable energy resources, minimise waste generation, and using recyclable materials (86.8%) and the use of environmental friendly materials (86.8%) as the first two most important constituents followed by appropriate design (84.3%). The public sector considers these constituents the other way round. Differences of opinions show how stakeholders may feel about the key environmental factors and how they should be considered for achieving SSHP. It is possible that the public views that environmental protection by using renewable energy resources, minimise waste generation, and using recyclable materials as well as the use of environmental friendly materials in the construction of SSH can be achieved through appropriate design. For example, Sivam and Karuppanan (2010) argue that the quality of a dwelling life in social housing “*is not simply concerned with having a roof over one’s head and a sufficient amount of living space, but also with social and psychological satisfaction*” derived from cost effective design. Appropriate design can help to reduce housing impact on the environment given that it will encourage the use of: environmental friendly materials, efficient use of natural resources, recyclable materials and avoid waste generation (Hanna and Webber, 2005).

Ebsen and Rambol (2000) submit that efficient energy and environmental management, and the use of recyclable materials and renewable resources in terms of appropriate consumption of energy, water, materials and appropriate land resource control can advance the course of minimising environmental pollution. They further argue that the use of environmental friendly materials in construction can reduce adverse impact on residents’ lives and the environment. This is the scientific consensus that stakeholders have to cut carbon emissions in the UK by 80% by 2050 (The Green Future, 2008). The result shows that these constituents have the potential to enhance the government’s commitment in maintaining a pollution free environment through sustainable construction, especially in social housing development. It is possible that the outcome can assist in achieving SSHP.

Table 6.11: Level of Agreement for Key Environmental Constituents – Public vs. Private Sector

Factors	Public Sector (N - 59)							Private Sector (N = 121)						
	Disagree		Neither disagree/agree		Agree		Rank	Disagree		Neither disagree/agree		Agree		Rank
	No	%	No	%	No	%		No	%	No	%	No	%	
Environmental Protection by using Renewable Energy Resources, Minimise Waste Generation, using Recyclable Materials and ensuring Polluter pays for the Act	3	5.1	9	15.2	47	79.7	2	2	1.6	14	11.6	105	86.8	1
Environmental Friendly Materials	5	8.5	7	11.8	47	79.7	2	3	2.5	13	10.7	105	86.8	1
Appropriate Design	3	5.1	6	10.2	50	84.7	1	3	2.5	16	13.2	102	84.3	3
Effective Land Use Planning that promotes Efficient use of Natural Resources and Use of Alternative Transport Modes	7	11.8	8	13.6	44	74.6	4	22	18.2	19	15.7	80	66.1	4
Cumulative Total	18	7.6	30	12.7	188	79.7		30	6.2	62	12.8	392	81.0	

The result further indicates that 79.7% of the public sector agrees that the key environmental constituents are important for achieving sustainability in social housing compared with 7.6% and 12.7% that disagree and neither disagree/agree respectively. On the other hand, 81% of the private sector agrees that the key environmental constituents are important for achieving sustainability in social housing compared with 6.2% and 12.8% that disagree and neither disagree/agree. Respondents' opinions show that the key constituents can assist in minimising the negative construction impact on the environment. The outcome supports the view that sustainability in social housing requires living in harmony with the natural environment and properly aligns socio-economic development with environmental protection (Adetunji et al., 2003). It is possible that the results can be used for protecting the environment, improving its carrying, regenerating and assimilating capacities.

The result shows that the two sectors rate effective land use planning that seeks to promote efficient use of natural resources and use of alternative transport modes as 4th compared with other constituents. Notwithstanding the low rating, the constituent can play a major role in achieving sustainability in social housing. Thomas (2001) refers to "*land use planning as the process by which land is allocated between competing and sometimes conflicting uses in order to secure the rational and orderly development of land in an environmentally sound manner for ensuring the creation of sustainable human settlements*". Accordingly, effective land use planning tends to make land available in the right proportion, location and cost for meeting housing needs. People's needs in terms of land use must be appropriately satisfied in terms of adequate housing provision; opportunities for recreation; provision of alternative transport modes like pedestrian walkways, bus stops, cycling and disabled tracts, including basic services like water, electricity, clean air and health care.

6.6.2 Means Ranking of Key Environmental Constituent of SSHP

Table 6.12 shows means ranking of the public and private sectors' opinions about the key constituents of the environmental constituents of SSHP. At 5% statistical significant level, the organisations' opinions differ on environmental protection by using renewable energy resources, minimise waste generation, and using recyclable materials (f-stat 6.446, p = .012) and use of environmental friendly materials (f-stat 10.900, p = .001) but there is no difference of opinions on appropriate design (f-stat 0.878, p = .350) and effective land use planning that promotes efficient use of natural resources and use of alternative transport modes (f-stat 1.391, p = .240). Notwithstanding the difference of opinions on the two constituents, the result still shows that each of them has a mean value above 4.10 and above 3.70 for the rest constituents. This suggests that all the key environmental factors can be regarded as important for achieving sustainability in social housing.

Table 6.13 shows social housing organisations' opinions on the basis of size, regarding the importance of the key environmental constituents for achieving sustainability in social housing. The outcome shows that large and medium organisations similarly rank three of the constituents different from small organisations and the three groups put effective land use planning that promotes efficient use of natural resources and use of alternative transport modes in the 4th position. This does not mean that the factor is least important. For example, appropriate land-use planning can help to reduce urban slum (European Commission, 2009); creates people oriented environmental development, in terms of security and accessibility (London Borough of Bexley, 2010); and promotes adequate provision of sustainable housing, including the related social and economic infrastructure: like different urban transport modes, water, energy, health, education and the development of industrial zones for employment opportunities (Council of European Development Bank, 2010).

Table 6.12: Mean Ranking for Key Environmental Constituents – Public vs. Private Sector

Factors	Overall (N = 180)		Public Sector (N = 59)		Private Sector (N =121)		f-stat	Sig
	Mean	Rank	Mean	Rank	Mean	Rank		
Environmental Protection by using Renewable Energy Resources, Minimise Waste Generation, using Recyclable Materials and ensuring Polluter pays for the Act	4.13	1	3.93	2	4.22	2	6.446	.012
Environmental Friendly Materials	4.12	2	3.83	4	4.26	1	10.900	.001
Appropriate Design	4.09	3	4.02	1	4.13	3	0.878	.350
Effective Land Use Planning that promotes Efficient use of Natural Resources and Use of Alternative Transport Modes	3.74	4	3.88	3	3.68	4	1.391	.240

Despite rating effective land use planning as fourth by every size of the organisations with an overall mean value of 3.71, there is no difference of opinions on the constituent at 5% significance level (f-stat 0.387, p = .680). This suggests that the factor is of equal importance to different social housing organisations. The factor is a public policy exercise for regulating the use of land in order to create a community that is viable from economic, environmental and social perspectives as well as promoting people's well-being. In addition, large and medium organisations regard environmental protection by using renewable energy resources, minimise waste generation, and using recyclable materials as top priority unlike small organisations that put it in the 2nd position. This outcome is not a surprise given that compliance with the factor may require a lot of resources – financial, technical and materials than what small organisations

with limited resources and scope of operations can be convenient with. It is possible that medium and large organisations can have resources in terms of large stocks and multiple branches for pursuing the sustainable environmental protection and energy agenda of the government than the small group. Therefore, the use of environmental friendly materials can relatively reduce housing impact on the environment to serve as an alternative option to the small organisations.

Although, the organisations differently rate the key constituents, their opinions did not differ at 5% significance level on each of the constituents except the use of environmental friendly materials. Nonetheless, irrespective of size, the organisations regard the use of environmental friendly materials as important. The constituent is rated high under each size of organisation with the mean value of 3.90 and 4.29 including the highest overall mean value (mean value = 4.11). The general believe is that the environmental friendly material otherwise known as eco-friendly material can promote green building that is not harmful to the environment. According to Watson (2013) for a building to be sustainable it must be constructed with locally sustainable materials in order to avoid any adverse effect on the environment.

Table 6.14 shows respondents' opinions on the key environmental constituents of SSHP based on the importance of the sustainability/green need. The table indicates that the organisations consider all the four constituents as important for achieving sustainability in social housing with the most two being environmental protection by using renewable energy resources, minimise waste generation, and using recyclable materials and use of environmental friendly materials. Similarly, The Northern Ireland Executive (2010) seeks to ensure a reliable, affordable and sustainable energy provision by reducing greenhouse gas emissions; encourage the use of renewable sources of energy and provide efficient energy guidelines for assisting every household, particularly the vulnerable group.

The outcome shows that each of the key constituents is rated high, the least mean value being 3.76 for the effective land use planning that promotes efficient use of natural resources and use of alternative transport modes. ANOVA tests show that the respondents' opinions are not differ on the constituents except effective land use planning that promotes efficient use of natural resources and use of alternative transport modes (overall mean value = 4.11) at 5% significance level (f-stat 4.164, $p = .017$). It is reasonable, therefore, to conclude that the key environmental constituents can assist in achieving the sustainability agenda of the government.

Table 6.13: Mean Ranking for Environmental Constituents – According to the Size of Organisation

Factors	Overall (N = 206)		Small (N = 68)		Medium (N = 60)		Large (N = 78)		f-stat	Sig.
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank		
Environmental Protection by using Renewable Energy Resources, Minimise Waste Generation, using Recyclable Materials and ensuring Polluter pays for the Act	4.11	1	4.24	2	4.08	1	4.03	1	1.525	.220
Environmental Friendly Materials	4.11	1	4.29	1	3.90	3	3.90	3	4.642	.011
Appropriate Design	4.08	3	4.21	3	4.07	2	3.99	2	1.490	.228
Effective Land Use Planning that promotes Efficient use of Natural Resources and Use of Alternative Transport Modes	3.71	4	3.81	4	3.65	4	3.68	4	0.387	.680

Table 6.14: Mean Ranking for Environmental Constituents – According to the Importance of Sustainability/Green Need

Factors	Overall (N = 206)		Unimportant (N = 17)	Moderately Important (N = 47)	Important (N = 142)		f-stat	Sig.
	Mean	Rank	Mean	Mean	Mean	Rank		
Environmental Protection by using Renewable Energy Resources, Minimise Waste Generation, using Recyclable Materials and ensuring Polluter pays for the Act	4.11	1	4.00	3.94	4.18	2	2.199	.114
Environmental Friendly Materials	4.11	1	4.18	3.81	4.20	1	4.164	.017
Appropriate Design	4.08	3	4.06	3.94	4.13	3	1.173	.311
Effective Land Use Planning that promotes Efficient use of Natural Resources and Use of Alternative Transport Modes	3.71	4	3.65	3.60	3.76	4	.424	.655

6.7 SOCIAL CONSTITUENTS OF SSHP

This section deals with data analyses on the key social constituents of SSHP. Data analyses are carried out in stages on respondents' opinions about the key constituents based on sectors, sizes and importance of sustainability/green need. The importance of the constituents is considered from the social perspective.

6.7.1 Key Social Constituents of SSHP

Table 6.15 presents respondents' opinions about the key social constituents of SSHP. Based on the cumulative totals of response, 77.0% of the social housing organisations agree that the key constituents are important for achieving sustainability in social housing compared with 6.0% and 17.0% that disagree and neither disagree nor agree respectively. The fact that all the nine constituents have above 60% rating suggests that they are important. Furthermore, the outcome shows that the five most critical constituents are: ensuring security of lives and property (80.7%); provision of a good range of social services like water, health, electricity, or public transport (78.1%); promotes social cohesion (73.8%); ensuring welfare and quality life (68.7%) and community development, and good and quality housing provision for creating the sense of a place to live (65.7%). The high rating of these constituents is not surprising given that social elements are deeply rooted in SSHP.

For instance, ensuring the security of lives and property of residents can assist in promoting social interaction and creating secured housing environment and makes the occupiers comfortable within the premises. A sustainable housing environment can also provide access: for social and cultural development, including quality education and public health facilities as well as preserving natural resources for meeting the present needs without undermining those of the future generations (Pattinaja and Putuhena, 2010). Some sustainable social indicators have been identified as access to adequate living space, development of community spirit, a sense of safety and creation of neighbourhoods where occupiers can be proud to live (Dave, 2011).

Surprisingly, equal distribution and gender equality is in the 9th position. Regardless of this rating, equal distribution and gender equality have been considered as important global issues in housing rights and development. The global debate on gender issues is concerned with the fact that housing is regarded as a key physical, economic and social asset for women as a place of rearing children, their main site of social network creation and income generation (Moser, 2006, 2009 as cited in UN-HABITAT, 2013). In addition, decent housing generally is considered as critical to identify, create a sense of belonging in the society, and can be a means of reducing poverty, especially if rights to it are protected by the law (Varley, 2007 as cited in UN-HABITAT, 2013).

Table 6.15: Level of Agreement for Key Social Constituents

Key Factors	Disagree		Neither Disagree/Agree		Agree		Rank
	No	%	No	%	No	%	
Ensuring Security of Lives and Property	6	2.6	13	5.6	188	80.7	1
Provides a good range of Social Services	5	2.1	19	8.2	182	78.1	2
Promotes Social Cohesion	12	5.2	23	9.9	172	73.8	3
Ensuring Welfare and Quality Life	18	7.7	29	12.4	160	68.7	4
Community Development, Good and Quality Housing Provision and creates the Sense of a Place to Live	16	6.9	38	16.3	153	65.7	5
Provides Skills Acquisition and Job Opportunities	12	5.2	46	19.7	149	63.9	6
Ensuring Public Awareness	18	7.7	43	18.5	146	62.7	7
Ensuring Stakeholders' Participation	13	5.6	52	22.3	142	60.9	8
Promotes Equity by ensuring equal distribution and Gender Equality	11	4.7	53	22.7	141	60.5	9
Cumulative Total	111	6.0	316	17.0	1433	77.0	

Table 6.16 shows opinions of the public and private social housing organisations regarding the importance of the key social constituents of SSHP. The outcome indicates that 76.6% of the public organisations and 76.2% of the private organisations agreed that the constituents are important for achieving sustainability in social housing. Comparing these levels of opinions with 8.3% and 15.1% of the public organisations and 4.9% and 18.9% of the private organisations that disagree and neither disagree nor agree show that a large majority of social housing practitioners have considered the social constituents as important for achieving sustainability in social housing. In addition, the least rated constituents by the public and the private are: ensuring public awareness (64.4%) and the provision of social housing that promotes equity by ensuring equal distribution and gender equality (63.3%) respectively. These outcomes suggest that irrespective of sectors, the respondents are positive in their opinions about the key social constituents.

Table 6.16: Level of Agreement for Key Social Constituents – Public vs. Private Sector

Factors	Public Sector (N= 59)							Private Sector (N = 121)						
	Disagree		Neither disagree/agree		Agree		Rank	Disagree		Neither disagree/agree		Agree		Rank
	No	%	No	%	No	%		No	%	No	%	No	%	
Ensuring Security of Lives and Property	3	5.1	5	8.5	51	86.4	2	2	1.7	7	5.8	112	92.6	1
Provides a good range of Social Services	4	6.8	3	5.1	52	88.1	1	1	0.8	15	12.5	104	86.7	2
Promotes Social Cohesion	5	8.5	3	5.1	51	86.4	2	5	4.1	18	14.9	98	81.0	3
Ensuring Welfare and Quality Life	4	6.8	12	20.3	43	72.9	6	10	8.3	17	14.0	94	77.7	4
Community Development, Good and Quality Housing Provision and creates the Sense of a Place to Live	5	8.5	10	16.9	44	74.6	5	10	8.3	22	18.2	89	73.6	5
Provides Skills Acquisition and Job Opportunities	4	6.8	12	20.3	43	72.9	6	6	5.0	29	24.0	86	71.1	7
Ensuring Public Awareness	8	13.6	13	22.0	38	64.4	9	9	7.4	24	19.8	88	72.7	6
Ensuring Stakeholders' Participation	7	11.9	13	22.0	39	66.1	8	6	5.0	34	28.1	81	66.9	8
Promotes Equity by ensuring equal distribution and Gender Equality	4	6.8	9	15.3	46	78.0	4	4	3.3	40	33.3	76	63.3	9
Cumulative Total	44	8.3	80	15.1	407	76.6		53	4.9	206	18.9	828	76.2	

The two sectors have considered strategies for ensuring security of lives and property; provision of a good range of social services; and promotion of social cohesion as the most three critical constituents for achieving sustainability in SHP from social perspective. However, the public sector rated provision of a good range of social services (88.1%) higher than security of lives and property (86.4%) and promotion of social cohesion (86.4%) compared with the private sector, which ranks the three constituents as 2nd (86.7%); 1st (92.6%); and 3rd (81.0%) respectively. This suggests that the public sector can be more responsible to the general public with the provision of social services than the private sector. Apart from the residents, the general public can benefit from the provision of social services, such as security, good road networks and electricity as visitors, workers or passers-by within the neighbourhood. On the contrary, private housing organisations can be regarded as having higher and direct responsibilities to their customers (residents) and housing structures in terms of security than to members of the public. Similarly, the public social housing organisations have rated equity by ensuring equal distribution and gender equality higher (4th position) compared with the 9th position by the private sector. Ensuring equal distribution may mean a loss of revenue to the private sector in terms of subsidising the cost of accommodation to low-income earners. In addition, the desire to ensure the satisfaction of the residents only could be the reason for putting welfare and quality of lives in the 4th position by the private sector compared with the 6th position given to the constituent by the public organisations.

It is not surprising that the two sectors both put community development, good and quality housing provision for creating the sense of a place to live in the 5th position. This shows that SD project like social housing tends to enhance the social, economic and environmental status of the housing environment and can provide other social opportunities such as skills acquisition, employment and healthy living on equal basis.

In addition, SSH delivery is embedded with other range of values by relating the general environment and the housing environment together, such as *“peace; justice, cooperation; diversity; equity; harmony; responsibility; trust; accountability; participation; mobility and shared power”* (Gurtov, 1991 as cited in Barnet, 2001). Therefore, it is possible that the result can promote social cohesion in terms of mixed development and social interaction among occupiers and can help to address the issue of stigmatisation that often label the social housing environment as poor people’s haven.

6.7.2 Means Ranking of the Key Social Constituents of SSHP

Table 6.17 shows means ranking of the key social constituents of SSHP based on social housing sectors. The result shows that the public and private social housing organisations considered ensuring security of lives and property (the overall mean value = 4.28); provision of a good

range of social services (the overall mean value = 4.17); and promotion of social cohesion (the overall mean value = 4.07) as the first three most critical constituents for achieving sustainability in SHP. In all, the constituents have mean values above 3.00, which suggest that they can be regarded as important for achieving sustainability in social housing. This outcome conforms to the argument of Akintoye et al. (2000) that a mean value of 3.0 of a factor suggests that it is important. ANOVA tests show no significant difference of opinions of the respondents on each of the key constituents at 5% significance level. Although rating of the constituents by the two sectors does not follow any appreciable pattern, they both have strong and positive opinions about the key social constituents.

Ensuring public awareness (the overall mean value = 3.81) and stakeholders' participation (the overall mean value = 3.76) are in 8th and 9th positions respectively, and they are differently rated by the public and private social housing organisations. Nonetheless, the constituents are significantly important for achieving sustainability in social housing. Islam (2008) emphasised the need for making stakeholders, particularly the end users, including decision makers in governments, housing providers and managers to understand the full consequences of their actions or indecisions. This can be in terms of what they have to do, how to do it better, where and when they have to do it, and why they have to do it for achieving sustainability in SHP.

Similarly, poor public awareness can exacerbate the process of environmental degradation and can inhibit the delivery of SSH. The United Nations (2002) observes that a sustained public dialogue and social interactions at all levels of society are necessary for avoiding some social issues that can cause a failure in sustainable initiatives. Through public awareness and stakeholders' participation, therefore, some specific social and economic conditions and cultural identities of stakeholders necessary for achieving SSHP can be identified and provided for as parts of the delivery processes.

The social factors can assist in achieving the sustainability agenda of the government as well as meeting the objectives of this research.

Table 6.17: Means Ranking for Social Constituents – Public vs. Private Sector

Factors	Overall (N=180)		Public Sector (N=59)		Private Sector (N=121)		f-stat	Sig
	Mean	Rank	Mean	Rank	Mean	Rank		
Ensuring Security of Lives and Property	4.28	1	4.15	1	4.35	1	2.645	.106
Provides a good range of Social Services	4.17	2	4.08	2	4.22	2	1.184	.278
Promotes Social Cohesion	4.07	3	4.08	2	4.06	3	0.037	.847
Ensuring Welfare and Quality Life	3.94	4	3.86	7	3.98	4	0.638	.425
Provides Skills Acquisition and Job Opportunities	3.93	5	3.90	5	3.95	5	0.130	.719
Promotes Equity by ensuring equal distribution and Gender Equality	3.89	6	3.97	4	3.85	7	0.698	.405
Community Development, Good and Quality Housing Provision and creates the Sense of a Place to Live	3.83	7	3.90	5	3.80	8	0.505	.478
Ensuring Public Awareness	3.81	8	3.64	9	3.88	6	2.613	.108
Ensuring Stakeholders' Participation	3.76	9	3.71	8	3.79	9	0.278	.599

Table 6.18 shows means ranking of the opinions of the small, medium and large social housing organisations on the key social constituents of SSHP. The result shows that all the social constituents have the overall mean value ranging between 3.80 and 4.29. This suggests that all the key constituents are important for achieving sustainability in social housing. In addition, respondents are not differ in their opinions at the 5% level of significance about all the constituents except for ensuring public awareness (f-stat 8.626, $p = .000$) and ensuring security of lives and property (f-stat 3.523, $p = .031$). However, the three groups of social housing organisations considered ensuring security of lives and property and provision of a good range of social services as the first two most critical factors for achieving sustainability in social housing. All the constituents are also rated differently by small, medium and large organisations. Therefore, based on the outcomes, the social constituents can be regarded as important for achieving sustainability in social housing from the perspective of sizes of the social housing organisations.

Table 6.19 shows mean ranking of respondents' opinions on the key social constituents of SSHP based on the importance of sustainability/green need. The result indicates that each of the key constituents was given high rating (mean values above 3.80) by the organisations that regard sustainability/green need as important to them. Similar to the overall means, the social housing organisations considered ensuring security of lives and property (mean value = 4.37); provision of a good range of social services (mean value = 4.23); promotes social cohesion (mean value = 4.18); ensuring welfare and quality life (mean value = 3.98); provides skills acquisition and job opportunities (mean value = 3.94); and promotes equity by ensuring equal distribution and gender equality (mean value = 3.88) as the first six critical social constituents for achieving sustainability in social housing based on the importance of sustainability/green need.

The result indicates that respondents' opinions differ at the 5% level of significance on two of the key factors: ensuring security of lives and property (f-stat 3.086, $p = .048$) and ensuring stakeholders' participation (f-stat 6.673, $p = .002$).

Table 6.18: Means Ranking for Social Constituents – According to the Size Organisation

Factors	Overall (N= 206)		Small (N = 68)		Medium (N= 27)		Large (N = 33)		f-stat	Sig
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank		
Ensuring Security of Lives and Property	4.29	1	4.41	1	4.38	1	4.12	2	3.523	.031
Provides a good range of Social Services	4.21	2	4.30	2	4.10	2	4.22	1	1.125	.327
Promotes Social Cohesion	4.08	3	4.10	4	4.02	4	4.10	3	0.204	.815
Ensuring Welfare and Quality Life	3.95	4	4.03	6	4.03	3	3.81	6	1.500	.226
Provides Skills Acquisition and Job Opportunities	3.94	5	3.99	7	3.88	6	3.95	4	0.203	.817
Promotes Equity by ensuring equal distribution and Gender Equality	3.89	6	4.07	5	3.82	7	3.79	7	2.094	.126
Community Development, Good and Quality Housing Provision and creates the Sense of a Place to Live	3.85	7	3.93	8	3.78	9	3.85	5	0.451	.638
Ensuring Public Awareness	3.83	8	4.12	3	3.90	5	3.51	9	8.626	.000
Ensuring Stakeholders' Participation	3.80	9	3.84	9	3.80	8	3.76	8	0.166	.847

Table 6.19: Means Ranking for Social Constituents – According to the Importance of Sustainability/Green need

Factors	Overall (N= 206)		Unimportant (N = 17)	Moderately Important (N = 47)	Important (N = 142)	f-stat	Sig	
	Mean	Rank	Mean	Mean	Mean			Rank
Ensuring Security of Lives and Property	4.29	1	4.24	4.06	4.37	1	3.086	.048
Provides a good range of Social Services	4.21	2	4.41	4.06	4.23	2	1.600	.204
Promotes Social Cohesion	4.08	3	3.88	3.85	4.18	3	2.956	.054
Ensuring Welfare and Quality Life	3.95	4	3.88	3.87	3.98	4	0.292	.747
Provides Skills Acquisition and Job Opportunities	3.94	5	4.24	3.83	3.94	5	1.247	.290
Promotes Equity by ensuring equal distribution and Gender Equality	3.89	6	3.94	3.91	3.88	6	0.051	.950
Community Development, Good and Quality Housing Provision and creates the Sense of a Place to Live	3.85	7	4.00	3.77	3.87	8	0.510	.601
Ensuring Public Awareness	3.83	8	3.88	3.68	3.87	8	0.741	.478
Ensuring Stakeholders' Participation	3.80	9	4.12	3.43	3.88	6	6.673	.002

6.8 DISCUSSIONS, SYNTHESIS AND SUMMARY OF FINDINGS

Many studies have shown that SHP has created a number of sustainability issues reflecting economic, environmental and social impacts on the environment and members of the public. The UK government, therefore, has shown strong commitment towards addressing some of the issues by encouraging social housing developers such as housing authorities and housing associations to integrate sustainability measures into their development activities (Essa et al., 2007). Through empirical survey, opinions of the social housing practitioners in England were sought for determining how they regard the importance of sustainability/green need as well as achieving sustainability in SHP.

Findings show that majority of the social housing providers (public and private) regard achieving sustainability in social housing and green need as important (see Tables 6.1 and 6.2). However, few social housing practitioners still regard these as unimportant which cannot be a surprise given the task of meeting sustainability requirements (Clark and Hay, 2012). The burden notwithstanding, achieving sustainability in SHP has been regarded as a benefit rather than cost to the society at large (CIH, Northern Ireland, 2010).

The result shown in Table 6.20 summarises and ranks respondents' opinions and data gathered through the empirical survey on the key constituents of SSHP from economic, environmental and social perspectives. The outcome represents the mean value and rank of each key sustainability factor based on sectors and sizes of social housing organisations. Given that the factors are differently rated, they are categorised into three: (i) most critical – for those ranked by every group of respondents between 1 – 5; (ii) critical – those factors not necessarily ranked by all between 1 – 5 but with at least, one rank between 1 – 5; and (iii) those in the category of 'others' are ranked above 5.

There are literature arguments that support the use of personal initiative (PI) judgment in research works, especially where there is need for it. For example, Rutter and Brown (2011) argue that “*professional higher education is about developing more complex thinking which has practical, reflective, personal, moral, as well as objective, conceptual and theoretical aspects, which are part of professional reasoning and judgment and ultimately professional understanding and knowledge, which are equally important*”. PI is a work behaviour defined as self-starting and proactive that overcomes barriers to achieve a goal and task (Frese and Fay, 2001). PI uses an active approach that is characterised by its self-starting and proactive nature and by overcoming difficulties that arise in the pursuit of a goal (Frese and Fay, 2001).

Table 6.20: Key Economic, Environmental and Social Constituents of SSHP: Summary of Findings

Level of criticality	Key Factors	Sectors				Sizes of Organisations					
		Public		Private		Small		Medium		Large	
		Mean value	Rank	Mean value	Rank	Mean value	Rank	Mean value	Rank	Mean value	Rank
Key Economic Constituents											
Most critical	Adequate funding and provision for meeting housing needs	4.24	2	4.52	1	4.38	2	4.62	2	4.38	1
	Affordability	4.34	1	4.44	2	4.35	3	4.67	1	4.28	2
	Efficient Economic Planning to ensure the Provision of Infrastructure/Social Services	4.14	3	4.26	3	4.50	1	3.97	5	4.21	3
	Appropriate Construction Technology	4.03	4	4.14	4	4.26	4	4.03	3	4.03	5
Critical	Economic Design that promotes efficient use of Resources and Mixed Development	3.92	7	4.17	5	4.22	5	3.93	6	4.10	4
	Good Governance for promoting Economic Growth	3.98	5	4.09	6	4.18	7	3.88	7	4.03	5
	Efficient Management for minimising Whole-life Cost	3.97	6	4.05	7	4.21	5	4.03	3	3.85	7
Other	Effective Legal and Administrative Frameworks	3.75	8	3.72	8	3.87	8	3.77	8	3.67	8
Key Environmental Constituents											
Most critical	Environmental Protection by using Renewable Energy Resources, Minimise Waste Generation, using Recyclable Materials and ensuring Polluter pays for the Act	3.93	2	4.22	2	4.24	2	4.08	1	4.03	1
	Environmental Friendly Materials	3.83	4	4.26	1	4.29	1	3.90	3	3.90	3
	Appropriate Design	4.02	1	4.13	3	4.21	3	4.07	2	3.99	2
	Effective Land Use Planning that promotes Efficient use of Natural Resources and Use of Alternative Transport Modes	3.88	3	3.68	4	3.81	4	3.65	4	3.68	4
Key Social Constituents											
Most critical	Ensuring Security of Lives and Property	4.15	1	4.35	1	4.41	1	4.38	1	4.12	2
	Provides a good range of Social Services	4.08	2	4.22	2	4.30	2	4.10	2	4.22	1
	Promotes Social Cohesion	4.08	2	4.06	3	4.10	4	4.02	4	4.10	3
Critical	Ensuring Welfare and Quality Life	3.86	7	3.98	4	4.03	6	4.03	3	3.81	6
	Community Development, Good and Quality Housing Provision and creates the Sense of a Place to Live	3.90	5	3.80	8	3.93	8	3.78	9	3.85	5
	Provides Skills Acquisition and Job Opportunities	3.90	5	3.95	5	3.99	7	3.88	6	3.95	4
	Ensuring Public Awareness	3.64	9	3.88	6	4.12	3	3.90	5	3.51	9
	Promotes Equity by ensuring equal distribution and Gender Equality	3.97	4	3.85	7	4.07	5	3.82	7	3.79	7
Other	Ensuring Stakeholders' Participation	3.71	8	3.79	9	3.84	9	3.80	8	3.76	8

Accordingly, the initiative was taken to appropriately consider respondents' opinions on equal basis for determining the most critical, critical and those outside these groups as 'others' from the key constituents of SSHP. Findings, therefore, reveal that the most critical factors are: (1) economic: affordability; adequate funding and provision for meeting housing needs; appropriate construction technology; and efficient economic planning to ensure the provision of infrastructure/social services; (2) environmental: appropriate design; environmental protection by using renewable energy resources, minimise waste generation, and using recyclable materials; effective land use planning that promotes efficient use of natural resources and use of alternative transport modes; and environmental friendly materials; (3) social: ensuring security of lives and property; provides a good range of social services; and promotes social cohesion.

Both the public and private social housing organisations have ranked adequate funding and provision for meeting housing needs; affordability; efficient economic planning to ensure the provision of infrastructure/social services; and appropriate construction as the top most four sustainability factors. This suggests that the factors are most critical for achieving sustainability in SHP. Although they both ranked the last two of the factors equally, adequate funding and provision for meeting housing needs are more important to the private sector than affordability. Contrarily, addressing affordability issue may be more important to the public social housing developers compared to adequate funding and provision. This is not a surprise given that public social housing developers are government agencies using public funds including ease of obtaining loans at low interest rates, guaranteed by the government for their development activities. This outcome aligns properly with the argument of Bardhan and Edelstein (2007) that the provision of housing depends upon well-functioning and adequate funding sources.

Effective legal and administrative frameworks; and ensuring stakeholders' participation are in the group of other key factors for achieving sustainability in SHP. The outcome suggests that the factors constitute no serious issue for social housing providers in the UK compared with factors like the need for ensuring affordability, adequate funding and supply of SSH. Nonetheless, they are key factors for achieving sustainability in SHP. The study by Ihuah and Eaton (2013) shows that stakeholders' participation, effective building maintenance and estate management practices are important for achieving sustainability in SHP.

In the UK, the government has shown a strong concern for an effective legal framework by providing the regulatory framework for social housing in England from 2012. According to Homes and Communities Agency (2012a), all registered social housing providers – private and local authority must comply with the requirements of the social housing regulatory framework, some of which are to:

- Be accountable to their tenants for services delivered and for addressing every potential or actual issues;
- Use simple and accessible approach by ensuring that complaints are resolved promptly, politely and fairly;
- Ensure security of lives of their tenants and property;
- Ensure rents is set for an accommodation (inclusive of service charges) at a level which is not more than 80% of the estimated market rent based on a method recognised by the Royal Institution of Chartered Surveyors;
- Provide choices, information and appropriate communication to meet the diverse needs of their tenants;
- Ensure a prudent, planned approach to repairs and maintenance of homes and communal areas; and
- Offer appropriate tenancies or terms of occupation that meets the purpose of the accommodation and needs of individual households.

Based on the various findings in this chapter, it is reasonable to conclude that through the empirical survey and data analyses, the key constituents of SSHP from economic, environmental and social perspectives have been established. The critical and most critical factors have also been determined from the key constituents. Findings have shown that all the key constituents of SSHP can help in meeting housing needs through the social housing sector.

This chapter together with chapter 5 have addressed part of objectives 3, 4 and 5. The next chapter also addresses part of objectives 3, 4 and 5 by providing detailed discussions on the key barriers to the implementation of SSHP based on economic, environmental and social pillars of SD.

CHAPTER 7. BARRIERS TO THE IMPLEMENTATION OF SSHP

7.1 INTRODUCTION

The main objective of this chapter is to determine the validity of the key factors constituting barriers to the implementation of SSH. Data analyses were carried out in relation to sectors, sizes and the importance of sustainability/green need in social housing organisations from economic, environmental and social perspectives.

7.2 KEY BARRIERS TO THE IMPLEMENTATION OF SSHP

Table 7.1 shows the combined key barriers to the implementation of SSHP, which are used for obtaining respondents' opinions through empirical survey. These are the key barriers obtained through the content analysis (see Chapter 6). They are related to the three pillars of SD i.e. economic, environmental and social.

Table 7.1: Key Barriers Included for the Questionnaire Survey

Key Barriers of SSHP determined through Content Analysis		Combined Key Barriers used for the Questionnaire Survey
Key Economic Barriers		
1	Poor affordability	Poor Affordability and Inadequate Consideration for a whole-life value of buildings, which increases costs of occupation to the residents
2	Lack of whole-life value of buildings	
3	Poor legal and administrative framework	Poor Legal and Institutional Frameworks arising from bureaucracy and inability of the public institutions to properly coordinate the provision of sustainable social housing and deal with financing laws, building codes including proper enforcement of rules and regulations.
4	Poor governance	Poor Governance, Development Plan, Provision of Infrastructure and Social Services including Lack of Incentive to providers hinder economic growth, demographic control, adequate provision and housing affordability.
5	Poor development plan	
6	Poor infrastructural development	
7	Lack of incentive to providers	
8	Inadequate supply	Inadequate Supply of social housing causes high costs and failure to properly meet increasing demand and residents' needs.
9	Lack of Appropriate Technology	Lack of Appropriate Technology to ensure sustainable construction, proper maintenance and waste reduction including low energy consumption and use of recyclable materials.
10	Inadequate funding	Inadequate Funding due to poor budgetary allocation, inadequate

		government subsidies, financial assistance and poor revenue generation.
11	Poor design	Poor Design and Maintenance Strategies are impairing achieving sustainability in social housing provision.
12	Poor maintenance	Inadequate research works for promoting quality, funding strategies and residents' satisfaction.
13	Lack of research work	
Key Environmental Barriers		
1	Poor land use plan	Poor Land Use Plan mostly causes inadequate allocation and misuse of land for sustainable social housing provision.
2	Poor Environmental Protection	Poor Environmental Protection due to gas emission and excessive energy usage and waste generation.
3	Poor accessibility	Poor Accessibility and Inadequate Alternative Transport Modes like pedestrian, cycling and disabled routes including public bus and rail services
4	Lack of alternative transport modes	
5	Use of poor quality materials	Use of Poor Quality Materials and Non-usage of Renewable resources .
6	Non-usage of renewable materials	
7	Waste of natural resources	Waste of Natural Resources such as land resources and water in construction and at homes.
Key Social Barriers		
1	Poor public awareness and lack of sustainability data	Poor Public Awareness and lack of educative data are contributing to the lack of necessary supports by the residents, community members and political class for achieving sustainability in social housing provision.
2	Poor education and skill development	Poor Education, Skills Development and Employment generation hinder the use of proper technology and are causing the use of poor workmanship in social housing provision.
3	Poor employment generation	
4	Poor social cohesion	Poor Social cohesion is making some social housing estates to be stigmatised and mostly regarded as poor peoples' houses.
5	Lack of stakeholders' involvement	Lack of Stakeholders' Involvement in the development and decision making processes of sustainable social housing.
6	Poor social service provision	Poor Social Service Provision, Inadequate Well-Being and Safety Measure are encouraging the rate of crimes that constitute a threat to lives and property of the residents in some social housing environment.
7	Poor Health and well-being	
8	Poor safety measure	

7.3 ECONOMIC BARRIERS TO THE IMPLEMENTATION OF SSHP

Table 7.2 shows respondents' opinions on the key factors that constitute barriers to the implementation of SSHP. The result shows that 57.5% of the social housing organisations agree that these factors are key barriers to the implementation of SSH compared with 15.1% and 27.4% of the social housing organisations that disagree and neither disagree/agree respectively. Furthermore, the outcome shows that five of the key barriers are rated 50% and above. This suggests that poor affordability and inadequate consideration for a whole-life value of buildings

(90.82%); inadequate funding (85.92%); Poor Legal and Institutional Frameworks (59.22%); Inadequate Supply. (52.43%); and Lack of Appropriate Technology (50.00%) can be regarded as the top five critical barriers to the implementation of SSHP.

The need for more affordable housing to be developed in the UK is well-established given that for many years stakeholders have been building fewer homes than the increase in the number of households (Diacon et al., 2012). For example, records of affordable housing delivery in the UK show a decline rate as follows (Department for Communities and Local Government, 2013): “a total of 42,830 affordable homes were provided in England in 2012-13, a decrease of 26 per cent compared to the 58,100 (revised) affordable homes supplied in 2011-12 and a total of 18,290 new homes were delivered through intermediate housing schemes, including intermediate rent and affordable home ownership, in 2012-13, a 6 per cent decrease from last year.” This is an indication that affordable housing provision through different means has been on a downward trend for many years.

Table 7.2: Level of Agreement for Key Economic Barriers

Key Factors	No. of responses	Disagree		Neither Disagree/Agree		Agree		Rank
		No	%	No	%	No	%	
Poor Affordability and Inadequate Consideration for a whole-life value of buildings.	207	6	2.90	13	6.28	188	90.82	1
Inadequate Funding	206	19	9.22	10	4.86	177	85.92	2
Poor Legal and Institutional Frameworks.	206	25	12.14	59	28.64	122	59.22	3
Inadequate Supply.	206	24	11.65	74	35.92	108	52.43	4
Lack of Appropriate Technology.	205	46	22.00	57	28.00	102	50.00	5
Poor Design and Maintenance Strategies.	206	51	24.76	68	33.01	87	42.23	6
Inadequate research works.	194	24	12.37	89	45.88	81	41.75	7
Poor Governance, Development Plan, Provision of Infrastructure and Social Services including Lack of Incentive to providers.	206	52	25.24	78	37.86	76	36.90	8
Cumulative Total		247	15.1	448	27.4	941	57.5	

The result also shows that poor governance, development plan, provision of infrastructure and social services including lack of incentive to providers constitute the least rated group of factors (36.90%). Notwithstanding, the outcome does not affect their importance for achieving sustainability in social housing. Therefore, where the performance of each of the listed group of factors is poor, this can impair the strategy for achieving sustainability in social housing. The study by Abidin (2009) shows that “the government should play a bigger role in promoting

sustainable construction, through actions such as through strong enforcement of legislation, devising new policy, or giving incentives to developers who want to pursue sustainability in their projects". Abidin (2009) also argues that poor governance creates sustainability challenges in the areas of productivity, quality, safety, technology and unproductive practices. Poor development plan can be linked with a mismatch between supply and demand, a situation which makes some areas to be suffering from low demand and housing market failure (Adelle and Pallemmaerts, 2009). Similarly, literature findings have shown that the lack of rapid and significant improvements in public transport systems and other major urban infrastructure as well as social services are banes of sustainable housing development (Power, 2004).

Table 7.3 shows the extent to which the public and private sectors have agreed or disagreed with the key barriers to the implementation of sustainable social housing. For example, 53.2% of the public and 61.1% of the private agreed that all the factors constitute barriers to the implementation of SSHP. Poor affordability and inadequate consideration for a whole-life value of buildings; inadequate funding; poor legal and institutional frameworks; and inadequate supply are the first 4 groups of barriers rated by the two sectors as the most critical to the achievement of sustainability in social housing. The outcome indicates that in order to effectively implement SSHP; issues relating to these barriers should be properly addressed.

In the UK, affordability has been regarded as a real problem in many areas like South Manchester, North East Cheshire, North West areas, Kirklees District Council and Essex due to higher demand than supply, which is pricing housing out of the reach of the local people and low income households (Office of the Deputy Prime Minister, 2003; Uttlesford Futures, 2008; Kirklees Council, 2008).

Table 7.3: Level of Agreement for Key Economic Barriers – Public vs. Private Sector

Key Factors	Public Sector (N = 59)						Private Sector						
	Disagree		Neither Disagree/Agree		Agree		No of Responses	Disagree		Neither Disagree/Agree		Agree	
	No	%	No	%	No	%		No	%	No	%	No	%
Poor Affordability and Inadequate Consideration for a whole-life value of buildings	3	5.1	5	8.5	51	86.4	121	2	1.7	7	5.8	112	92.6
Inadequate Funding	6	10.2	3	5.1	50	84.7	120	11	9.2	5	4.2	104	86.7
Poor Legal and Institutional Frameworks	8	13.6	18	30.5	33	55.9	120	14	11.7	30	25.0	76	63.3
Inadequate Supply	10	16.9	19	32.2	30	50.8	120	13	10.8	40	33.3	67	55.8
Lack of Appropriate Technology	16	27.1	17	28.8	26	44.1	119	25	21.0	32	26.9	62	52.1
Poor Governance, Development Plan, Provision of Infrastructure and Social Services including Lack of Incentive to providers	14	23.7	24	40.7	21	35.6	120	30	25.0	41	34.2	49	40.8
Poor Design and Maintenance Strategies	15	25.4	27	45.8	17	28.8	120	31	25.8	27	22.5	62	51.7
Inadequate research works *	6	10.9	28	50.9	21	38.2	115	16	13.9	47	40.9	52	45.2
Cumulative Total	78	16.7	141	30.1	249	53.2		142	14.9	229	24.0	584	61.1

NB* = 55

Lack of appropriate technology; poor governance, development plan, provision of infrastructure and social services including lack of incentive to providers; poor design and maintenance strategies; and inadequate research works are rated lower than the first four groups of barriers by the two social housing sectors, particularly the public. Notwithstanding, effects of these barriers for achieving sustainability in social housing are quite enormous and it is necessary that they are equally addressed like other barriers. The study by Eccleshare et al. (2005) identify that “many housing developers demonstrate a general lack of understanding of low-energy design strategies, the concept of whole-life costing and an inability to identify opportunities for the inclusion of renewable energy technology”, and are encountering “difficulty in procuring environmentally sustainable building materials and technologies”. Similarly, poor design and maintenance strategies have been identified as major reasons for making social housing stocks to suffer from poor condition and obsolescence (Office of the Deputy Prime Minister, 2003). Furthermore, Cooper and Jones (2009) argue that lack of resources in terms of time, staff, sustainable related information and funds to deliver quality maintenance works to satisfy the changing tenant expectations largely contribute to the low rate of achieving sustainability in the social housing sector.

The UK National Audit Office (2005) also identifies shortage of skills, especially the public sector skills needed to manage and oversee projects execution in terms of suitably experience contract managers that can robustly challenge contractors handling social housing projects (maintenance or new development). Williams and Dair (2006) argue that achieving sustainability in social housing has been hindered by the lack of appropriate technology.

Based on findings and the aforementioned discussions, addressing the barriers can help to achieve sustainability in social housing. The outcomes can also assist in achieving the objectives of this research.

7.3.1 Means Ranking of Respondents’ Opinions on the Key Economic Barriers to the Implementation of SSHP

Tables 7.4 to 7.6 present means ranking of respondents’ opinions on the key economic barriers to the implementation of SSHP based on social housing sectors, sizes and the importance of sustainability/green need. Table 7.4 show that inadequate funding (the overall mean value = 4.32); poor affordability and inadequate consideration for a whole-life value of buildings (overall mean value = 4.28); poor legal and institutional frameworks (the overall mean value = 3.66); inadequate supply (the overall mean value = 3.50); and inadequate research works (the overall mean value = 3.43) are regarded as the most critical barriers by the two sectors of social housing organisations.

Notwithstanding, the remaining key barriers are also important given that each of them has an overall mean value above 3.0. These barriers are: lack of appropriate technology (the overall mean value = 3.36); poor design and maintenance strategies (the overall mean value = 3.35); and poor governance, development plan, provision of infrastructure and social services including lack of incentive to providers (the overall mean value = 3.20). With the exception of Poor Design and Maintenance Strategies (f-stat = 4.215, p = .042), the ANOVA analysis shows that opinions of the social housing organisations are not differ on each of the barriers at 5% significance level.

Table 7.5 shows mean values and ranking of respondents' opinions on the key barriers to the implementation of SSHP based on sizes of the organisations. The result shows that all sizes of the organisations consider inadequate funding (the overall mean value = 4.32); poor affordability and inadequate consideration for a whole-life value of buildings (the overall mean value = 4.29); and poor legal and institutional frameworks (the overall mean value = 3.64) as the first top three critical barriers to the implementation of SSHP. Similar to the outcome, the literature evidence shows that inadequate funding has been the bane of sustainable practices, particularly in the social housing sector for over several years in many countries including developed economy.

The trend as shown in the literature is as follows:

- i. "Although the money available for social housing is now increasing as housing is being given a greater priority in successive spending reviews, spending on housing still remains significantly lower than real terms spending in the mid 1990's given that in the UK, the Housing Corporation's investment programme for the current year (2003) is £1.62bn – in 1992/3 it was £2.35bn" (Simpson and MacDonald, 2003);
"The additional financial cost of providing the measures to improve the sustainability of housing was cited by many of the social housing project managers as being a major barrier to the realisation of their schemes" (Eccleshare et al., 2005);
- ii. "Implementation of the sustainability agenda is concentrated on the installation of sustainable technologies but social landlords are not motivated to do this because of limited funds" (Cooper and Jones, 2009);
- iii. "Among the list of barriers that have prevented or limited the inclusion of sustainable features in affordable housing developments is funding limitations" (Dolata, 2011);
- iv. "There has been general lack of fund for the investment in the infrastructure necessary to support future growth in housing and economic development" (Tibbalds, 2012); and
- v. Lewchuk (2013) reports that in Canada, "the federal government's Affordable Housing Initiative (AHI), which provides money to build new affordable housing, is set to expire in 2014, meaning that the erosion of federal investments is more than just less

Table 7.4: Mean Ranking for Key Economic Barriers – Public vs. Private Sector

Factors	Overall			Public Sector			Private Sector		f-stat	Sig
	Mean	Rank	No	Mean	Rank	No	Mean	Rank		
Inadequate Funding	4.32	1	59	4.25	1	120	4.35	1	0.381	.538
Poor Affordability and Inadequate Consideration for a whole-life value of buildings.	4.28	2	59	4.15	2	121	4.35	1	2.645	.106
Poor Legal and Institutional Frameworks	3.66	3	59	3.61	3	120	3.68	3	0.220	.639
Inadequate Supply.	3.50	4	59	3.41	4	120	3.54	4	0.923	.338
Inadequate research works	3.43	5	55	3.35	5	115	3.47	5	0.605	.438
Lack of Appropriate Technology	3.36	6	59	3.24	6	119	3.42	7	1.292	.257
Poor Design and Maintenance Strategies	3.35	7	59	3.10	8	120	3.47	5	4.215	.042
Poor Governance, Development Plan, Provision of Infrastructure and Social Services including Lack of Incentive to providers.	3.20	8	59	3.19	7	120	3.21	8	0.019	.889

Table 7.5: Mean Ranking for Key Economic Barriers – According to the Size of Organisation

Key Factors	Overall			Small Size			Medium			Large Size			f-stat	Sig.
	No	Mean	Rank	No	Mean	Rank	No	Mean	Rank	No	Mean	Rank		
Inadequate Funding	205	4.32	1	67	4.25	2	60	4.37	2	78	4.35	1	0.253	.776
Poor Affordability and Inadequate Consideration for a whole-life value of buildings.	206	4.29	2	68	4.41	1	60	4.38	1	78	4.12	2	3.523	.031
Poor Legal and Institutional Frameworks	205	3.64	3	67	3.73	3	60	3.67	3	78	3.54	3	0.725	.486
Inadequate Supply.	205	3.49	4	67	3.52	4	60	3.55	6	78	3.42	4	0.425	.654
Inadequate research works	193	3.41	5	62	3.37	5	57	3.61	4	74	3.30	5	1.864	.158
Lack of Appropriate Technology	204	3.37	6	67	3.34	7	59	3.51	7	78	3.29	6	0.805	.449
Poor Design and Maintenance Strategies	205	3.32	7	67	3.36	6	60	3.60	5	78	3.08	7	4.073	.018
Poor Governance, Development Plan, Provision of Infrastructure and Social Services including Lack of Incentive to providers.	205	3.17	8	67	3.30	8	60	3.33	8	78	2.94	8	3.831	.023

affordable housing being built; it also makes it harder to retain and maintain what already exists". In addition, when the needed repairs to social housing are not carried out due to inadequate funding, it can lead to deteriorating housing conditions, unnecessarily shortening of units' useful life and will add to the demand and pressure for the development of new affordable housing (Lewchuk, 2013).

Karuppannan and Sivam (2009) argue that "*in Australia, affordable housing means a small unit, use of low cost material, small block and cheap land at the periphery of the city and sustainable housing is generally been constructed for the high end of the market, for example, Lochiel Park in Adelaide, South Australia*". Furthermore, many sustainability measures were not achieved because the available legal system does not make them to be important requirements for stakeholders, which includes developers, purchasers, tenants and end users (Williams and Dair, 2006). Similar to the overall mean ranking (overall mean value = 3.49), the small and large social housing organisations put inadequate supply of social housing in the 4th position compared with the 6th position by the medium organisations.

The outcome notwithstanding, shortage of affordable housing seems to be a sustainable issue in many countries. By examining the cost and availability of private rental housing, Wiesel et al (2012) observe that there is a large shortage of housing that is affordable to low and moderate income households in Australia.

According to Tan (2011), despite efforts by the Malaysian government, there are various issues relating to a housing delivery system that have undermined the success of sustainable housing delivery for the past 30 years like inadequate supply and poor affordability. In the UK, the proportion of first-time buyers under 30 years old, who can buy houses without a form of assistance has fallen from 65% per cent in 2005 to 22 per cent in 2011 (Council of Mortgage Lenders, 2011 as cited in Diacon et al., 2012).

Despite the high overall mean value above 3.0, the ANOVA tests show that opinions of the organisations differ on three of the factors at the 5% level of significance. These are: poor affordability and inadequate consideration for a whole-life value of buildings (f-stat 3.523, p = .031); poor design and maintenance strategies (f-stat 4.073, p = .018); poor governance, development plan, provision of infrastructure and social services including lack of incentive to providers (f-stat 3.831, p = .023).

Considering the pattern of response and outcomes, it is reasonable to conclude that the factors constitute key barriers to the implementation of SSHP. Therefore, it is possible that addressing issues of these barriers can assist in achieving sustainability in social housing provision. The outcomes can also be relied on for achieving the objectives of this research.

Table 7.6 depicts mean values and ranking of respondents' opinions based on the importance of sustainability/green need in SHP. The ANOVA analysis test shows that opinions of the social housing organisations did not differ on each of the factors at the 5% significant level except on poor affordability and inadequate consideration for a whole-life value of buildings (f-stat 3.086, $p = 0.48$). In addition, the mean value of the importance of each of the key barriers is higher than those of the unimportant and moderately important except for inadequate supply and poor governance, development plan, provision of infrastructure and social services including lack of incentive to providers. The overall mean value for each of the barriers is above 3.00. Relying on the argument of Akintoye et al. (2000) on the reasonable consideration of the mean value, the outcome suggests that it is necessary to address all barrier issues relating to the implementation of SSHP. The expected result can assist in achieving the sustainability agenda of the government through the social housing sector.

Table 7.6: Mean Ranking for Key Economic Barriers – According to the Importance of Sustainability/Green need

Factors	Overall			Unimportant		Moderately Important		Important			f-stat	Sig
	No	Mean	Rank	No	Mean	No	Mean	No	Mean	Rank		
Inadequate Funding	205	4.32	1	17	4.06	47	4.15	141	4.41	1	2.004	.137
Poor Affordability and Inadequate Consideration for a whole-life value of buildings.	206	4.29	2	17	4.24	47	4.06	142	4.37	2	3.086	.048
Poor Legal and Institutional Frameworks	205	3.64	3	17	3.59	47	3.60	141	3.66	3	0.098	.907
Inadequate Supply.	205	3.49	4	17	3.53	47	3.53	141	3.48	4	0.093	.912
Inadequate research works	193	3.41	5	17	3.18	43	3.40	133	3.45	5	0.626	.536
Lack of Appropriate Technology	204	3.37	6	16	3.38	47	3.28	141	3.40	7	0.284	.753
Poor Design and Maintenance Strategies	205	3.32	7	17	3.35	47	3.04	141	3.41	6	2.004	.137
Poor Governance, Development Plan, Provision of Infrastructure and Social Services including Lack of Incentive to providers.	205	3.17	8	17	3.29	47	3.17	141	3.16	8	0.153	.858

7.4 ENVIRONMENTAL BARRIERS TO THE IMPLEMENTATION OF SSHP

In this section, discussions are centred on analyses of respondents' opinions on the key environmental barriers to the implementation of SSHP. These comprise of social housing organisations' opinions based on sectors they belong (public or private sector), sizes and importance of sustainability/green need.

Table 7.7 shows respondents' levels of agreement to the key environmental barriers to the implementation of SSHP. The outcome shows that 53.6% of the respondents agree on the barriers to the implementation of SSHP compared with 17.3% and 29.1% of the respondents that disagree and neither disagree/agree. The top rated barriers to the implementation of SSHP are: protection (68.9); waste of natural resources (67.5%); and poor land use plan (50.0%).

Table 7.7: Level of Agreement for Key Environmental Barriers

Key Factors	Disagree		Neither Disagree/Agree		Agree		Rank	
	N	No	%	No	%	No		%
Poor Environmental Protection	206	26	12.6	38	18.5	142	68.9	1
Waste of Natural Resources.	206	21	10.2	46	22.3	139	67.5	2
Poor Land Use Plan.	206	28	13.6	75	36.4	103	50.0	3
Poor Accessibility and Inadequate Alternative Transport Modes	206	47	22.8	68	33.0	91	44.2	4
Use of Poor Quality Materials and Non-usage of Renewable resources.	206	56	27.2	73	35.4	77	37.4	5
Cumulative Total		178	17.3	300	29.1	552	53.6	

Table 7.8 shows respondents' opinions on the key environmental barriers to the implementation of SSHP. The outcome reflects opinions of the public and private non-profit social housing organisations. The result shows that 53.2% of the public social housing organisations agree that the environmental factors constitute barriers to the implementation of SSHP compared with 18.3% and 28.5% that disagree and neither disagree/agree respectively. From the private organisations, 56.2% of them agree compared with 17.0% and 26.8% that disagree and neither disagree/agree respectively.

The barriers are differently rated by the two groups of social housing organisations with no similar pattern of opinions. Although two of the barriers - poor environmental protection and waste of natural resources are both rated above 50% by the public and private sectors respectively, all the identified factors can be regarded as barriers to the implementation of SSHP. In particular, the private sector has rated all the barriers above 50%.

Table 7.8: Level of Agreement for Key Environmental Barriers – Public vs. Private Sector

Key Factors	Public Sector (N = 59)						Private Sector (N = 120)					
	Disagree		Neither Disagree/Agree		Agree		Disagree		Neither Disagree/Agree		Agree	
	No	%	No	%	No	%	No	%	No	%	No	%
Poor Environmental Protection	8	13.6	6	10.2	45	76.3	17	14.2	22	18.3	81	67.5
Waste of Natural Resources.	7	11.9	12	20.3	40	67.8	10	8.3	24	20.0	86	71.7
Poor Land Use Plan.	10	16.9	18	30.5	31	52.5	15	12.5	47	39.2	58	48.3
Poor Accessibility and Inadequate Alternative Transport Modes	14	23.7	25	42.4	20	33.9	27	22.5	31	25.8	62	51.7
Use of Poor Quality Materials and Non-usage of Renewable resources.	15	25.4	23	39.0	21	35.6	33	27.5	37	30.8	50	41.7
Cumulative Total	54	18.3	84	28.5	157	53.2	102	17.0	161	26.8	337	56.2

However, the two sectors swap positions of the first two environmental barriers. The public have rated poor land use plan above poor accessibility and inadequate alternative transport modes. This suggests that the existence of the latter barrier is as a result of the poor land use plan strategies. The private sector holds a contrary view on the rating of these two barriers. This is suggesting that poor accessibility and inadequate alternative transport modes can be having a serious limiting effect on the value and attractiveness of the housing units under the care of the private sector.

Notwithstanding the pattern of rating, the nature of these environmental barriers and the outcomes are comparable with the general requirements identified in the literature for addressing environmental issues for achieving sustainability in the construction of housing. According to Borer and Harris (1998 as cited in Eccleshare et al., 2005), the Centre for Alternative Technology (CAT) opine that sustainable buildings should:

“(1) provide a healthy and comfortable internal environment; (2) have low energy requirements and low running costs; (3) be constructed with low-energy, and sustainably produced materials; (4) specify reused, recycled and/or recyclable materials; (5) be prudent in its use of non-renewable resources, including water; (6) be design and sited so as to minimise reliance on private transport; and (7) be durable and designed to last at least 100 years.”

7.4.1 Mean Ranking of the Key Environmental Barriers Based on Sectors, Sizes and Importance of Sustainability/Green Need

Table 7.9 shows means raking of the environmental barriers to the implementation of SSHP based on the opinions of social housing practitioners in the public and private sector organisations. The two sectors rank three of the barriers equally as 3rd, 4th and 5th except for rating waste of natural resources (mean value = 3.78) as first by the private sector compared with second position (mean value = 3.71) by the public sector and poor environmental protection, first position (mean value = 3.92) by the public sector and second position (mean value = 3.76) by the private sector. The outcome is not a surprise given that the public can be more concerned with strategies aimed at protecting the environment than the private sector organisations. Similarly, the private organisations could not afford to waste resources of any type in construction because it will affect the total costs of provision at the end compared with the public sector organisations, which use public funds in their construction activities.

However, it can be concluded based on respondents' opinions that the barriers can be having some limiting effects on the implementation of SSHP, more so that the mean value for each as given by the sectors and the overall mean value are above 3.00. ANOVA test shows that

respondents' opinions are not differ at 5% significance level on any of the barriers. The outcome therefore, can be relied on for achieving the objectives of this research.

Table 7.9: Mean Ranking for Key Environmental Barriers – Public vs. Private Sector

Factors	Overall (N=179)		Public Sector (N =59)		Private Sector (N=120)		f-stat	Sig
	Mean	Rank	Mean	Rank	Mean	Rank		
Poor Environmental Protection	3.81	1	3.92	1	3.76	2	1.048	.307
Waste of Natural Resources.	3.75	2	3.71	2	3.78	1	0.195	.659
Poor Land Use Plan.	3.45	3	3.44	3	3.45	3	0.004	.947
Poor Accessibility and Inadequate Alternative Transport Modes	3.31	4	3.19	4	3.37	4	1.244	.266
Use of Poor Quality Materials and Non-usage of Renewable resources.	3.16	5	3.14	5	3.17	5	0.038	.846

Table 7.10 shows that all sizes – small, medium and large, of social housing organisations are unanimous in their opinions and form similar pattern of ranking the key environmental barriers to the implementation of SSHP. However, ANOVA test shows that the opinions of the groups are not differ at 5% significance level on poor environmental protection (f-stat 1.267, p = .284); waste of natural resources (f-stats 1.257, p = .287) and poor land use plan (f-stat 0.338, p = .714) but differ on poor accessibility and inadequate alternative transport modes (f-stat 3.703, p = .026) and use of poor quality materials and non-usage of renewable resources (f-stat 4.066, p = .019). The assessment criteria for Eco-Homes rating are energy, transport, pollution, materials, water, ecology and land use and health and well-being (Anderson and Howard, 2000 as cited in Eccleshare et al., 2005).

In the UK like many developed and developing countries, the poor accessibility to homes, services and places of employment has been identified as the key sustainability issue of affordable housing provision for promoting vibrant communities (Kirklees Council, 2008). The SD barriers in Vale of White Horse District Council, UK include congestion on strategic and local road network including limited access to services (Vale of White Horse District Council, 2012). Similarly, the use of poor quality, inadequate, untested or unreliable sustainable materials, products or systems (including long term management problems), particularly in many public construction works causes sustainability problems (Williams and Dair, 2006).

The outcome therefore, can assist in minimising the impact of SHP on the environment. For example, measures aimed at promoting the use of less polluting materials, and encourage household recycling, will ensure that the future housing stock has fewer negative impacts on the

environment (Department of Trade and Industry, 2006). The outcome shows a good pattern of opinions based on sizes of social housing organisations and can be relied on for addressing environmental barriers to the implementation of SSHP.

Table 7.11 shows opinions on the key environmental barriers based on the importance of sustainability/green need to the social housing organisations. The outcome indicates that the overall mean ranking for each of the factors is similar to the mean ranking of the 'important' opinions. ANOVA test also shows that respondents have no different opinions at 5% significance level on all the key environmental barriers. In addition, each of the barriers have an overall mean value above 3.00.

The pattern of ranking indicates that the outcome can be relied on for the achievement of the objectives of this research based on the importance of sustainability/green need to the social housing organisations.

Table 7.10: Mean Ranking for Key Environmental Barriers – According to the Size of Organisation

Key Factors	Overall (N205)		Small Size (N=67)		Medium (N=60)		Large Size (N=78)		f-stat	Sig.
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank		
Poor Environmental Protection	3.80	1	3.94	1	3.78	1	3.69	1	1.267	.284
Waste of Natural Resources	3.71	2	3.85	2	3.62	2	3.65	2	1.257	.287
Poor Land Use Plan	3.46	3	3.51	3	3.50	3	3.40	3	0.338	.714
Poor Accessibility and Inadequate Alternative Transport Modes	3.29	4	3.55	4	3.08	4	3.23	4	3.703	.026
Use of Poor Quality Materials and Non-usage of Renewable resources.	3.13	5	3.40	5	3.07	5	2.95	5	4.066	.019

Table 7.11: Mean Ranking for Key Environmental Barriers – According to the Importance of Sustainability/Green need

Key Factors	Overall (N=206)		Unimportant (N=18)	Moderately Important (N=18)	Important (N=170)		f-stat	Sig
	Mean	Rank			Mean	Rank		
Poor Environmental Protection	3.80	1	4.11	3.89	3.75	1	1.279	.281
Waste of Natural Resources	3.71	2	3.67	3.89	3.70	2	0.369	.692
Poor Land Use Plan	3.46	3	3.61	3.33	3.46	3	0.432	.650
Poor Accessibility and Inadequate Alternative Transport Modes	3.29	4	3.56	3.61	3.23	4	1.840	.161
Use of Poor Quality Materials and Non-usage of Renewable resources.	3.13	5	3.28	3.22	3.11	5	0.326	.722

7.5 SOCIAL BARRIERS OF SSHP

Similar to the previous analyses on constituents and barriers to the implantation of SSHP, discussions in this section are based on the analysis of respondents' opinions from sectors, sizes and importance of sustainability/green need.

Table 7.12 shows frequencies of opinions on the key social barriers to the implementation of SSHP. The outcome shows that poor social cohesion (68.93%); poor public awareness and lack of sustainability data (67.48%); and poor education, skills development and employment generation (49.76%) are the top three factors that constitute barriers to the implementation of SSHP. Similar to this outcome, it has been established that non-provision of mixed housing types creates poor social cohesion (Kirklees Council, 2008). However, Long and Hutchins (2003) argue that sustainability can be enhanced by avoiding concentrations of low-income households that are unable to provide sufficient business to support local shops and leisure facilities.

The outcome also shows that lack of stakeholders' involvement (44.17%) and poor social service provision, inadequate well-being, facilities and safety measure (37.38%) are the least rated barriers. According to Williams and Dair (2006), achieving sustainability in social housing has been hindered by poor skills development and lack of stakeholders' involvement in the development processes. Involving the key stakeholders and the community at large in the development process can go a long way in generating public support for a sustainable project and addressing issues associated with 'Not in My Back Yard' syndrome (Nelson et al., 2009). Williams and Dair (2006) observe that a major factor constituting barrier to SSH development is the fact that stakeholders' are not always included or included too late in the social housing development processes.

Eccleshare et al. (2005) argue that *"to achieve greater social inclusion, there is a need to directly target the needs of those excluded from the social and economic mainstream given that costs of failing to tackle this problem are high and bad housing and poverty tend to feed on each other in a vicious circle, creating a depressing cycle of poor health, low self-esteem, educational failure, unemployment and crime"*. Therefore, addressing inadequate well-being facilities and poor safety measure identified as barriers to achieving sustainability in social housing can assist in achieving sustainability agenda of the government through the sector. The study by Eccleshare et al. (2005) also shows that *"the UK has one of the worst records for additional winter death rates (known as excess winter mortality) with a 23 per cent higher rate of deaths in the December-March period, compared with August-November or April-July"*. Available records further show that the rate is twice as high as rates in the USA and Germany, and is even higher than in Bulgaria (Eccleshare et al., 2005).

Table 7.12: Level of Agreement for Key Social Barriers

Key Factors	Disagree		Neither Disagree/Agree		Agree		Rank	
	N	No	%	No	%	No		%
Poor Social cohesion.	206	26	12.62	38	18.45	142	68.93	1
Poor Public Awareness and Lack of Sustainability Data	206	21	10.19	46	22.33	139	67.48	2
Poor Education, Skills Development and Employment Generation.	205	46	22.44	57	27.80	102	49.76	3
Lack of Stakeholders' Involvement.	206	47	22.82	68	33.01	91	44.17	4
Poor Social Service Provision, Inadequate Well-Being Facilities and Safety Measure.	206	56	27.18	73	35.44	77	37.38	5
Cumulative Total		196	19.0	282	27.4	551	53.6	

The outcome shows that 53.6% of the respondents agree that the barriers constitute limitations to achieving sustainability in social housing compared with 19.0% and 27.4% that disagree and neither disagree/agree respectively. The manner of response demonstrates that the barrier issues should be addressed for achieving sustainability in social housing.

Table 7.13 indicates opinions of social housing practitioners in the public and private sectors on the key factors that constitute barriers to the implementation of SSHP. The outcome shows that 51.5% and 56.9% of the public and private organisations respectively agree that the barriers are actually limiting the achievement of sustainability in social housing. Comparing these results with 20.4% and 28.1% of the public sector organisations and 18.7% and 24.4% of the private sector organisations that disagree and neither disagree/agree respectively, it can be concluded that above 50% of the two sectors agree with the status of the factors as barriers.

Table 7.13: Social Housing Sectors' Opinions about Key Social Barriers of SSHP

Key Factors	Public Sector (N = 59)						Private Sector (N = 120)					
	Disagree		Neither Disagree/Agree		Agree		Disagree		Neither Disagree/Agree		Agree	
	No	%	No	%	No	%	No	%	No	%	No	%
Poor Public Awareness and Lack of Sustainability Data	7	11.9	12	20.3	40	67.8	10	8.3	24	20.0	86	71.7
Poor Social cohesion.	8	13.6	6	10.2	45	76.3	17	14.2	22	18.3	81	67.5
* Poor Education, Skills Development and Employment Generation.	16	27.1	17	28.8	26	44.1	25	21.0	32	26.9	62	52.1
Lack of Stakeholders' Involvement.	14	23.7	25	42.4	20	33.9	27	22.5	31	25.8	62	51.7
Poor Social Service Provision, Inadequate Well-Being Facilities and Safety Measure.	15	25.4	23	39.0	21	35.6	33	27.5	37	30.8	50	41.7
Cumulative Total	60	20.4	83	28.1	152	51.5	112	18.7	146	24.4	341	56.9

* N= 178

However, the two sector organisations did not have equal level of agreement for each of the barriers. The private considers poor public awareness and lack of sustainability data (71.7%) as the top most set of barriers, but the public rates the barriers (67.8%) as second. This outcome notwithstanding, making members of the public aware of the importance of SD including appropriate sustainability data can be more effective if handled by the government than the private sector. The government also has adequate resources – financial, personnel and relevant agencies to embark on public awareness campaign with ease compared with the private. According to Eccleshare et al. (2005), “*it is becoming widely accepted by leading ecologists that the real barriers to sustainable development are no longer practical or technical, but economic, social and political*”. Gurran (2003) argues that, “*the main weaknesses associated with individual sustainable plans relate to out-dated and insufficient data, as well as a lack of resources or process necessary for the implementation of the public awareness programme, which makes community and political support to be critical for effectiveness*”.

The public also rates poor social cohesion (76.3%) as first compared with second position (67.5%) by the private. This outcome suggests that ensuring social cohesion would require providing mixed-developments that would make the private incurs loss of income as a result of charging differential rates on similar units occupied by low, medium and high--income households. Arguably, notwithstanding the non-profit nature of the private social housing providers, the public sector can still find it more convenient to satisfy social cohesion requirement of sustainable housing development.

The outcome can therefore assist in achieving sustainability in social housing, provided the key social barriers are appropriately considered by stakeholders in the social housing sector. The outcome can also assist in achieving the objectives of this research.

7.5.1 Mean Ranking of the Key Social Barriers Based on Sectors, Sizes and Importance of Sustainability/Green Need

Table 7.14 shows means ranking of the opinions of social housing practitioners in the public and private sectors on the key social barriers. The result shows that the two sectors swap positions of ‘poor social cohesion’ (public, mean value = 3.92 – first position; private, mean value = 3.76 – second position) and poor public awareness and lack of sustainability data (public, mean value = 3.71 – second position; private, mean value = 3.78 – first position). Poor social service provision, inadequate well-being facilities and safety measure are put in the fifth position by the two social housing sectors and the overall mean ranking. Notwithstanding this outcome, the group of is not a surprise given that can be regarded as critical to the implementation of SSHP. One of the issues that need addressing is poor access to essential infrastructure and services because increasing population will further increase pressure on

inadequate community facilities (Barnet London Borough, 2008). The study by Hills (2007) also shows that “*in many areas originally built as flatted council estates in the UK: more than a fifth of social tenants report the presence of drug users or dealers as a serious problem; nearly a fifth of the respondents complain about the increasing level of crime, fear of being burgled, vandalism and litter; 18 per cent indicate that they always feel unsafe being alone even at home or outside in daylight and one in seven social tenants in these areas says they are very dissatisfied with their neighbourhood in terms of well-being and security measure*”.

In addition, it cannot be a surprise that social housing organisations regard lack of stakeholders’ involvement, poor social service provision, inadequate well-being and poor safety measure as the least barriers given their abstract nature in construction activities. Baharuddin et al. (2013) argue that failure to engage internal and outside stakeholders early in the construction processes is one of the common points of failure in achieving sustainability in social housing projects. Ku (2013) also argues that some of the threat to the safety of lives and property are: lack of clear responsibility for the post-construction safety by designers and contractors handling social housing projects; lack of familiarity with safety guidelines by residents; and ineffective safety laws.

Table 7.14: Mean Ranking for Key Social Barriers - Public vs. Private Sector

Key Factors	Overall		Public Sector (N =59)		Private Sector (N=179)		f-stat	Sig
	Mean	Rank	Mean	Rank	Mean	Rank		
Poor Social cohesion.	3.81	1	3.92	1	3.76	2	1.048	.307
Poor Public Awareness and Lack of Sustainability Data	3.75	2	3.71	2	3.78	1	0.195	.659
Poor Education, Skills Development and Employment Generation.	3.36	3	3.24	3	3.42	3	1.292	.257
Lack of Stakeholders’ Involvement.	3.31	4	3.19	4	3.37	4	1.244	.266
Poor Social Service Provision, Inadequate Well-Being Facilities and Safety Measure.	3.16	5	3.14	5	3.17	5	0.038	.846

Table 7.15: Mean Ranking for Key Social Barriers - According to Size of Organisation

Key Factors	Overall (N205)		Small Size (N=67)		Medium (N=60)		Large Size (N=78)		f-stat	Sig.
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank		
Poor Social cohesion.	3.80	1	3.94	1	3.78	1	3.69	1	1.267	.284
Poor Public Awareness and Lack of Sustainability Data	3.71	2	3.85	2	3.62	2	3.65	2	1.257	.287
* Poor Education, Skills Development and Employment Generation.	3.37	3	3.34	5	3.51	3	3.29	3	.805	.449
Lack of Stakeholders' Involvement.	3.29	4	3.55	3	3.08	4	3.23	4	3.703	.026
Poor Social Service Provision, Inadequate Well-Being Facilities and Safety Measure.	3.13	5	3.40	4	3.07	5	2.95	5	4.066	.019

* N = 204

The ANOVA test shows that respondents' opinions are not differ on any of the factors at 5% significance level. The outcome, therefore, can be relied on for achieving objectives of this research.

Table 7.15 shows means ranking of respondents' opinions on the key social barriers to achieving sustainability in SHP. The respondents are in categories of small, medium and large social housing organisations. The result shows that all sizes of social housing organisations, regard poor social cohesion (the overall mean value = 3.80) and poor public awareness and lack of sustainability data (the overall mean value = 3.71) are the most critical barriers. Apart from small organisations that differently rate poor education, skills development and employment generation (the overall mean value = 3.37); the lack of stakeholders' involvement (the overall mean value = 3.29); and poor social service provision, inadequate well-being facilities and safety measure (the overall mean value = 3.13), all the remaining factors have equal rating levels under medium and large organisations, similar to overall rating levels. The decision of small social housing organisations to consider lack of stakeholders' involvement above poor education, skills development and employment generation suggests that the group may be feeling the impact of the barrier on their activities more than medium and large organisations given their low level of operations. However, irrespective of ranks, all the factors have mean value above 3.00 except poor social service provision, inadequate well-being facilities and safety measure that has 2.95 as mean value under large organisations. It is possible to conclude that the factors constitute barriers to the implementation of SSHP.

The ANOVA test shows no different opinions at 5% significance level on poor social cohesion (f-stat 1.267, $p = .284$); poor public awareness and lack of sustainability data (f-stat 1.257, $p = .287$); and poor education, skills development and employment generation (f-stat 0.805, $p = .449$). Respondents' opinions differ at 5% significance level on lack of stakeholders' involvement (f-stat 3.703, $p = .026$) and poor social service provision, inadequate well-being facilities and safety measure (f-stat 4.066, $p = .019$).

Table 7.16 shows mean ranking of respondents' opinions on the key social barriers of SSHP based on the importance of sustainability/green need. The result indicates a similarity of ranking between overall mean value and the important mean value for each of the as the barrier. The ANOVA test shows that respondents' opinions are not differ at 5% significance level on all the as the barrier. The outcome also shows a good pattern of opinions on the barriers to the implementation of SSHP based on the importance of sustainability/green need. This suggests that the outcome can assist in addressing the barriers to the implementation of SSHP based on the importance of sustainability/green need to the social housing organisations.

Table 7.16: Mean Ranking for Key Social Barriers – According to the Importance of Sustainability/Green need

Factors	Overall (N=205)		Unimportant (N=17)	Moderately Important (N=47)	Important (N=141)	f-stat	Sig	
	Mean	Rank	Mean	Mean	Mean			Rank
Poor Social cohesion.	3.80	1	4.18	3.87	3.73	1	1.899	.152
Poor Public Awareness and Lack of Sustainability Data	3.71	2	3.88	3.64	3.71	2	0.444	.642
*Poor Education, Skills Development and Employment Generation.	3.37	3	3.38	3.28	3.40	3	0.284	.753
Lack of Stakeholders' Involvement.	3.29	4	3.82	3.13	3.28	4	3.006	.052
Poor Social Service Provision, Inadequate Well-Being Facilities and Safety Measure.	3.13	5	3.24	3.00	3.16	5	0.573	.565

* N = 204

7.6 SUMMARY OF THE FINDINGS AND RANKING OF KEY BARRIERS OF SSHP

This section presents summaries of respondents' opinions regarding the key factors of economic, environmental and social barriers of SSHP. Respondents are in the categories of sectors – public and non-profit private and sizes – small, medium and large social housing organisations. Findings are based on mean ranking values of the key barriers. Table 7.17 is the summary showing mean value and rank of each as the barrier based on respondents' opinions. There are eight key economic as the barriers and five each for environmental and social. The table shows how the key economic, environmental and social barriers have been grouped into critical and most critical. A critical barrier is any of the barriers that at least one group of the respondents ranked between 1 and 5. Furthermore, emerging as the most critical is any of the barriers that all the social housing groups might have ranked between 1 and 5. The outcome shows that inadequate funding; poor affordability and inadequate consideration for a whole-life value of buildings; poor legal and institutional frameworks; and inadequate research works are the most critical barriers to the implementation of SSHP. The critical economic barriers are inadequate supply and poor design and maintenance strategies.

Similarly, the most critical environmental barriers are: poor environmental protection; waste of natural resources; poor land use plan; poor accessibility and inadequate alternative transport modes; and use of poor quality materials and non-usage of renewable resources. In addition, the most critical social factors are: poor social cohesion; poor public awareness and lack of sustainability data; poor education, skills development and employment generation; lack of stakeholders' involvement; and poor social service provision, inadequate well-being facilities and safety measure. All the five key environmental and social barriers are most critical for SSHP.

Lack of appropriate technology and poor governance, development plan, provision of infrastructure and social services, including lack of incentive to providers are ranked above 5 by the respondents.

This chapter together with chapters 5 and 6 addressed part of objectives 3, 4 and 5. The next chapter completes the other part of objectives 3, 4 and 5 by discussing economic, environmental and social recommendations for the implementation of SSHP.

Table 7.17: Key Barriers of SSHP (Economic, Environmental and Social): Summary of Findings – Means Ranking/ANOVA

Category	Factors	Sector				Size of Organisations					
		Public		Private		Small		Medium		Large	
		Mean value	Rank	Mean value	Rank	Mean value	Rank	Mean value	Rank	Mean value	Rank
A	Key Economic Barriers										
Most Critical	Inadequate Funding	4.25	1	4.35	1	4.25	2	4.37	2	4.35	1
	Poor Affordability and Inadequate Consideration for a whole-life value of buildings.	4.15	2	4.35	1	4.41	1	4.38	1	4.12	2
Critical	Poor Legal and Institutional Frameworks	3.61	3	3.68	3	3.73	3	3.67	3	3.54	3
	Inadequate research works	3.35	5	3.47	5	3.37	5	3.61	4	3.30	5
	Inadequate Supply.	3.41	4	3.54	4	3.52	4	3.55	6	3.42	4
Others	Poor Design and Maintenance Strategies	3.10	8	3.47	5	3.36	6	3.60	5	3.08	7
	Lack of Appropriate Technology	3.24	6	3.42	7	3.34	7	3.51	7	3.29	6
	Poor Governance, Development Plan, Provision of Infrastructure and Social Services including Lack of Incentive to providers.	3.19	7	3.21	8	3.30	8	3.33	8	2.94	8
B	Key Environmental Barriers										
Most critical	Poor Environmental Protection	3.92	1	3.76	2	3.94	1	3.78	1	3.69	1
	Waste of Natural Resources.	3.71	2	3.78	1	3.85	2	3.62	2	3.65	2
	Poor Land Use Plan.	3.44	3	3.45	3	3.51	3	3.50	3	3.40	3
	Poor Accessibility and Inadequate Alternative Transport Modes	3.19	4	3.37	4	3.55	4	3.08	4	3.23	4
	Use of Poor Quality Materials and Non-usage of Renewable resources.	3.14	5	3.17	5	3.40	5	3.07	5	2.95	5
C	Key Social Barriers										
Most critical	Poor Social cohesion.	3.92	1	3.76	2	3.94	1	3.78	1	3.69	1
	Poor Public Awareness and Lack of Sustainability Data	3.71	2	3.78	1	3.85	2	3.62	2	3.65	2
	Poor Education, Skills Development and Employment Generation.	3.24	3	3.42	3	3.34	5	3.51	3	3.29	3
	Lack of Stakeholders' Involvement.	3.19	4	3.37	4	3.55	3	3.08	4	3.23	4
	Poor Social Service Provision, Inadequate Well-Being Facilities and Safety Measure.	3.14	5	3.17	5	3.40	4	3.07	5	2.95	5

CHAPTER 8. RECOMMENDATIONS FOR IMPROVING THE IMPLEMENTATION OF SSHP

8.1 INTRODUCTION

This chapter deals with key recommendations for improving the implementation of SSHP. The key factors are categorised according to the three pillars of SD which are: economic, environmental and social. Outcomes of data analyses are ranked in order to determine the critical levels of the factors from sectors, sizes, and the importance of sustainability/green need to the social housing organisations.

8.2 COMBINED KEY RECOMMENDATIONS USED FOR EMPIRICAL SURVEY

The key recommendations obtained through the qualitative content analysis (see Chapter 5) are combined before using them for the questionnaire survey. Reasons for combining them are given in Section 4.13.1. Table 8.1 shows key recommendations from the content analysis and combined key recommendations for implementing SSHP used for the questionnaire survey.

Table 8.1: Key Recommendations Included for the Questionnaire Survey

Key Recommendations for Implementing SSHP gathered from Content Analysis		Combined Key Recommendations for Implementing SSHP used for the Questionnaire Survey
Key Economic Recommendations		
1	Ensure effective legal and institutional frameworks.	Provision of Appropriate Policy, Legal and Institutional Frameworks to ensure a holistic approach, due process in the procurement and award of contracts, including building control laws, efficient land use planning and assessment of sustainable social housing development activities.
2	Adequate provision of fund to the sector.	
3	Ensure affordable housing costs to every income earner.	
4	Ensure adequate provision to meet housing needs of everyone.	
5	Development for mixed-uses.	
6	Ensure the use of appropriate technology.	Application of the Appropriate Technology for construction, Maintenance and Management strategies , conservation of energy and ensuring environmental protection within sustainable social housing environment.
7	Effective management and maintenance strategies.	
8	Undertake appropriate planning and design.	Appropriate Planning and Design for social cohesion, flexibility and Efficient Use of Resources by incorporating adequate social services in the
9	Ensure resources are efficiently used.	

		development programmes.
10	Promote research works.	Promote Research Works for encouraging the use of modern technology for achieving sustainability in social housing provision.
11	Good governance for ensuring that appropriate strategies are taken.	Good Governance for promoting Economic Growth and Urban Development Strategies through the provision of adequate sustainable social housing that creates employment opportunities and allows for the Provision of Incentives to Providers .
12	Constitutes an urban development strategy.	
13	Ensure the provision of incentive to providers.	
Key Environmental Recommendations		
1	Ensure environmental protection.	Ensuring Environmental Protection, Polluter Pays for the Act and energy conservation.
2	Ensure the polluter pays for the act.	
3	Ensure good accessibility.	Ensuring Good Accessibility and provision of adequate Alternative Transport Modes like pedestrian, cycling and disabled access routes and public bus services.
4	Promote the use of alternative transport modes.	
5	Use appropriate land development plan.	Use Appropriate Land Development Plan for avoiding misuse and excessive use of land, human and financial resources.
6	Ensure the use of appropriate materials for reducing life-costs.	Ensure the use of Appropriate Materials – sustainable and environmental friendly, for reducing maintenance and life-costs.
Key Social Recommendations		
1	Promote job opportunities.	Providing Employment Opportunities, Skills Acquisition and Education through apprenticeship, training, seminars, and advertisements for creating Awareness for stakeholders on the importance of achieving sustainability in social housing with the use of appropriate technology for its development, maintenance and usage.
2	Promote skills acquisition and education.	
3	Develop public awareness strategies.	
4	Ensure there is social cohesion.	Ensure Equity distribution, Social Cohesion , gender equality and Stakeholders' Participation with an Opportunity of a Choice in the development and implementation processes of social housing.
5	Encourage stakeholders' participation and opportunity of a choice.	
6	Ensure security of life and property.	Ensure Security of Life and Property for promoting residents' satisfaction and the Sense of a Place to Live .
7	Creation of the sense of a place to live.	
8	Promote adequate provision of social services.	Promote adequate Provision of Social Services like roads, water, education, health, electricity and rail for promoting sustainable social housing provision.

8.3 KEY ECONOMIC RECOMMENDATIONS FOR IMPROVING THE IMPLEMENTATION OF SSHP

Table 8.2 shows respondents' opinions on the key economic recommendations for improving the implementation of SSHP. The outcome of the analysis shows that 68.50% of the social housing organisations agree on the potentials of the key factors to assist in achieving sustainability in social housing. Contrarily, 8.10% and 23.40% of the respondents disagree and neither disagree nor agree. The result indicates that appropriate planning and design for social

cohesion, flexibility and efficient use of resources (94.18%); promote research works (73.30%); good governance for promoting economic growth and urban development strategies and allows for the provision of incentives to providers (72.82%); appropriate technology for construction, maintenance and management strategies (66.02%); and ensuring adequate funding, adequate provision for mixed uses and affordability for meeting housing needs (59.00%) are the top five economic recommendations for improving the implementation of SSHP.

On the other hand, the provision of an appropriate policy, legal and institutional frameworks is in the last position of the ranking order. Notwithstanding, Parkin et al. (2003) argue that sustainable development should be guided with effective policies that have regard for meeting needs and the well-being of the people and environment. The general believe in the literature is that the success of any form of SD strategy requires an efficient institutional framework comprises of the trained, skilled and experienced workforce (Mills, 2003).

The result also shows that appropriate technology for construction, maintenance and management strategies (66.02%) and ensuring adequate funding, adequate provision for mixed uses and affordability for meeting housing needs (59.00%) are in the 4th and 5th positions respectively. However, this outcome does not underrate the ability and importance of these groups of factors for achieving sustainability in social housing. For example, Parkin et al. (2003) argue that the use of an appropriate technology can assist to avoid pollution, promote environmental management, and improve health and safety not only on construction sites but also of residents. According to Dolata (2011), a successful sustainable housing delivery process should typically focus on effective management and maintenance strategies by ensuring that the life-cycle and maintenance needs of structures and materials are considered and planned for.

Similarly, in SSH delivery, adequate funding is expected to produce adequate supply in order to satisfy the present and future housing needs, which in turn can assist in promoting affordability. Adequate funding, social and environmental sustainability can be regarded as essential requirements for the preservation and expansion of affordable housing supply in the long run (Wiesel et al., 2012).

Based on the above arguments, the economic recommendations can be regarded as appropriate for achieving sustainability in social housing. The outcome can, therefore, assist in achieving the objectives of this research.

Table 8.2: Level of Agreement for Key Economic Recommendations

Key Factors	Disagree		Neither Disagree/Agree		Agree		Rank
	No	%	No	%	No	%	
Appropriate Planning and Design for social cohesion, flexibility and Efficient Use of Resources.	6	2.91	6	2.91	194	94.18	1
Promote Research Works.	11	5.34	44	21.36	151	73.30	2
Good Governance for promoting Economic Growth and Urban Development Strategies and allows for the Provision of Incentives to Providers.	9	4.36	47	22.82	150	72.82	3
Appropriate Technology for construction, Maintenance and Management strategies.	16	7.77	54	26.21	136	66.02	4
Ensuring Adequate Funding, Adequate Provision for Mixed Uses and Affordability for Meeting housing needs.	25	12.00	60	29.00	121	59.00	5
Provide Appropriate Policy, Legal and Institutional Frameworks.	33	16.02	78	37.86	95	46.12	6
Cumulative Total	100	8.10	289	23.40	847	68.50	

(N = 206)

Table 8.3 shows opinions of social housing practitioners in the public and private non-profit social housing organisations on the key economic recommendations for improving the implementation of SSHP. The result indicates that the two sectors formed similar opinions on the recommendations given the trend of ranking. The result shows that 66.7% and 71.7% of the public and private organisations, respectively agreed on the recommendations compared with 11.8% and 21.5% of the public and 6.6% and 21.7% of the private, respectively that disagree and neither disagree/agree. Based on majority opinions, all the economic recommendations have been regarded as important for achieving sustainability in social housing.

For example, the two sector organisations ranked appropriate planning and design for efficient use of resources and good governance for promoting economic growth and urban development strategies, including the provision of incentives to providers as 1st and 2nd respectively. These can be considered as groups of enabling recommendations that are capable of promoting the required success in SSH delivery strategies.

Starting with the appropriate planning for meeting housing needs, followed by efficient design of building structures that can promote the sustainable use of resources, complemented with good governance and political will, stakeholders can further be encouraged to give a necessary support to the achievement of sustainability in social housing. It is also necessary for housing providers to consider how houses can be designed properly and managed efficiently in a way that residents can be encouraged to live in a sustainable way (Chartered Institute of Housing, Northern Ireland, 2010). Good governance seeks to achieve sustainability in the housing sector by devising a policy that will involve the community and developers of housing in the strategy for ensuring building standards, provision of infrastructure and land, including adequate funding (Karuppanan and Sivam, 2009). What have been considered as characteristics of good governance are: strategic planning, foresight, accountability, representativeness and participatory system for allowing individuals and organisations to be effectively involved in sustainable housing projects (ODPM, UK, 2004).

Table 8.3: Level of Agreement for Key Economic Recommendations – Public vs. Private Sector

Key Factors	Public Sector (N = 59)						Private Sector (N = 120)					
	Disagree		Neither Disagree/Agree		Agree		Disagree		Neither Disagree/Agree		Agree	
	No	%	No	%	No	%	No	%	No	%	No	%
Appropriate Planning and Design for Efficient use of Resources	4	6.8	2	3.4	53	89.8	2	1.7	4	3.3	114	95.0
Good Governance for promoting Economic Growth and Urban Development Strategies including Provision of Incentives to Providers	3	5.1	11	18.6	45	76.3	5	4.2	23	19.2	92	76.7
Promote Research works	6	10.2	13	22.0	40	67.8	5	4.2	23	19.2	92	76.7
Appropriate Technology, Maintenance and Management strategies	6	10.2	16	27.1	37	62.7	8	6.7	30	25.0	82	68.3
Adequate Funding, Affordability and Adequate Provision for Mix-uses and Meeting housing needs.	9	15.3	17	28.8	33	55.9	14	11.7	30	25.0	76	63.3
Provide Appropriate Policy, Legal and Institutional Frameworks	14	23.7	17	28.8	28	47.5	14	11.7	46	38.3	60	50.0
Cumulative Total	42	11.8	76	21.5	236	66.7	48	6.6	156	21.7	516	71.7

8.3.1 Means Ranking of the Economic, Environmental and Social Recommendations for Improving SSHP

This section provides discussions on respondents' opinions on economic, environmental and social recommendations for improving the implementation of SSHP. Respondents' opinions considered in this section are in different categories: sectors - public and private non-profit organisations; sizes: small, medium and large organisations; and the importance of sustainability/green need.

Table 8.4 shows means ranking of the public and private social housing organisations' opinions on the key economic recommendations for improving SSHP. The result shows that the two sectors considered appropriate planning and design for efficient use of resources (the overall mean value = 4.50) as the first important factor. This is not a surprise given that appropriate planning, design, density and layout of the housing environment and structures within it can improve community development, levels of the social service provision and determine how people can interact with each other and the environment (Power, 2004; Pullen et al., 2010b). These factors can contribute significantly to the achievement of affordability if they are properly coordinated by the government.

The public sector gives priority to good governance for promoting economic growth and urban development strategies including provision of incentives to providers (the overall mean value = 3.90) – 2nd position compared with 3rd position by the private sector. As public agencies, the outcome suggests a clear demonstration of an understanding of the importance of the group of recommendations being the responsibility of the government for achieving sustainability in social housing. This difference in rating notwithstanding, the two social housing sectors have the same level of opinions on the group of recommendations at 5% significance level (f-stat 0.000, p = .989).

The ANOVA test show that respondents' opinions differ at 5% significance level on appropriate planning and design for efficient use of resources (f-stat 6.369, p = .012) and promote research works (f-stat 5.893, p = .016). However, all the factors can be regarded as important for achieving sustainability in social housing and the outcome can be relied on for achieving the objectives of this research.

Table 8.4: Mean Ranking for Key Economic Recommendations – Public vs. Private Sector

Key Factors	Overall (N=179)		Public Sector (N =59)		Private Sector (N=120)		f-stat	Sig
	Mean	Rank	Mean	Rank	Mean	Rank		
Appropriate Planning and Design for Efficient use of Resources	4.50	1	4.29	1	4.61	1	6.369	.012
Promote Research works	3.92	2	3.69	3	4.03	2	5.893	.016
Good Governance for promoting Economic Growth and Urban Development Strategies including Provision of Incentives to Providers	3.90	3	3.90	2	3.90	3	0.000	.989
Appropriate Technology, Maintenance and Management strategies	3.72	4	3.61	4	3.78	4	1.294	.257
Adequate Funding, Affordability and Adequate Provision for Mix-uses and Meeting housing needs.	3.59	5	3.49	5	3.63	5	1.016	.315
Provide Appropriate Policy, Legal and Institutional Frameworks	3.45	6	3.32	6	3.52	6	1.609	.206

Table 8.5 shows means ranking of opinions of small, medium and large social housing organisations on the key recommendations for improving the implementation of SSHP. The result shows that the three groups of social housing organisations equally regarded appropriate planning and design for efficient use of resources (the overall mean value = 4.50); promote research works (the overall mean value = 3.89); and good governance for promoting economic growth and urban development strategies including provision of incentives to providers (the overall mean value = 3.86) are the three most important recommendations for SSHP. The other three recommendations are not only rated lower than the first three, they are differently rated by the three sizes of social housing organisations.

Table 8.5: Mean Ranking for Key Economic Recommendations - According to the Size of Organisation

Key Factors	Overall (N205)		Small Size (N=67)		Medium (N=60)		Large Size (N=78)		f-stat	Sig.
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank		
Appropriate Planning and Design for Efficient use of Resources	4.50	1	4.51	1	4.58	1	4.50	1	0.610	.544
Promote Research works	3.89	2	3.94	2	4.08	2	3.89	2	3.755	.025
Good Governance for promoting Economic Growth and Urban Development Strategies including Provision of Incentives to Providers	3.86	3	3.91	3	3.82	3	3.86	3	0.225	.798
Appropriate Technology, Maintenance and Management strategies	3.73	4	3.76	4	3.58	5	3.73	4	1.078	.342
Adequate Funding, Affordability and Adequate Provision for Mix-uses and Meeting housing needs.	3.57	5	3.60	6	3.60	4	3.57	5	0.162	.851
Provide Appropriate Policy, Legal and Institutional Frameworks	3.41	6	3.67	5	3.37	6	3.41	6	4.070	.018

The concept of SD require that the government should provide an appropriate policy and institutional framework for maximising the efficient use of natural and physical resources and ensure that infrastructure, services and facilities are either in place or planned for (London Borough of Bexley, 2010). The result shows that all the recommendations have mean value above 3.35 for small, medium and large organisations including the overall mean. This indicates that the recommendations can be regarded as appropriate for achieving success in SSHP. Notwithstanding, respondents have different levels of opinions on the last rated three of the factors. The result also does not indicate any proper pattern of opinions based on the three sizes of organisations. However, the result can be relied on for achieving the objectives of this research.

Table 8.6 shows means ranking of the key economic recommendations for improving SSHP based on the importance of sustainability/green need. A comparison of the mean value against unimportant, moderately important and important indicates a higher mean value for each of the recommendations under important than the other two categories of responses. This suggests that the factors are important based on the importance of sustainability/green need except provision of the appropriate policy, legal and institutional frameworks. The overall mean ranking of each of the recommendations is similar with the mean value ranking for the important opinions.

Similar to the previous outcomes, appropriate policy, legal and institutional frameworks is ranked last. As aforementioned, the factor has been regarded as important for achieving sustainability in SD projects worldwide. For example, the strategic objectives of the Northern Ireland SD implementation plan 2011-14 encompass (Northern Ireland Executive, 2010): *“ensure an appropriate policy and legislative framework is in place supported by regulatory regime which will deliver statutory environmental standards in respect of air, water and other environmental pollution; promote sustainable land management; improve the quality of life of our people by planning and managing development in ways which are sustainable and which contribute to creating a better environment; and reduce the total quality of waste going to landfill”*. The ANOVA test shows that respondents’ opinions are not differ at 5% significance level on four of the factors but differ on appropriate planning and design for efficient use of resources (f-stat 3.595, p = .029) and promote research works (f-stat 3.494, p = .032). However, the outcome can be relied on for improving SSHP.

Table 8.6: Mean Ranking for Key Economic Recommendations - According to the Importance of Sustainability/Green need

Key Factors	Overall (N=205)		Unimportant (N=17)	Moderately Important (N=47)	Important (N=141)	f-stat	Sig	
	Mean	Rank	Mean	Mean	Mean			Rank
Appropriate Planning and Design for Efficient use of Resources	4.50	1	4.12	4.38	4.59	1	3.595	.029
Promote Research works	3.89	2	3.76	3.64	3.99	2	3.494	.032
Good Governance for promoting Economic Growth and Urban Development Strategies including Provision of Incentives to Providers	3.86	3	3.82	3.77	3.90	3	0.539	.584
Appropriate Technology, Maintenance and Management strategies	3.73	4	3.71	3.49	3.81	4	2.149	.119
Adequate Funding, Affordability and Adequate Provision for Mix-uses and Meeting housing needs.	3.57	5	3.59	3.36	3.64	5	1.733	.179
Provide Appropriate Policy, Legal and Institutional Frameworks	3.41	6	3.82	3.38	3.37	6	1.670	.191

8.4 KEY ENVIRONMENTAL RECOMMENDATIONS FOR THE IMPLEMENTATION OF SSHP

Respondents' opinions on the key environmental recommendations are analysed based on sectors, sizes and importance of sustainability/green need to the social housing organisations. Table 8.7 displays respondents' levels of agreement with the environmental recommendations for implementing SSHP. The result indicates that 60.3% of the respondents agree that the environmental recommendations can help to improve the implementation of SSHP compared with 29.5% and 10.2% that disagree and neither disagree/agree respectively. The order of ranking the recommendations shows preference for addressing environmental effects of the structure in terms of ensuring the use of appropriate materials (73.30%) before dealing with the surrounding environment. As part of the environmental assessment, when choosing or specifying a construction material, renewability, embodied energy, pollution, waste generation in terms of recyclability and health implication in terms of indoor pollutants should be considered (Eccleshare, 2005). Resource efficiency, durability, and occupants' health should be considered in all building material selections (Dolata, 2011).

Table 8.7: Level of Agreement for Key Environmental Recommendations

Key Factors	Disagree		Neither Disagree/Agree		Agree		Rank
	No	%	No	%	No	%	
Ensure the use of Appropriate materials.	11	5.34	44	21.36	151	73.30	1
Appropriate Land Use Development Plan	16	7.77	54	26.21	136	66.02	2
Ensuring Good Accessibility and provision of adequate Alternative Transport Modes.	25	12.13	60	29.13	121	58.74	3
Ensuring Environmental Protection, Polluter Pays for the Act	32	15.53	85	41.26	89	43.21	4
Cumulative Total	84	10.2	243	29.5	497	60.3	

(N = 206)

The result also shows that ensuring environmental protection, and polluter pays for the act (43.21%) are least in the ranking of the recommendations. Notwithstanding, ensuring the polluter pays for the act has been recognised as a means of protecting the environment in the UK. For example, one of the five guiding SD principles of the UK government is the building of a strong economy in which environmental and social costs fall on those who impose them - polluter pays (Northern Ireland Executive, 2010). An important aspect of achieving sustainability in housing development is to minimise adverse impacts on the environment, particularly during and post-construction stages for enhancing the natural surroundings

(Department of Trade and Industry, 2006). The government has considered it necessary to adopt measures aimed at reducing, re-using, recycling and recovering of waste in new developments, including sustainable drainage systems (Woodcote Neighbourhood Planning Team – WNPT, 2012). The outcome of the analysis can, therefore, be regarded as suitable for achieving sustainability in SHP.

Table 8.8 shows opinions of social housing practitioners in the public and non-profit private housing organisations on the key environmental recommendations for implementing SSHP. The result shows that 57.6% of the public social housing organisations agree that all the environmental recommendations are important for implementing SSHP compared with 11.9% and 30.5% that disagree and neither disagree/agree respectively. Similarly, 62.5%; 27.5% and 10.0% agree, neither disagree nor agree and disagree respectively among the private social housing organisations. Ranking of the recommendations by the two sectors of social housing organisations follow the same order. This shows a reliable pattern of social housing practitioners' opinions regarding the importance of the environmental recommendations for the implementation of SSHP.

8.4.1 Means Ranking of Respondents' Opinions on the key Environmental Recommendations for SSHP

This section consists of discussions on respondents' opinions on the key environmental recommendations for SSHP based on sectors – public and private; sizes – small, medium and large and the importance of sustainability/green need.

Table 8.9 shows means ranking of the public and private social housing organisations' opinions on the key environmental recommendations for the implementation of SSHP. Each of the recommendations has similar position of mean value under the two sectors. Ensuring the use of appropriate materials produces the highest overall mean value (3.92) similar to the public (mean value = 3.69) and the private sector (mean value = 4.03). This is followed by the appropriate land use development plan – 3.72; 3.61 and 3.78; ensuring good accessibility and provision of adequate alternative transport modes – 3.59; 3.49 and 3.63; and ensuring environmental protection, and polluter pays for the act – 3.34, 3.41 and 3.31 respectively for the overall mean, public sector and private sector respectively.

Table 8.8: Level of Agreement for Key Environmental Recommendations – Public vs. Private Sector

Key Factors	Public Sector (N = 59)						Private Sector (N = 120)					
	Disagree		Neither Disagree/Agree		Agree		Disagree		Neither Disagree/Agree		Agree	
	No	%	No	%	No	%	No	%	No	%	No	%
Ensure the use of Appropriate materials.	6	10.2	13	22.0	40	67.8	5	4.2	23	19.2	92	76.6
Appropriate Land Use Development Plan	6	10.2	16	27.1	37	62.7	8	6.7	30	25.0	82	68.3
Ensuring Good Accessibility and provision of adequate Alternative Transport Modes.	9	15.3	17	28.8	33	55.9	14	11.7	30	25.0	76	63.3
Ensuring Environmental Protection, Polluter Pays for the Act	7	11.8	26	44.1	26	44.1	21	17.5	49	40.8	50	41.7
Cumulative Total	28	11.9	72	30.5	136	57.6	48	10.0	132	27.5	300	62.5

Table 8.9: Mean Ranking for Key Environmental Recommendations – Public vs. Private Sector

Key Factors	Overall (N=179)		Public Sector (N =59)		Private Sector (N=120)		f-stat	Sig
	Mean	Rank	Mean	Rank	Mean	Rank		
Ensure the use of Appropriate materials.	3.92	1	3.69	1	4.03	1	5.893	.016
Appropriate Land Use Development Plan	3.72	2	3.61	2	3.78	2	1.294	.257
Ensuring Good Accessibility and provision of adequate Alternative Transport Modes.	3.59	3	3.49	3	3.63	3	1.016	.315
Ensuring Environmental Protection, Polluter Pays for the Act	3.34	4	3.41	4	3.31	4	.465	.496

The ANOVA test indicates that although ensuring the use of appropriate materials is in the highest position, opinions of respondents differ on it at 5% significance level (f-stat 5.893, p = .016) but not differ on the rest three recommendations. However, the use of appropriate materials remains important for achieving sustainability in social housing projects. Generally, the result shows that all the recommendations have overall mean value above 3.30, including mean value under public and private sectors. Given the similarity and the high level of ranking the key environmental recommendations by the two sectors, it can be concluded that the outcome can be relied on for implementing SSHP.

Table 8.10 shows means ranking of respondents' opinions on the key environmental recommendations for implementing SSHP. The analysis is based on sizes of the social housing organisations, i.e. small, medium and large. The result shows that the various organisations based on sizes rank the recommendations differently; however, the overall mean ranking is similar to the mean value ranking of the small size organisations. The small and medium organisations rank: ensuring the use of appropriate materials as first among others (mean value = 3.94 and 4.08 respectively) and second (mean value = 3.71) under large organisations. This outcome suggests that large organisations prefer to first address environmental issues in SHP through the appropriate land use development plan strategy (mean value = 3.81) than other recommendations.

Ensuring environmental protection and polluter pays for the act (overall mean value = 3.36) is the least ranked by the three sizes of social housing organisations. Notwithstanding, the need for addressing environmental issues constitutes a major reason for establishing The World Commission on Environment and Development (WCED), generally referred to as the Brundtland Commission in 1987 by the UN. In addition, the general understanding is that,

making the polluter to pay for the act can reduce environmental issues and prevents costs from falling on the society at large. This is because environmental pollution, natural resource depletion and social cost occur because those responsible are not bearing the consequences of their actions (DTI, 2006). The ANOVA test shows that respondents' opinions are not differ on all the recommendations except on ensuring the use of appropriate materials (f-stat 3.755, $p = .025$). Considering the mean value ranking between small, medium and large social housing organisations, a good order of importance may not necessarily be established for the environmental recommendations based on sizes.

Table 8.11 shows means ranking of respondents' opinions regarding the relationship between the importance of sustainability/green need and the environmental recommendations for implementing SSHP. The outcome shows that the overall mean value ranking is similar to the mean value ranking under important consideration for sustainability/green need. The similarity in the order of ranking the recommendations establishes a strong level of importance of sustainability/green need to social housing practitioners. Ensuring the use of appropriate materials comes first above other recommendations under the two ranking groups (overall mean value = 3.89 and important mean value = 3.99). The outcome also indicates that a comparison between mean value of respondents' opinions (unimportant, moderately important and important) for each recommendation shows that the mean value under important opinion is generally higher than those of the unimportant and moderately important.

The ANOVA test shows that respondents' opinions differ on ensuring the use of appropriate materials (f-stat 3.494, $p = .032$) at 5% significance level. Respondents' opinions, however, are not differ on appropriate land use development plan (f-stat 2.149, $p = .119$); ensuring good accessibility and provision of adequate alternative transport modes (f-stat 1.733, $p = .179$); and ensuring environmental protection, polluter pays for the act (f-stat 0.112, $p = .894$) at 5% significance level.

Based on the various outcomes, the environmental recommendations can be regarded as significant for achieving sustainability/green need. The pattern of response also shows that sustainability/green need is important to the two sectors of the social housing organisations.

Table 8.10: Mean Ranking for Key Environmental Recommendations - According to the Size of Organisation

Key Factors	Overall (N205)		Small Size (N=67)		Medium (N=60)		Large Size (N=78)		f-stat	Sig.
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank		
Ensure the use of Appropriate materials.	3.89	1	3.94	1	4.08	1	3.71	2	3.755	.025
Appropriate Land Use Development Plan	3.73	2	3.76	2	3.58	3	3.81	1	1.078	.342
Ensuring Good Accessibility and provision of adequate Alternative Transport Modes.	3.57	3	3.60	3	3.60	2	3.53	3	0.162	.851
Ensuring Environmental Protection, Polluter Pays for the Act	3.36	4	3.55	4	3.33	4	3.21	4	2.724	.068

Table 8.11: Mean Ranking for Key Environmental Recommendations – According to Importance of Sustainability/Green need

Key Factors	Overall (N=205)		Unimportant (N=17)	Moderately Important (N=47)	Important (N=141)	f-stat	Sig	
	Mean	Rank	Mean	Mean	Mean			Rank
Ensure the use of Appropriate materials.	3.89	1	3.76	3.64	3.99	1	3.494	.032
Appropriate Land Use Development Plan	3.73	2	3.71	3.49	3.81	2	2.149	.119
Ensuring Good Accessibility and provision of adequate Alternative Transport Modes.	3.57	3	3.59	3.36	3.64	3	1.733	.179
Ensuring Environmental Protection, Polluter Pays for the Act	3.36	4	3.29	3.40	3.35	4	0.112	.894

8.5 KEY SOCIAL RECOMMENDATIONS FOR THE IMPLEMENTATION OF SSHP

This section comprises of discussions on the key social recommendations for implementing SSHP. The discussions are in three categories based on opinions of social housing practitioners from the perspectives of public and private sectors; sizes in terms of small, medium and large and importance of sustainability/green need.

8.5.1 Frequencies of Respondents' Opinions on Key Social Recommendations for Implementing SSHP

Table 8.12 describes respondents' levels of agreement on the key social factors recommended for implementing SSHP. The result shows that 60.1% of the respondents agree that the recommendations can be used for achieving sustainability in SHP compared with 12.6% and 27.3% that disagree and neither disagree/agree respectively. Security of life and property for promoting residents' satisfaction and the sense of a place to live (82.4%) followed by the provision of employment opportunities, skills acquisition and education for creating public awareness (72.82%) are the highest rated recommendations. This suggests that security and welfare of residents including their belongings are considered as priority in achieving sustainability in SHP from social perspective. It also supports the claim that the concept of SD seeks to encourage a healthy and sustainable environment for housing development, in which people can feel secure in terms of crime reduction, live independent lives, and take pride in their homes (Simpson and MacDonald, 2003; Basildon Council, UK, 2011).

Table 8.12: Level of Agreement for Key Social Recommendations

Key Factors	Disagree		Neither Disagree/Agree		Agree		Rank
	No	%	No	%	No	%	
Security of Life and Property for promoting residents' satisfaction and the Sense of a Place to Live.	12	5.83	25	12.13	169	82.04	1
Providing Employment Opportunities, Skills Acquisition and Education for creating Public Awareness.	9	4.37	47	22.81	150	72.82	2
Ensure Equity in distribution, Social Cohesion, gender equality and Stakeholders' Participation with an Opportunity of a Choice.	32	15.54	85	41.26	89	43.20	3
Promote adequate Provision of Social Services.	51	24.76	68	33.01	87	42.23	4
Cumulative Total	104	12.6	225	27.3	495	60.1	

Similarly, Tan (2011); Aluko (2011) advocate for the need to provide housing in the appropriate locations accompanied by investment in infrastructure and retaining existing and creating local employment opportunities.

The outcome shows that ensuring equity in distribution, social cohesion, gender equality and stakeholders' participation with an opportunity of a choice (43.20%); and promoting adequate provision of social services (42.23%) are rated last among the four social recommendations. Notwithstanding, there has been a growing recognition of equity, social cohesion, and stakeholders' participation in SHP. Woodcraft et al. (2011) argue that issues of isolation and mental health are often caused by inadequate transport connections that isolate people from friends, family members and job opportunities. They also identified lack of opportunities for residents to influence planning and development decisions as what make it difficult to attract and retain residents in some new communities. Wiesel et al. (2012) claimed that participation in the development and management of an affordable housing project is an avenue for residents to influence decisions that directly affect their lives. Inclusive forms of sustainable housing should provide residents with opportunities for positive social connections and interactions across tenure, economic, cultural and religion differences (Hanna and Webber, 2005; Wiesel et al., 2012).

Table 8.13 shows key social recommendations for implementing SSHP based on public and private sectors of social housing organisations. The outcome indicates that 58.9% and 63.3% of the public and private organisations respectively agree that the social recommendations can be used for implementing SSHP. This is compared with 12.3% and 28.8% of the public and 13.6% and 23.1% of the private that disagree and neither disagree/agree respectively. Out of the four recommendations, the two sectors similarly considered security of life and property for promoting residents' satisfaction and the sense of a place to live (public 86.4%; private 83.3%); and the provision of employment opportunities, skills acquisition and education for creating public awareness (public 76.3%; private 76.7%) as first and second among the four recommendations respectively.

However, the remaining two recommendations swapped between third and fourth positions. The private rates promoting adequate provision of social services as third (51.7%) but considers ensuring equity in distribution, social cohesion, gender equality and stakeholders' participation with an opportunity of a choice as fourth. This suggests that private organisations prefer to give less recognition to sustainability elements that can increase overhead costs. This can be a major reason for governments at all levels to be promoting equal distribution, social cohesion, gender equality and stakeholders' participation in social housing delivery programmes. The provision of adequate social services by the government can encourage private participation in SSHP.

Table 8.13: Level of Agreement for Key Social Recommendations – Public vs. Private Sector

Key Factors	Public Sector (N = 59)							Private Sector (N = 120)						
	Disagree		Neither Disagree/Agree		Agree			Disagree		Neither Disagree/Agree		Agree		Rank
	No	%	No	%	No	%	Rank	No	%	No	%	No	%	
Security of Life and Property for promoting residents' satisfaction and the Sense of a Place to Live.	4	6.8	4	6.8	51	86.4	1	8	6.7	12	10.0	100	83.3	1
Providing Employment Opportunities, Skills Acquisition and Education for creating Public Awareness.	3	5.1	11	18.6	45	76.3	2	5	4.5	23	19.2	92	76.7	2
Ensure Equity in distribution, Social Cohesion, gender equality and Stakeholders' Participation with an Opportunity of a Choice.	7	11.9	26	44.1	26	44.1	3	21	17.5	49	40.8	50	41.7	4
Promote adequate Provision of Social Services.	15	25.4	27	45.8	17	28.8	4	31	25.8	27	22.5	62	51.7	3
Cumulative Total	29	12.3	68	28.8	139	58.9		65	13.6	111	23.1	304	63.3	

For example, the London Borough of Bexley (2010) accepted that the government should provide adequate and accessible services and facilities as part of new development, extend the existing ones and provide better access from all parts of the borough to services and facilities. The government can promote settlements' sustainability by ensuring the provision of quality social services like public health, transportation, education, security and sports facilities (Karuppanan and Sivam, 2009; Pattinaja and Putuhena, 2010).

Irrespective of differences of respondents' opinions regarding some of the social recommendations, the outcome can be used as a basis for implementing SSHP.

8.5.2 Means Ranking of Respondents' Opinions on Social Recommendations for Implementing SSHP

Table 8.14 shows mean values and ranking of respondents' opinions on social recommendations for implementing SSHP based on sectors of social housing organisations. Similar to the previous findings, the two sectors still rank security of life and property for promoting residents' satisfaction and the sense of a place to live (the overall means value = 4.11) and provision of employment opportunities, skills acquisition and education for creating public awareness (the overall mean value = 3.90) as first and second respectively. The two sectors also give different considerations for promoting adequate provision of social services (the overall mean value = 3.35) and ensuring equity in distribution, social cohesion, gender equality and stakeholders' participation with an opportunity of a choice (the overall mean value = 3.34). The outcome notwithstanding, each of the four factors has mean value above 3.00.

The ANOVA test shows that the two sectors' opinions are not differ at 5% significance level on three of the factors except on promoting adequate provision of social services (f-stat 4.215, p = .042). Many literature findings have shown that the provision of social services in a sustainable way in terms of alternative transport modes like cycling, public transport that minimises the use of personal cars and energy supply from renewable sources is a means of reducing the impact of housing development on the environment. For example, one of the sustainability objectives of the Vale of White Horse District Council, UK (2012) is to ensure that housing development is accompanied by the provision of necessary infrastructure and social services in the right place at the right time for meeting people's needs and creates sustainable communities. The outcome can, therefore, be regarded as useful for the implementation of SSHP.

Table 8.15 describes the mean values and ranking of the key social recommendations for implementing SSHP based on small, medium and large social housing organisations. Security of life and property for promoting residents' satisfaction and the sense of a place to live (overall mean value = 4.08) and provision of employment opportunities, skills acquisition and education for creating public awareness (overall mean value = 3.86) are the highest two rated

recommendations for implementing SSHP. Apart from medium size organisations, the pattern of ranking all the key social recommendations by small and large organisations is similar to that of the overall mean value. The ANOVA test shows that respondents' opinions are not differ on the social recommendations at 5% significance level except for the promotion of adequate provision of social services (f-stat 4.073, p = .018). The outcome shows that all the overall mean values and mean values under small, medium and large organisations for the recommendations are above 3.00.

Table 8.16 shows mean values and ranking of respondents' opinions on social recommendations based on the importance of sustainable/green need. From the outcome, security of life and property for promoting residents' satisfaction and the sense of a place to live (the overall mean value = 4.08) ranks first followed by the provision of employment opportunities, skills acquisition and education for creating public awareness (the overall mean value = 3.86) as second. Ensuring equity in distribution, social cohesion, gender equality and stakeholders' participation with an opportunity of a choice (the overall mean value = 3.36) is rated third; and the promotion of adequate provision of social services (the overall mean value = 3.32) is considered as fourth in the ranking order.

The mean value of each recommendation under important opinion group is higher than all the mean values under unimportant and moderately important groups respectively. This indicates that the social recommendations have been generally considered as important for meeting sustainability/green need. The outcome shows that the social recommendations can assist in promoting sustainable living if residents: live in decent social housing obtained without any form of discrimination; live in an environment that has adequate provision of social services; have access to employment opportunities and enjoy a secured housing environment.

The ANOVA test shows that respondents' opinions are not differ on all the social recommendations at 5% significance level.

Based on the respondents' opinions on the importance of the key social recommendations, the outcome can be relied on for achieving the objectives of this research.

Table 8.14: Mean Ranking for Key Social Recommendations – Public vs. Private Sector

Key Factors	Overall (N= 179)		Public Sector (N =59)		Private Sector (N=120)		f-stat	Sig
	Mean	Rank	Mean	Rank	Mean	Rank		
Security of Life and Property for promoting residents' satisfaction and the Sense of a Place to Live.	4.11	1	4.08	1	4.12	1	0.049	.825
Providing Employment Opportunities, Skills Acquisition and Education for creating Public Awareness.	3.90	2	3.90	2	3.90	2	0.000	.989
Promote adequate Provision of Social Services.	3.35	3	3.10	4	3.47	3	4.215	.042
Ensure Equity in distribution, Social Cohesion, gender equality and Stakeholders' Participation with an Opportunity of a Choice.	3.34	4	3.41	3	3.31	4	0.465	.496

Table 8.15: Mean Ranking for Key Social Recommendations – According to the Size of Organisation

Key Factors	Overall (N205)		Small Size (N=67)		Medium (N=60)		Large Size (N=78)		f-stat	Sig.
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank		
Security of Life and Property for promoting residents' satisfaction and the Sense of a Place to Live.	4.08	1	4.10	1	4.00	1	4.13	1	0.383	.682
Providing Employment Opportunities, Skills Acquisition and Education for creating Public Awareness.	3.86	2	3.91	2	3.82	2	3.86	2	0.225	.798
Ensure Equity in distribution, Social Cohesion, gender equality and Stakeholders' Participation with an Opportunity of a Choice.	3.36	3	3.55	3	3.33	4	3.21	3	2.724	.068
Promote adequate Provision of Social Services.	3.32	4	3.36	4	3.60	3	3.08	4	4.073	.018

Table 8.16: Mean Ranking for Key Social Recommendations – According to Importance of the Sustainability/Green need

Key Factors	Overall (N=205)		Unimportant (N=17)	Moderately Important (N=47)	Important (N=141)		f-stat	Sig
	Mean	Rank	Mean	Mean	Mean	Rank		
Security of Life and Property for promoting residents' satisfaction and the Sense of a Place to Live.	4.08	1	3.88	3.91	4.16	1	1.881	.155
Providing Employment Opportunities, Skills Acquisition and Education for creating Public Awareness.	3.86	2	3.82	3.77	3.90	2	0.539	.584
Ensure Equity in distribution, Social Cohesion, gender equality and Stakeholders' Participation with an Opportunity of a Choice.	3.36	3	3.29	3.40	3.35	4	0.112	.894
Promote adequate Provision of Social Services.	3.32	4	3.35	3.04	3.41	3	2.043	.132

8.6 SUMMARY OF FINDINGS AND RANKING OF THE KEY ECONOMIC, ENVIRONMENTAL AND SOCIAL RECOMMENDATIONS FOR SSHP

This section summarises respondents' opinions on the economic, environmental and social recommendations for improving the implementation of SSHP. Opinions of the social housing practitioners in public and private sectors and their sizes – small, medium and large are considered in summarising the findings. Therefore, Table 8.17 provides the mean value and rank of each of the key recommendations, grouped into economic, environmental and social factors. The Table also shows the grouping of the recommendations into the most critical and critical categories. How the recommendations are grouped is explained as follows:

Similar to the summaries in chapters 6 and 7, any key economic, environmental or social recommendation that is ranked between 1-5 by all respondents across sectors and sizes is considered as one of the most critical recommendations. Similarly, any key economic, environmental or social recommendation ranked between 1-5 by at least one group of respondent under sectors and sizes is regarded as a critical recommendation. Any recommendation that is ranked above 5 is in the third group (others).

This chapter together with chapters 5, 6 and 7 addressed objectives 3, 4 and 5. The next chapter uses the findings from these chapters to develop a framework for the implementation of SSHP.

Table 8.17: Key Economic, Environmental and Social Recommendations for SSHP: Summary of Findings

Factors		Sectors						Sizes			
		Mean value	Rank	Mean value	Rank	Mean value	Rank	Mean value	Rank	Mean value	Rank
		Public		Private		Small		Medium		Large	
Key Economic Recommendations											
Most Critical	Appropriate Planning and Design for Efficient use of Resources	4.29	1	4.61	1	4.51	1	4.58	1	4.50	1
	Promote Research works	3.69	3	4.03	2	3.94	2	4.08	2	3.89	2
	Good Governance for promoting Economic Growth and Urban Development Strategies including Provision of Incentives to Providers	3.90	2	3.90	3	3.91	3	3.82	3	3.86	3
	Appropriate Technology, Maintenance and Management strategies	3.61	4	3.78	4	3.76	4	3.58	5	3.73	4
Critical	Adequate Funding, Affordability and Adequate Provision for Mix-uses and Meeting housing needs	3.49	5	3.63	5	3.60	6	3.60	4	3.57	5
	Provide Appropriate Policy, Legal and Institutional Frameworks	3.32	6	3.52	6	3.67	5	3.37	6	3.41	6
Key Environmental Recommendations											
Most Critical	Ensure the use of Appropriate materials	3.69	1	4.03	1	3.94	1	4.08	1	3.71	2
	Appropriate Land Use Development Plan	3.61	2	3.78	2	3.76	2	3.58	3	3.81	1
	Ensuring Good Accessibility and provision of adequate Alternative Transport Modes.	3.49	3	3.63	3	3.60	3	3.60	2	3.53	3
	Ensuring Environmental Protection, Polluter Pays for the Act	3.41	4	3.31	4	3.55	4	3.33	4	3.21	4
Key Social Recommendations											
Most Critical	Security of Life and Property for promoting residents' satisfaction and the Sense of a Place to Live	4.08	1	4.12	1	4.10	1	4.00	1	4.13	1
	Providing Employment Opportunities, Skills Acquisition and Education for creating Public Awareness	3.90	2	3.90	2	3.91	2	3.82	2	3.86	2
	Promote adequate Provision of Social Services	3.10	4	3.47	3	3.36	4	3.60	3	3.08	4
	Ensure Equity in distribution, Social Cohesion, gender equality and Stakeholders' Participation with an Opportunity of a Choice	3.41	3	3.31	4	3.55	3	3.33	4	3.21	3

CHAPTER 9. A FRAMEWORK FOR IMPLEMENTING SSHP

9.1 INTRODUCTION

The rationale for this chapter is to develop a framework for improving the implementation of the provision of SSH. The framework highlights critical constituents of SSH, barriers to its implementation, and recommendations for improving the implementation. Furthermore, the framework identifies the key players and their roles in the provision of SSH. The development of the framework is based on findings from the extant review of literature, content analysis and the empirical survey. As a whole, this chapter helps to finalise the achievement of the aim and objectives of this research.

9.2 THE NEED FOR A FRAMEWORK FOR SSHP

A *“framework is a group of concepts that are broadly defined and systematically organised to provide a focus, a rationale, and a tool for the integration and interpretation of information”* (Mosby’s Medical Dictionary, 2009). According to Jabareen (2009), a framework *“is a network, or “a plane,” of interlinked concepts that together provide a comprehensive understanding of a phenomenon or phenomena”*. Similarly, *“concepts that constitute a framework, support one another, articulate their respective phenomena, and establish a framework-specific philosophy”* (Jabareen, 2009). Accordingly, concepts that constitute the framework for implementing SSHP are based on constituents, barriers and recommendations for improvement from the three pillars of SD – economic, environmental and social, which interlink and support one another.

A framework seeks to provide *“the structure/content for the whole study, based on literature, personal experience and develops as participants’ views through which issues are gathered and analysed”* (Vaughan, 2008). Therefore, the development of the framework for implementing SSHP is based on findings from the literature, content analysis and opinions of the public and private social housing associations in England through which relevant data are gathered and analysed. The overall findings as they relate to the three pillars of SD (economic, environmental and social) are, therefore, used in presenting the framework. The framework provides a classification system for identifying and categorising the range of key constituents that support achievement of sustainability in SHP in terms of the economic, environmental and social constituents and recommendations for implementing SSHP. It also reveals certain critical barriers that can impair the achievement of SSHP if not properly addressed. The framework, therefore, presents a logical approach for achieving sustainability in SHP.

Emphasising the need for affordable, adequate funding and ensuring adequate supply, etc. for meeting housing needs in a framework for implementing SSHP is a vital tool for promoting sustainability in the sector. Many literature findings have shown the need for accessible financial streams, affordability and provision for achieving sustainability in the housing sector (Emsley et al., 2008; Karuppanan and Sivam, 2009). Economic design and provision of social infrastructure are similarly regarded as essential elements of SHP, which a framework can seek to provide. Therefore, a framework that incorporates key constituents, barriers and recommendations for implementing SSHP can serve as a tool for establishing the importance of achieving sustainability in the social housing sector.

Findings from the literature and empirical survey have shown that SSHP is limited by many economic, environmental and social sustainability issues (Section 5.3 and Chapter 7). The economic barriers to the provision of SSH take place in a different social, political and economic environment. Many of these barriers relate to issues such as the supply of housing, funding, affordability, technology, governance, legal and institutional structure. For example, some parts of the UK (e.g. South Manchester, North East Cheshire, Kirklees District Council area, and Essex) are experiencing higher demand compared with the supply, which has been regarded as a major reason for affordability problems, particularly for low-income earners (Kirklees District Council, 2008; Uttlesford District Council, 2008). Similarly, there are various issues relating to the housing delivery system, which could undermine adequate provision of housing given that the public and private house builders have a tendency to give low priority to affordable housing programmes (Tan, 2011). For example, there is the evidence from Australia that there is a large shortage of affordable housing and accessible to those on the lowest 40% of household incomes (Wiesel et al., 2012). The lack of clarity and power to enforce sustainable measure and legislations could contribute to the failure of many social landlords to update their sustainability activities (Dodson and Smith, 2003; Williams and Dair, 2006; Cooper and Jones, 2009).

According to Du Plessis (2007), the “*rapid rate of urbanisation, deep poverty, social inequality, low skills levels, institutional incapacity, weak governance, an uncertain economic environment and environmental degradation*” are creating some challenging environmental issues in residential neighbourhoods. Due to the poor land use plan, sustainability issues in terms of flooding, pollution, environmental degradation, extensive slum and squatter settlements, poor location and unattractive structures, including lack of adequate amenities and facilities are some of the major challenges for achieving sustainability in the social housing sector (Du Plessis, 2007; Tan, 2011; Dolata, 2011; Vale of White Horse District Council, UK, 2012).

Cooper and Jones (2009) reveal that SD seeks to promote living within environmental limits and preserving the natural resources required for meeting the housing needs of the present and future generations. Similarly, Williams and Dair (2006) advocate the use of recyclable materials and renewable energy, including design for minimising waste during construction. However, Zakaria and Yang (2005) observe that lack of environmental guidelines and policies affect the effectiveness of environmental protection strategies being proposed through SD.

From the social perspective, the poor healthcare, social well-being and inadequate provision of social facilities deprive social housing residents, particularly children and young people of the opportunities for cultural, leisure, community participation, sports and other activities (Barnet London Borough, 2008). There are instances whereby poor healthy living is being promoted through crime and fear of crime causing barriers to sustainable communities as residents are not enjoying a high standard of living in their homes and localities (London Borough of Lambeth, 2010). The study by Long and Hutchins (2003) shows that residents usually cited criminality and anti-social activities as the most important threat to life issues in some communities.

Therefore, addressing safety issues is essential for achieving sustainability in SHP. Lack of mixed housing types with diverse tenure for accommodating diverse types of households majorly contributes to the poor social and community cohesion and result in stigmatising social housing as poor or low-income homes (Hanna and Webber, 2005; Kirklees Council, UK, 2008). The lack of relevant sustainability information and proper education on the potential benefits of sustainable living are major factors contributing to the poor public awareness.

The above discussions show that there is the need for an improved understanding of the constituents of SSHP vis-à-vis barriers to the implementation given the importance of adequately meeting housing needs. The discussions suggest the need for developing a template or instrument that can assist in achieving the sustainability agenda of the government, particularly through the social housing sector. A significant achievement can be made, if sustainability issues militating against the implementation of SSHP are properly addressed from the perspectives of constituents, barriers and recommendations based on economic, environmental and social factors as being proposed in the framework.

Findings from the previous sections have shown that a framework of this kind should be clearly understood by every stakeholder and serves as a dynamic tool that can help to achieve sustainability in SHP. The flexibility requirement should make the framework easily adaptable to the political, economic, social and cultural differences in the society. Above all, it should be approached from the perspective of meeting the housing needs of low and moderate-income households.

Significantly, the framework (see Table 9.2) together with the proposed definition of social housing (see Section 2.5) and the conceptual model of SSHP (see Section 5.5 and Figure 5.2) can assist in providing necessary information and guidelines for achieving sustainability in SHP. The following sections provide limitations of existing frameworks and discuss the proposed framework for implementing SSHP.

9.3 EXISTING RELATED FRAMEWORKS FOR SSHP

The survey of related studies on achieving sustainability in SHP reveals some existing frameworks in relation to policy guidelines, management, development guides, performance assessment and evaluation and affordability tools. Table 9.1 presents these frameworks.

Table 9.1: Related Frameworks for Achieving Sustainability in Social (Public) Housing

Author (s)	Date	Title	Focus
Ihuah, P.W. and Eaton, David	2013	A Framework for Sustainable Management of Social (Public) Housing Estates in Nigeria	Management of Social Housing Estate
UN-Habitat	2012	Sustainable Housing for Sustainable Cities : A Policy Framework for Developing Countries	A Policy Framework
Atkins, C.	2012	Pathways to a New Victorian Social Housing Framework	Addressing Affordability Issues in SHP
Ibem, E. O. and Azuh, D.E.	2011	Framework for Evaluating the Sustainability of Public Housing Programmes in Developing Countries	Framework for Evaluation
Leblanc, H. et al.	2010	Developing a Knowledge Management Framework to Promote SSH Refurbishment Practices	Identification of drivers for refurbishment and competitive procurement strategies
Pullen et al.	2010	Developing an assessment Framework for Affordable and Sustainable Housing	Used Performance Indicators for Assessing Affordable and Sustainable Housing
Turcotte, D A. and Geiser, K.	2010	A Framework to Guide Sustainable Housing Development	The use of Sustainable Housing Development Principles as Definitional and Evaluative Tool
Johnson, P.	2006	Decision Models for Affordable Housing and Sustainable Community Development	Decision model to improve policy responses to sustainability issues e.g. affordability, social segregation and urban sprawl.
Nair et al.	2005	A Conceptual Framework for Sustainable-Affordable Housing for the Rural Poor in Less Developed Economies	Effective policies to address Sustainable-Affordable habitat issues relating to the poor in less developed economies.

Researchers have identified various issues in sustainable housing development and have argued over a diverse means of addressing them, particularly through the application of frameworks.

Johnson (2006) identified political considerations, restrictive administrative guidelines and inadequate funding as some challenges confronting practitioners in urban housing and community development. Johnson therefore proposed prescriptive decision models with potential for improving policy responses for addressing related issues of affordability, poor social cohesion, poor economic development and urban sprawl. However, “*the conceptual framework, motivated by practice as well as theory, for the use of decision models to address issues of affordability and sustainability in housing and community development*” does not align properly with economic, environmental and social elements of SD.

Nair et al. (2005) developed a policy framework incorporating sustainable-affordable habitat. They advocate the need to address sustainability issues like: “(i) *socio cultural needs – equal distribution, provision of infrastructure and services, stakeholders’ participation and community involvement; (ii) economic - affordability, employment opportunities, poverty reduction and adequate supply; (iii) technology – adapted to the use of local resources, materials, construction techniques, functionality, durability and takes advantage of local unskilled labour; and (iv) environmental – consideration for environmental limits, pollution, waste generation, consumption of non-renewable resources, renewable energy and recyclable materials*”. Despite these elements of sustainable-affordable habitat, the framework does not contain barriers to the implementation or assigned responsibilities to stakeholders as well as strategies for evaluating outcomes.

The UN-Habitat (2012) presents a policy framework ‘for the realisation of sustainable and affordable housing’ with key principles such as an appropriate institutional, legal and regulatory structures; good governance; use of tools like land use planning, land provision, adequate funding and capacity building; and monitoring. The framework, however, fails to identify stakeholders and their responsibilities or performance evaluation criteria of sustainable housing for sustainable cities.

The social housing framework considered by Atkins (2012) addresses affordability problems of low-income households. The framework makes a proposal for an adequate supply of housing by improving private rental, including planning and land approaches, and advocates for increased resources available to households for accessing decent housing by reducing the cost of housing debt, allowing alternative rental models that generate greater returns, favourable taxation or subsidies and provision of finance for developments that add value to providers’ portfolios. This framework does not cover all aspects of SSHP, particularly economic, environmental and social elements; constituents, barriers and recommendations for implementations; stakeholders’ responsibilities and performance evaluation strategies.

Through a background literature on affordability and sustainability, Pullen et al. (2010a) identify some performance indicators like efficient energy provision, appropriate building materials, construction methods, affordability, safety, the quality of life and place and health. Taking the research further, they developed ‘an assessment framework for affordable and sustainable housing’. However, the framework does not cover in-depth sustainability elements of SSHP, barriers to implementation and recommendations for improvement. Stakeholders and responsibilities are not part of the findings for developing the framework.

Ibem and Azuh (2011) observe that issues of the provision and demand of housing can be linked to the lack of multi-dimensional evaluation frameworks ‘for assessing the long term environmental, technological, economic, social and cultural consequences of public housing programmes’. Therefore, Ibem and Azuh (2011) developed a framework to promote housing and environmental quality, quality of life, preserve cultural heritage and technical feasibility for evaluating the sustainability of public housing programmes. Although the framework provides a total 32 parameters for sustainability assessments of public housing programmes, it fails to give sustainability barriers and recommendations for implementing SSHP. Similar to others, the framework does not cover stakeholders and their responsibilities as well as performance evaluation criteria.

Turcotte and Geiser (2010) formulate 10 sustainable housing development principles from the literature and use the principles to develop a framework as a definitional and evaluative tool for understanding and evaluating sustainable housing projects. The 10 principles are: *“incorporating green design; provision of safe internal conditions; encourage affordable distribution/consumption of housing resources; support a financial viability for housing producers; promote occupant-neighbourhood linkage; maximise access to healthy environments and support services; support worker well-being; preserve cultural and housing heritage; foster participation and harmonious decision-making; and increase adaptability and flexibility”*. The aforementioned development principles fail to align properly with economic, environmental and social elements of SD. The framework also does not incorporate stakeholders and their responsibilities and performance evaluation criteria for implementing SSHP.

Leblanc et al. (2010) attribute the poor sustainable refurbishment practices within social housing sector to inadequate data and ineffective communication of information and knowledge about sustainability among social housing practitioners. In order to address the issue, a framework was developed for ensuring the sharing of sustainability information and knowledge for housing refurbishment projects. The framework only covers 8 main drivers for refurbishment and provides no other sustainability data for implementing SSHP.

Stakeholders' participation, efficient building maintenance and appropriate estate management practices have been identified as essential requirements for achieving sustainability in social housing estates (Ihuah and Eaton, 2013). They argue that efficient sustainable management of social housing can enhance decent homes, and help to maintain a social, economic and environmental quality over their whole service life-cycle. Therefore, a framework for adopting the principles of sustainability that combine effective building maintenance and appropriate estate management practices was proposed by Ihuah and Eaton (2013). Similar to aforementioned findings, this framework lacks in-depth data for implementing SSHP.

A synthesis of existing frameworks establishes a strong literature evidence to conclude that serious efforts have been made for addressing sustainability issues in social/public housing provision. Nonetheless, there are noteworthy limitations to the various studies in terms of in-depth coverage of the elements that constitute sustainable housing development for meeting housing needs. Major shortcomings of the existing frameworks can be summarised as follows:

- Lack of comprehensive findings about what constitute SSHP, barriers to the implementation and recommendations for improvement;
- Sustainability issues are not properly aligned with SD pillars – economic, environmental and social;
- Lack of the opportunity to concurrently consider constituents, barriers and recommendations for implementing SSHP;
- Non-identification of stakeholders and responsibilities in the implementation of SSHP; and
- Inadequate criteria for evaluating stakeholders' performance for in-project and post-project reviews.

Therefore, based on the aforementioned, many research questions can be generated on vital sustainability issues relating to SSHP, some of which are:

- What are constituents, barriers and recommendations for implementing SSHP?
- Who are the various stakeholders in achieving SSHP?
- What are the responsibilities of stakeholders and importance towards achieving SSHP?
- What is the relevance of the economic, environmental and social elements of SD to the implementation of SSHP?
- How can a framework effectively serve as a guiding tool for implementing SSHP for meeting housing needs? and
- How can stakeholders' performance be evaluated?

In this context, the proposed framework is designed to address the shortcomings of the existing frameworks as much as possible so as to meet housing needs, particularly through the social housing sector. The next section presents the proposed framework for SSHP.

9.4 THE PROPOSED FRAMEWORK FOR SSHP

Figure 9.1 presents the proposed framework for implementing SSHP. The framework consists of three main component areas and adopts 92 indicators comprising three groups of 21 constituents, 37 barriers and 34 recommendations based on economic, environmental and social elements for achieving SSHP (see Table 9.2). The first section addresses economic, environmental and social constituents, barriers and recommendations for implementing SSHP. The framework therefore, brings together the economic, environmental and social indicators considered relevant for achieving sustainability in SHP. The second section deals with the role of stakeholders and indicates how they can individually and/or collectively responsible for addressing the factors listed in section A. Stakeholders are: the government and relevant public agencies; non-profit private organisations; financial institutions; and end-users. The final section of the framework highlights stakeholders' performance assessment criteria as feedback mechanism. The assessment adopts a 3-level Likert scale - 'Effective', 'Neither effective/ineffective, and 'Not effective'.

The proposed framework therefore, addresses the shortcomings of the existing frameworks for SSHP and helps to fill the gap in the body of literature. It makes provision for in-project and post-project reviews given the need to determine the progress of an on-going SSH project and whether or not it achieved the overall sustainability objectives on completion or during the post occupancy period. The structure of the framework is robust for determining the level of success at any stage in the life of a SSH project, and can help to identify barrier(s) before making recommendations for improving the implementation.

The framework construct incorporates findings from the content analysis and the empirical survey. However, the framework is not about the process of implementation, rather it lists key sustainability indicators based on the three pillars of SD - economic, environmental and social from providers' perspective. The framework is flexible and practicable under different political, economic, social or cultural environment. Therefore, the framework can be considered as a useful guiding tool for implementing SSHP.

Discussions about each section of the framework are given in the following sections.

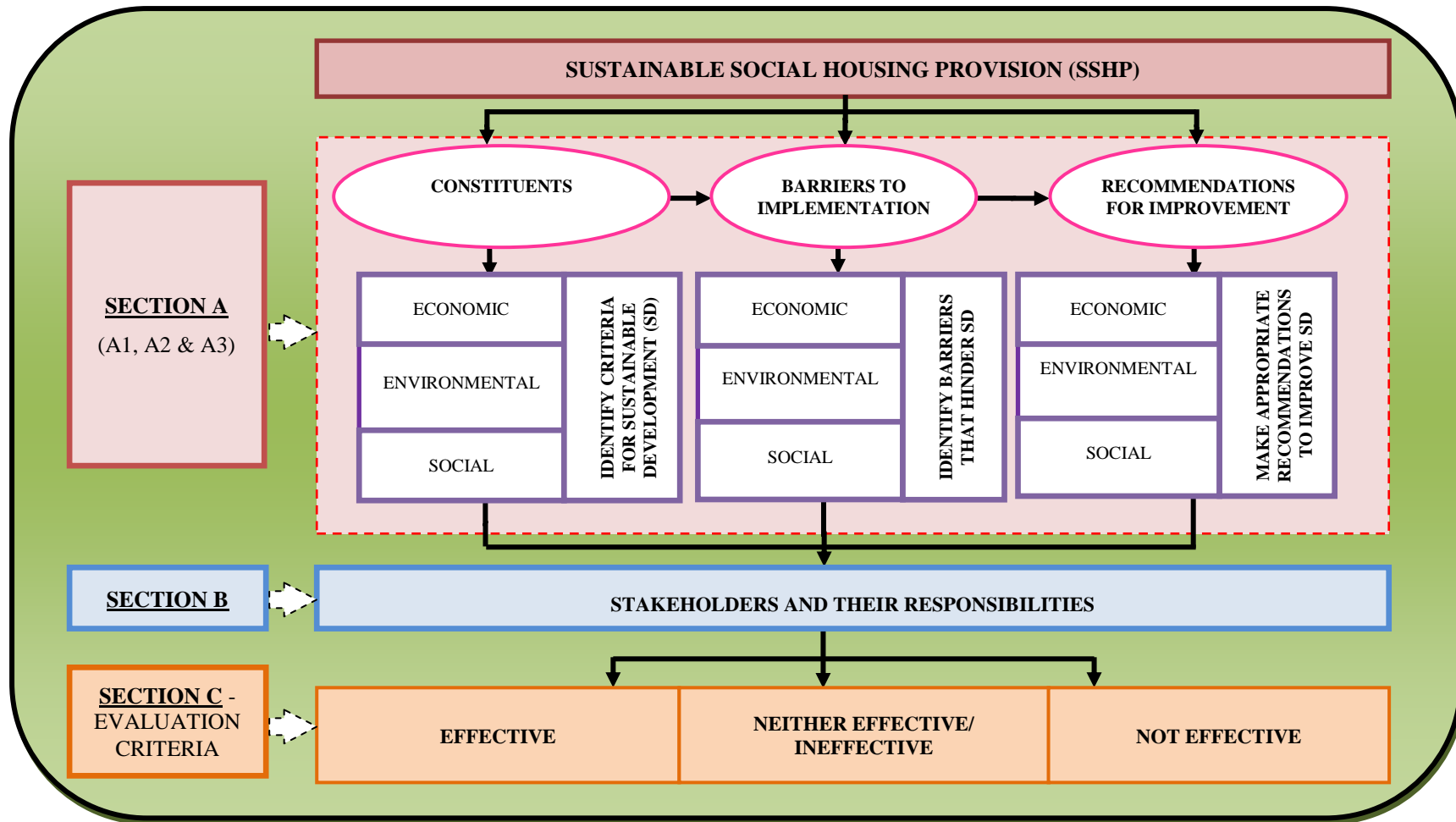


Figure 9.1: A Framework for Implementing Sustainable Social Housing Provision (SSHP)

9.5 SECTION A: CONSTITUENTS, BARRIERS AND RECOMMENDATIONS FOR IMPLEMENTING SSHP

This section deals with a range of factors that constitute economic, environmental and social constituents, barriers and recommendations for implementing SSHP. These factors are shown in Sections A1, A2 and A3 respectively. These sections indicate focus areas of stakeholders for implementing SSHP for meeting housing needs. Descriptions of the three sub-sections are given in the following sections.

9.5.1 Section A1: Consideration of Constituents of SSHP

This section consists of a combined 21 constituents of SSHP representing three pillars of SD - economic, environmental and social. This shows that a typical sustainable housing project is a multidimensional process that seeks to address environmental issues linked with those of the economic, and social for meeting housing needs (UN-Habitat, 2012). According to Ibem and Azuh (2011), the multi-faceted components and impacts of housing suggest that the issue of sustainability is central to its provision and demand.

For example, ensuring adequate funding; efficient economic planning and provision of infrastructure/social services are regarded as vital for achieving SSHP. This group of factors, together with different forms of rent and sale subsidies, can promote the delivery of adequate social housing that is affordable to the end users. UN –Habitat (2012) describes sustainable housing as those that are designed, built and managed for ensuring affordability to every household. Therefore, irrespective of the income level, SSHP is required to meet housing needs of every household. The UK government is strongly encouraging the best possible use of efficient economic planning obligations and other relevant tools to improve the delivery of affordable, a good mix of tenures and for promoting efficient use of resources for achieving sustainability in SHP (Communities and Local Government, 2006).

Similarly, findings have shown that good governance, economic growth and effective legal and administrative frameworks are vanguard of SSHP. In the overall, this can help to improve the understanding of policy makers in the application of the appropriate SD strategies, training of government officials, adopting different funding strategies, developing efficient policy and legal structure that can encourage sustainable housing delivery (Du Plessis, 2001). Ensuring access to affordable housing has always been an objective of housing policy in the UK given that for many decades the focus of the government has been on securing housing for the poorest and most vulnerable households (Gibb et al., 2013). This section of the framework also shows the need for ensuring economic design for promoting efficient use of resources and mixed development including efficient management for minimising the whole-life cost of SSHP.

Table 9.2: Framework For SSHP: Evaluation Criteria

SECTION A						SECTION B				SECTION C			
CODE	CONSTITUENTS		BARRIERS		RECOMMENDATIONS		STAKEHOLDERS RESPONSIBLE FOR ADDRESSING THE RANKED/TICKED ITEMS				EVALUATION CRITERIA		
	SECTION A1	Rank/ Tick **	SECTION A2	Rank/ Tick **	SECTION A3	Rank/ Tick **	Government/ Public Agencies	Non-profit Organisations	Financial Institutions	End-Users	Effective	Neither effective/ ineffective	Not effective
ECONOMIC													
EC 1.1	Affordability		- Poor Institutional Structure		- Provide good governance for creating enabling environment		*						
			- Inadequate consideration for a whole-life value of buildings		- Provide adequate funding		*	*	*				
EC 1.2	Adequate Funding and Provision for meeting housing needs		- Lack of Incentive to Social Housing Providers.		- Ensure adequate provision of housing units of mixed-uses		*	*					
			- Inadequate supply of Social Housing		- Promote the use of appropriate technology		*	*					
EC 1.3	Efficient Economic Planning to ensure the Provision of Infrastructure/Social Services		- Inadequate Provision of Infrastructure and Social Services		- Promote the provision of infrastructure and social services		*						
EC 1.4	Appropriate construction technology		- Lack of Appropriate Technology		- Ensure economic growth		*	*					
			- Inadequate research works		- Provide efficient maintenance and management strategies		*	*		*			
EC 1.5	Good Governance for promoting Economic Growth		- Poor Urban Development plan		- Provision of Incentives to Social Housing Providers		*						
			- Poor Institutional Structure		- Provide Appropriate planning		*	*					
			- Poor Affordability		- Ensure Urban Development strategies		*						
EC 1.6	Economic Design that promotes efficient use of Resources and Mixed Development		- Poor Legal Frameworks		- Ensure efficient use of resources.		*	*					
			- Poor Governance		- Provide appropriate design for quality housing provision		*	*					
			- Poor Maintenance strategies		- Provide Efficient Institutional Structure		*						
EC 1.7	Efficient Management for minimising Whole-life Cost		- Inadequate funding		- Promote research works		*	*	*				
			- Poor Building Design		- Meet housing needs of every household.		*	*					
EC 1.8	Effective Legal and Administrative Frameworks		- Inadequate consideration for a whole-life value of buildings		- Provide appropriate policy and legal framework		*						
			Others: 1..... 2..... 3.....		- Ensure Affordability of housing units through subsidies.		*	*	*				
					Others: 1..... 2..... 3.....								
ENVIRONMENTAL													
ENC 2.1	Adopt Appropriate Design		- Waste of Natural Resources		- Provide environmental friendly design		*	*					
			- Non-usage of Renewable Resources										

ENC 2.2	Environmental Protection by using Renewable Energy Resources, Minimise Waste Generation, using Recyclable Materials and ensuring Polluter pays for the Act	- Poor Building Design	- Provision of adequate Alternative Transport Modes.	*	*							
		- Poor Environmental Protection	- Ensure the use of appropriate materials.	*	*							
ENC 2.3	Effective Land Use Planning that promotes Efficient use of Natural Resources and Use of Alternative Transport Modes	- Poor Accessibility	- Ensuring Environmental Protection.	*	*		*					
		- Poor Land Use Plan	- Provide Appropriate Land Use Development Plan	*								
ENC 2.4	Environmental friendly materials	- Use of Poor Quality Materials	- Ensuring Good Accessibility	*								
		- Inadequate Alternative Transport Modes	- Ensure the Polluter Pays for the Act	*								
		Others: 1..... 2..... 3.....	Others: 1..... 2..... 3.....									
SOCIAL												
SC 3.1	Ensuring Security of Lives and Property	- Inadequate Well-Being Facilities	- Security of Life and Property for promoting residents' satisfaction	*	*							
		- Lack of Gender Equality	- Promote Education and Skills Acquisition	*	*							
SC 3.2	Provides a good range of Social Services	- Inadequate Employment Generation.	- Ensure adequate Provision of Social Services.	*	*							
SC 3.3	Promotes Social Cohesion											
SC 3.4	Promotes Equity by ensuring equal distribution and Gender Equality	- Lack of Informative Data on Sustainability	- Decent Housing for Creating the Sense of a Place to Live.	*	*							
		- Poor Safety Measure.										
SC 3.5	Community Development, Good and Quality Housing Provision and creates the Sense of a Place to Live	- Lack of equal distribution of housing units.	- Promote Social Cohesion	*	*							
		- Lack of Stakeholders' Involvement.	- Ensure Gender equality	*	*							
		- Poor Social Service Provision										
SC 3.6	Provides Skills Acquisition and Job Opportunities	- Inadequate Well-Being Facilities	- Ensure Equity in Housing distribution	*	*							
SC 3.7	Ensuring Welfare and Quality Life											
SC 3.8	Ensuring Public Awareness	- Poor Safety Measure.	- Promote Stakeholders' Participation with the Opportunity of a Choice.	*	*							
		- Poor Education and Skills Development										
SC 3.9	Ensuring Stakeholders' Participation	- Poor Social cohesion.	- Providing Employment Opportunities	*	*							
		- Inadequate Provision of Social Services,	- Embark on Public Awareness Strategies	*	*							
		Others: 1..... 2..... 3.....	Other: 1..... 2..... 3.....									

** Rank according to the priority given to each item (constituent/barrier or recommendation) or tick as it may be considered in the particular social housing project.

Furthermore, findings have shown that all the key environmental constituents considered in the framework are vital for implementing SSHP. Effective land use planning that promotes efficient use of natural resources and use of alternative transport modes are important criteria for minimising environmental impacts of SHP. The ultimate goal of the appropriate public land use planning is to regulate land uses for promoting efficient use of natural resources and improving people's lives (Marcuse, 2006). The influencing characteristics of the efficient land use planning are for maintaining a balance between available land for housing provision and land for environmental protection measures; transportation, commercial, employment and service facilities within residential neighbourhoods; and other land uses (Marcuse, 2006).

Equally important is for public and private providers to adopt appropriate design; ensuring environmental protection by using renewable energy resources; and minimising waste generation, use recyclable and environmental friendly materials in the delivery of SSH. These are elements required during building construction for achieving sustainability in SHP.

From social perspective, ensuring public awareness and community development strategies are critical and can be regarded as enabling social criteria for achieving sustainability in SHP. Sustainability strategies that promote security of lives and property; provision of a good range of social services; and social cohesion can be considered as critical for delivering SHP. Similarly, studies have shown that a combination of sustainable strategies for promoting equity by ensuring equal distribution and gender equality; good and quality housing provision and creating the sense of a place to live; provision of skills acquisition and job opportunities; and ensuring welfare and quality life for residents have been considered as critical factors necessary for delivering SSH (Dave, 2011). Colantonio and Dixon (2009 as cited in Woodcraft et al, 2011) viewed that social sustainability blends equity and health with participation, needs, social capital, economy, environment, happiness, well-being and quality of life. In the context of achieving sustainability in SHP, SD strategy seeks to promote social well-being, a sense of security, neighbourliness, and social cohesion, based on respect for cultures, traditions and background differences (Power, 2004).

Based on the above discussions, the first section of the proposed framework has presented germane constituents that can be considered for implementing SSHP for meeting housing needs. Findings from this section corroborate the multiple benefits of SHP identified by UN-Habitat (2012b) such as:

- (i) "improved quality of life and dignity of residence; (ii) affordable access to housing; (iii) improved health and lower incidents of illness, fatalities and material losses, better labour productivity; (iv) better conditions for human development, employment, creativity and economic growth; (v) durability and low maintenance cost; (vi) protection against natural hazards; (vii) improved efficiency and savings on the use of energy, water and other physical resources; (viii) better environmental protection and sanitary conditions; (ix) contribution towards climate adaptation and*

mitigation; (x) more sustainable and socially inclusive urban growth; and (xi) social cohesion, good governance and political stability”.

A number of significant outcomes can be identified from the foregoing discussions on Section A1 of the framework. For example, the framework has shown, within the context of SD, that the constituents are vital key to the implementation of SSHP. An awareness of the potential benefits of achieving sustainability in SHP has also been created. The section has established significant goals (economic, environmental and/or social) that stakeholders (the government, non-profit private organisations, financial institutions and end users) can consider for achieving sustainability in any SSH project. The framework can be viewed as a vital tool from the constituents of SSHP for addressing issues impairing strategies for meeting housing needs through the social housing sector.

9.5.2 Section A2: Consideration of Barriers of SSHP

In the context of this research, barriers to the implementation of SSHP are described as factors, which are detrimental to the progress of achieving sustainability in SHP. The barriers comprising a set of 37 indicators that emerged from the content analysis and empirical survey based on economic, environmental and social criteria.

Section A2 of the framework shows that poor affordability and inadequate consideration for a whole-life value of buildings are two of the key barriers to the implementation of SSHP. In the UK, findings by Diacon et al (2012) show that “*affordability ratios between house prices and households incomes are high and have worsened since 2000 given that many local authority areas in England have affordability ratio increased from 6% to 44%*”. It is evident from the framework that adequate consideration is not usually given to various costs and overheads in calculating the whole-life cost of a building to residents. According to Moorhouse (2010), the British Standard ISO 15686 – 5 defines whole life costing as a “*methodology for the systematic economic consideration of all whole life costs and benefits over a period of analysis, as defined in the agreed scope*”. In the context of SSH projects, consideration of the whole-life cost of a building can be regarded as important for meeting housing needs (UN-Habitat, 2012a). Therefore, the whole life-cost of a SSH unit to a resident can be calculated to include costs of: construction, management, maintenance, renovation, disposal and replacement to reflect continuity.

Similarly, this section of the framework emphasises the need to address issues of inadequate funding and provision of social housing including non-application of the appropriate technology in construction. Lack of incentive to providers and inadequate provision of infrastructure and social services as well as poor research works are regarded as barriers to achieving sustainability in SHP. For example, the provision of affordable social housing across all tenures is widely viewed necessary for minimising housing stress for households with varying incomes (UN-

Habitat, 2012a). The claim by Communities and Local Government (2006) gives credence to the poor funding of the social housing sector as a major cause of the inadequate housing provision of all tenures in many areas in the UK. On the other hand, the study by Bond and Perrett (2012) reveals that incentives in terms of energy price, tax and other political benefits are either lacking or not enough to make housing providers change their attitude towards SD. Furthermore, the lack of adequate sustainability knowledge and use of appropriate technology are regarded as the bane of SHP (Samari et al., 2013). The above views corroborate some significant aspects of the framework shown in SectionA2.

Further examination of the framework shows that poor governance and legal and institutional frameworks are critical issues in SSHP. Home and Communities Agency (2012) reveals that the UK government has in place, the Regulatory Framework for Social Housing in England and the Affordable Homes Programme 2011-15 (AHP), with the overall aim of increasing the supply of new affordable homes in England. There is also the Energy Performance of Buildings Regulatory Impact Assessment for the Implementation of EU Directive on the Energy Performance of Buildings with the aim of improving the energy performance of buildings (Department of Finance and Personnel, UK, 2008). These regulatory strategies have potentials for improving sustainability in social housing sector.

The environmental sub-section of the framework presents environmental barriers that are considered critical to the implementation of SSHP. Addressing the issue of poor land use plan is necessary so as to allocate adequate land for the provision of building structures and associated services like access roads, pedestrian walkways, disabled and cyclists access, bus stops and recreational facilities. The framework emphasises the need to address inadequate alternative transport modes and poor accessibility. These strategies together with steps to address the issue of poor land use plan will help to minimise environmental effects of SHP. The Communities and Local Government, UK (2006) reveals that government should adopt effective use of planning obligations like land use plan to promote the delivery of affordable housing. According to Ecclesshare et al. (2005), addressing poor land use plan through the provision of car-free areas, restrictions on private car ownership and alternative transport modes can significantly increase housing provision without overall loss of social services.

As shown in the framework, there is the evidence to suggest that poor building design; waste of natural resources; use of poor quality materials; and non-usage of renewable resources are major barriers to the delivery of SSH. Power (2004); Vale of White Horse District Council, UK (2012) have recognised that the most serious sustainability issues that need to be addressed are: pressures on land, natural resources like water, land, biodiversity and natural green space, energy use and waste generation. The use of defective and inefficient building materials and techniques can put construction workers and residents at risk (UN-Habitat, 2012a). Similarly,

the use of local environmental materials in housing construction is widely acknowledged as having low environmental impact (UN-Habitat, 2012b).

Social barriers of SSHP are identified based on the generally acknowledged third pillar (social) of SD. The third sub-section of Section A2 presents inadequate provision of social services; poor well-being facilities and safety measures as well as poor social cohesion and lack of stakeholders' involvement as key barriers to the implementation of SSHP. Ihuah and Eaton (2013) argue that involving stakeholders in the development process can promote efficient management of social housing estates in a sustainable manner for meeting housing needs. The general claim is that poor health and social well-being facilities deprive social housing residents the opportunities of enjoying cultural, leisure, community and sports facilities (Barnet, London Borough Council, 2008; Blackpool Council, 2008). The pre-requisite of creating communities with diverse tenures and diverse types of households is hindered by the poor social cohesion, which stigmatises SHP (Long and Hutchins, 2003).

Furthermore, lack of equal distribution of housing units and gender equality including poor skills development and employment generation are identified in the framework. This suggests the need to address issues of poor skills development and employment generation through appropriate sustainable strategies that promote the training and engagement of the local workforce in construction activities. Abiding (2009) explains that many developers, particularly the old generation have poor knowledge and skills in sustainable construction, given that social and environmental issues were not widely recognised some decades ago and were not given a priority in the education curriculum. This is a limitation to the understanding of sustainability measures in the construction industry, which could be impairing the achievement of sustainability in SHP.

Barriers to implementing SSHP as shown in the framework corroborate the following summary of barriers (Winston, 2010): (i) lack of proper understanding of what constitute sustainable housing; (ii) poor housing policy guidelines on sustainable construction, design and use; (iii) lack of efficient building laws; (iv) lack of efficient institutional framework to supervise construction activities and ensure compliance with sustainable regulations; (v) lack of skills and experience in sustainable construction techniques; (vi) exploitation of natural resources and lack of consideration for the use of renewable materials; (vii) poor social cohesion; (viii) lack of relevant sustainability data and lack of proper coordination of the activities of relevant public institutions (ix) inadequate funding for providing social services like recreation, security and health facilities.

9.5.3 Section A3: Identification of Recommendations for Implementing SSHP

Section A3 of the framework deals with recommendations for implementing SSHP grouped into three sub-sections – economic, environmental and social with 34 key indicators. This is not an isolated section as it is connected with the constituents and barriers (Sections A1 and A2) in order to achieve sustainability in SHP.

The economic sub-section presents good governance; ensuring economic growth and urban development; and adequate funding, which can be regarded as necessary criteria for creating enabling environment for the successful implementation of SSHP. Irrespective of economic, political, social and cultural differences, these recommendations can help to make SHP meet sustainable housing needs. Other recommendations include the provision of appropriate policy, legal and institutional frameworks; promotion of research works; provision of incentives to providers; and promotion of infrastructure and social services.

The highlighted recommendations in this section of the framework can help to influence stakeholders' decisions towards achieving sustainability agenda and meeting housing needs by the social housing sector (see Sections 5.4.1 and 8.2). This implies that social housing developers, particularly non-profit private organisations and financial institutions can function properly where there is the assurance of good governance, and availability and accessibility to different sources of development funds at affordable costs. Similarly, they need to be convinced of the protection of their rights and investments through effective legal and efficient institutional frameworks. Equally important is the provision of incentives in terms of tax relief, performance grants and benefits or political recognition. In the UK, Diacon et al. (2012) observe that amendments to the taxation regime by adjusting the long-term profitability in favour of housing provision for sale or renting can increase its attractiveness to investors and users.

Furthermore, this sub-section of the framework supports adequate provision of housing units for different tenures and households earning different incomes; provision of infrastructure and social services; use of appropriate technology; appropriate planning and design for quality housing; as well as efficient maintenance and management strategies. The above submission provides insight to the fact that the recommendations are relevant to achieving SSHP (see Sections 5.4.1 and 8.2). The requirement of ensuring adequate provision of SSHP is related to the SD concept of “... *meeting the needs of the present without compromising the ability of future generations to meet their own needs*” (WCED, 1987). Achieving sustainability in social housing sector can, therefore, be impossible without adequate provision of SHP. This should be with the intention to meet housing needs of households, whose incomes are not sufficient to buy or rent decent housing through the market system (Tan, 2011). The recommendation for ensuring adequate provision of SSHP can help to address issues of homelessness, overcrowding and poor standard of the social housing stock. The framework also emphasises the use of

sustainable construction technologies as a means of achieving sustainability in SSHP. Literature findings have shown that the use of appropriate technologies and building of a greater capacity in science processes can assist in meeting the objective of reducing carbon dioxide emissions and increase the beneficial use of local and indigenous knowledge for achieving sustainability in the housing sector (United Nations, 2002; Eccleshare et al., 2005).

Similarly, the UN-Habitat (2012b) makes some recommendations for achieving sustainability in the housing sector as follows:

- Good governance for ensuring an enabling environment for sustainable housing provision;
- Adopting sustainability initiatives with a clear, efficient leadership and political will;
- Efficient legal and administrative frameworks;
- Promote research, skills acquisition and employment opportunities; and
- Adequate funding for the implementation of sustainable housing projects.

The environmental sub-section deals with environmental recommendations for improving the implementation of SSHP. For example, the provision of appropriate land use development plan; the use of appropriate environmental friendly materials; provision of good accessibility and adequate alternative transport modes like pedestrian and disabled walkways and bus stops are regarded as vital elements for implementing SSHP. The sub-section also emphasises the need for protecting the environment and ensuring that the polluter pays for the act.

These recommendations highlight the need for appropriate strategies for protecting the environment and ensuring that social housing structures create minimal environmental impact. In the case of a green field projects, some of the factors that would not form part of the physical structures can be delivered, like land use plan and alternative transport modes, prior to the actual building construction. The two main housing construction-related environmental impacts are (Eccleshare et al., 2005):

*“Energy – buildings are major consumers of energy, which contribute to atmospheric pollution and climate change given that in the UK out of the 46% of the nation’s total energy consumption by buildings, domestic ones account for 27%; and **Materials and construction waste** – construction materials are mostly made from non-renewable resources accounting for 50% of all raw materials used in the UK and construction and demolition waste accounts for 35%-40% of the nation’s total waste generation.”*

Furthermore, this section of the framework emphasises the need to channel available resources towards ensuring compliance with building regulations, environmental protection and provision of adequate sustainable and affordable social housing. The framework also reveals that the

implementation of SSHP can be enhanced by adequate provision of social services and efficient management, maintenance and renovation of the newer and old unsustainable social housing as may be necessary. Winston (2010) concludes ‘that housing can have significant negative impacts on the environment in terms of its location, construction, design, maintenance, management, use and demolition’.

The framework also presents some sustainable recommendations from social perspective, which is considered significant to the implementation of SSHP. For example, embarking on public awareness has the potential for promoting sustainability in the social housing sector (see Section 8.4). Similarly, appropriate public awareness strategy is an important enabler through which stakeholders can acquire a clear knowledge about the various benefits of achieving sustainability in SHP. Involving the end users in the various activities would allow them to have a voice and the opportunity of choosing the type of accommodation they want and preferred tenure. This is imperative to the success of the implementation of SSHP. Simpson and MacDonald (2003) argues that residents should feel that they have participated especially in the planning and design of their houses and be given the opportunity of choosing where they like to live and be able to move between renting and buying and vice versa. The UN-Habitat (2011) reveals that international efforts to increase the supply and standard of low cost sustainable housing have shown a significant level of success, especially when local stakeholders are integrated into the process early.

The framework suggests adequate provision of social services like accessible roads, bus stops, and health facilities. This implies that the success of the implementation of SSHP can be enhanced with adequate provision of social services. The United Nations (2012a) notes that sustainable transportation and mobility are central to SD given that they can enhance economic growth as well as improving accessibility and can help to achieve better integration of the economy while respecting the limitation of the environment. The framework shows that employment opportunities and skills acquisition should form part of SSH delivery strategies given that social housing programme can be regarded as a social programme in this context. Thus in practice, the local people should be provided with jobs and be allowed to acquire technical skills through SSH projects.

Essentially, the public and private developers must ensure security of life and property for promoting residents’ satisfaction and the sense of a place to live. Building on Agenda 21 of 1992, Rio principles 20 years after seek to promote social equity, protect the environment, enhancing gender equality and women’s empowerment, and equal opportunities for all (United Nations, 2012c).

Considering the above discussions, the inclusion of economic, environmental and social recommendations in the framework postulates an attempt to address the limitations to the

implementation of SSHP. The next section focuses on stakeholders' responsibilities for addressing constituents, barriers and recommendations presented in 'Section A', while implementing SSHP.

9.6 SECTION B: STAKEHOLDERS' RESPONSIBILITIES FOR IMPLEMENTING SSHP

A stakeholder can be defined as a person or group, who has an interest in a project or could be affected directly or indirectly by its outputs or delivery (Revit-North West Europe, 2007). Relevant stakeholders for implementing SSHP are: governments and public agencies like housing corporations, housing authorities and mortgage institutions; non-profit private organisations like housing associations; financial institutions (national level like commercial banks or development banks and international level like World Bank or International Monetary Fund (IMF) etc.); and members of the public or end users. These stakeholders are differently responsible for addressing the constituents, barriers and recommendations to ensure a successful implementation of SSHP from economic, environmental and social perspectives.

9.6.1 Responsibilities of Governments and Public Agencies

In the UK, the government has been regulating SHP using different strategies and public agencies. The regulation of social housing in England, under the Localism Act 2011 was passed to the Homes and Communities Agency (HCA) Regulation Committee from April 2012 (HCA, 2012a). The government's regulatory measures can be viewed from the perspectives of the four main types of social housing providers in the UK - local authorities as owners and managers of social housing; arms-length management organisations (ALMOs) of local authorities; housing associations (non-profit organisations) or registered social landlords - RSLs; and unregistered bodies including for-profit providers (Cave, 2007). Thus, as the framework shows, the government's major responsibility is to regulate the overall activities of every stakeholder in the implementation of SSHP. For example, the UK government recently published the 'Allocation of accommodation: guidance for local housing authorities in England' for ensuring that social homes are allocated to people who genuinely need them and to show that the government is committed to making social housing provision more flexible and make the system fairer for all (Communities and Local Government, 2012).

Moreover, the government is a facilitator of SSHP through the application of different sustainability strategies. Accordingly, the framework shows that the government is responsible for ensuring affordability; adequate funding; good governance, economic growth and urban development. The government can promote research works in housing development related

fields like science, technology, environmental, capacity building and human development; ensure efficient provision of infrastructure and social services; and provide appropriate policy, legal and institutional frameworks. This implies that the government is responsible for providing an enabling environment for ensuring smooth operations of other stakeholders in the social housing sector by addressing the above-mentioned criteria. Through effective legal system, the government controls development activities, particularly price regulations, tenure imbalance, land acquisition etc. and efficient institutional structure to supervise and enforce the laws. The United Nations (1996) enjoined every government and local authorities to establish appropriate legal frameworks to facilitate the development of affordable housing, at the national, sub-national and local levels; provide public plans and policies for sustainable urban development and rehabilitation; ensure efficient land utilisation and promote improved management of housing for ensuring urban growth.

The framework shows that the government should be responsible for ensuring adequate provision of SSH for meeting housing needs. The use of appropriate technology is required to deliver SSH by providers and relevant government agencies like housing authorities in the UK. The government as a provider is responsible for adopting appropriate planning and design strategies; using environmental friendly materials; ensuring efficient maintenance and management and avoiding waste of resources. Indeed, these elements are essential for the provision of enduring SSH, which residents can be proud of living.

Similar to economic elements, the government is responsible for ensuring effective land use planning that promotes efficient use of natural resources and provision of alternative transport modes. The government has the power to allocate land resources for different uses through efficient planning schemes. Therefore, the government should ensure adequate land in the right location is available for SHP and transportation infrastructure like pedestrian and disabled crossing and walkways, cyclist's tracks and bus stops. The framework emphasises the use of renewable energy resources like sun or wind and use recyclable materials so as to reduce the impacts of social housing construction on the environment. The general believe is that the government, more than any organisations, has the power for ensuring the polluter pays for the act principle is enforced.

In addition, the government remains the entity that has the highest responsibility for addressing social elements of SSHP for meeting housing needs. However, some of the social criteria require joint responsibilities of the stakeholders for achieving reasonable impact. The government is required to show some level of responsibilities for ensuring security of lives and property; provision of a good range of social services; and promotes public awareness. Public developers have the responsibility for community development and good and quality housing provision for creating the sense of a place to live by residents. Stakeholders' participation in the

development processes and promotion of social cohesion between residents with economic, social and cultural differences are vital for implementing SSHP. It is important for public developers to ensure residents' welfare and quality life as well as providing the local people with technical skills and job opportunities through construction activities.

The delivery of affordable housing in the UK provides that local authorities have a vital role in adopting appropriate planning and decision making by ensuring direct social housing provision and services or delivery through other providers (Communities and Local Governments, 2006). The government also sets selling and renting prices of housing and designs standards for other providers (UN-Habitat, 2008).

9.6.2 Responsibilities of Non-Profit Private Organisations

The framework recognises private non-profit organisations as having the responsibility for addressing SSHP issues. They can be responsible for promoting the use of appropriate technology; providing appropriate planning and design for quality social housing delivery; ensuring efficient use of resources; and within their capacity render efficient maintenance and management services for encouraging residents' satisfaction. According to Wilson (2014), private registered providers in England must address under-occupation and overcrowding in their homes and meet identified local housing needs. The private sector is required to provide mixed-tenure housing for meeting the needs of both rich and poor people (UN-Habitat, 2008). A further responsibility of non-profit organisations is to ensure environmental protection in their construction activities. This implies adopting appropriate technology and ensures using environmental friendly design and materials.

Of particular importance is the need to address the poor perception of sustainability strategies of the government. The framework, therefore, shows that a proactive approach from the private sector is necessary to mitigate the effect of the poor perception on achieving sustainability in SHP. The above pinpoints the fact that non-profit organisations should be actively involved in awareness strategies by educating various members of the public about the multiple benefits of sustainable living, pollution free and decent environment.

Furthermore, the framework shows that private organisations have responsibilities for promoting social cohesion; and ensuring gender equality and equal distribution of housing stock without discrimination based on sex, age, physical disability, economic, social or culture. A well-intended SSH programme may not achieve the expected result if residents are not involved in the development process and give the opportunity of presenting what they deemed fit in terms of size, location, tenure and facilities. Therefore, the framework shows that private organisations should consider it necessary to allow the participation of the end-users in SSH development processes. Private housing organisations also have a vital role to promote skills acquisition and

employment opportunities as well as ensuring security of life and property not only through construction activities but throughout the life of a building. These strategies can assist in encouraging residents' satisfaction and creating the sense of a place to live.

9.6.3 Responsibilities of Financial Institutions

Funding of delivery activities constitutes the major responsibility of financial institutions in the implementation of SSHP. However, Gibb et al. (2013) observe that the provision of affordable housing is immensely challenging and investment in the social housing sector has slumped resulting in high and rising waiting lists due to low levels of supply. In this context, the provision of adequate funding for the social housing sector by financial institutions is significant for increasing social housing supply. The responsibilities of financial institutions can be examined from three main perspectives: (i) government ownership of mortgage banks, the Housing Corporation, Real Estate Investment Trusts (REITs), the National Housing Trust Initiative (NHTI), Scotland and development banks; (ii) private ownership through commercial banks and property financial companies; and (iii) international financial institutions by EIB, EBRD, World Bank and International Monetary Fund (IMF).

The financial institutions' responsibility for the provision of adequate funding can be through available mortgage loans at subsidised rates to social housing developers, buyers and renters. In addition, development fund can target the development of green buildings, used of renewable energy sources, and adoption of sustainable technology at priority, interest rate and relaxed terms backed by government guaranteed schemes. In this context, financial institutions within their capacity will be helping to ensure the provision of SSH at affordable costs given the reduction in the cost of funding.

The framework shows that financial institutions can be responsible for the promotion of research works. Funds can be made available to research institutes, universities, property companies and individual researchers, focussing on achieving sustainability in social housing. This implies that effective funding strategies for implementing SSHP do not need actions in the housing sector alone but also in other sectors like research centres, banking and finance etc. (UN-Habitat, 2008).

9.6.4 Responsibilities of End-Users

Members of the public are the beneficiaries of end products of SSHP. They are the group of people who will enjoy sustainable environment free of pollution and live in decent low-cost housing together with several other sustainability benefits. However, the end-users' roles are important to the implementation of SSHP.

The framework identifies that end-users should be responsible for ensuring environmental protection given that the cooperation of everybody is required for achieving sustainable environment. This can be attained through end-users' sustainable life style, avoidance of waste of resources like water and electricity consumption and minimising pollution agents like sound, unsustainable waste disposal etc. Sustainability concepts require that the end-users should safeguard the security of life and property within the neighbourhood, which is regarded as a joint responsibility between stakeholders.

It is the responsibility of the end-users to be part of the maintenance of the houses they are residing. This is in terms of ensuring the proper usage of the facilities provided along with the structures. The end-users must consider as a matter of importance for achieving sustainability in social housing the fulfilment of the obligations attached to their occupation as the case may be like regular payment of rents, mortgages, community taxes and levies. It is required of every end-user to actively participate in the community affairs and be engaged in relevant social works that can assist in achieving a sustainable community. The life style of every end-user must add value to the community. As shown in the framework, the end-users' responsibilities are paramount for achieving sustainability in social housing.

9.7 EFFECTIVENESS OF STAKEHOLDERS' ACTIONS - PERFORMANCE MONITORING AND MEASUREMENT

Section C of the framework deals with the effectiveness of the steps taken by stakeholders for implementing SSHP. This is a section required for monitoring and measuring the success level of stakeholders' performance. According to the Government of Hong Kong (2000), 'What gets measured gets done' and that a good system of performance measurement can enhance the quality of output and satisfaction of the end-users. Similarly, the Policy on Evaluation, (Section 3.1) defines evaluation as "*the systematic collection and analysis of evidence on the outcomes of programmes to make judgments about their relevance, performance and alternative ways to deliver them or to achieve the same results*" (Treasury Board of Canada Secretariat, 2010).

Accordingly, the framework provides a means of determining the effectiveness of stakeholders' actions in the implementation of SSHP. This implies that it is necessary to achieve sustainability in SHP so as to meet housing needs through the sector. It provides an opportunity to determine and reflect on the barrier indicator(s) and considers appropriate recommendations for improving the level of stakeholders' performance. In this context, there are two stages of monitoring and measurement of stakeholders' actions – in-project and post project reviews.

The in-project review is regarded as "*performance measurement as the on-going monitoring and reporting of the project's progress against pre-established goals*" (United States General Accounting Office- GAO, 2005). On the other hand, post-project review can be regarded as

performance measurement of a completed project against the pre-set goals. A three-level performance indicator can be used to determine the effectiveness of stakeholders' actions during the two-stage monitoring. The Government of Hong Kong (2000), for example, identifies six steps for measuring performance as follows: (1) identification of the project's objectives; (2) translate objectives into activities; (3) identify performance measures; (4) set performance targets for the measures; (5) prepare data and implement measures; and (6) use the performance measures to monitor progress.

Within the context of the framework, however, a six-step is considered appropriate for determining the effectiveness of stakeholders' performance for implementing SSHP. These steps are:

Step 1: Set performance goals, i.e. economic, environmental or social sustainability or a combination of two or the three.

Step 2: Set the performance indicator(s) within each of the performance goal e.g. affordability, adequate funding, adequate supply, environmental protection, social cohesion, skills acquisition and employment opportunities, gender equality etc. or a combination of many indicators.

Step 3: Measure, the effectiveness of respondents' actions by comparing achievement with the pre-established performance indicator(s), using a feedback mechanism – (i) in-project review by the construction team members and the project initiator during site/progress meeting; and (ii) post-project review (post-occupancy review) through feedback from end users and members of the public.

Step 4: Considering the barrier indicator(s) based on the degree of success, and

Step 5: Considering appropriate recommendation (s) for improvement.

Step 6: Take steps to effect the required recommendation (s) i.e. action stage.

Table 9.2 is the complete framework, including the evaluation section. The evaluation section allows iterative process i.e. the repetition of the evaluation action, to be carried out as long as the pre-determined goal is achieved. The iterative process is for arriving at a desired result by repeating the cycle of operations. The objective of an iterative process is to bring the desired goal or result closer to the outcome with each repetition (iteration), particularly where the consequences of revocation of the contract could be costly or unnecessary (Business Dictionary, 2014). However, if the outcome of the evaluation of a project is considered 'effective' there may be no need for repeating the evaluation. Where the outcome of the evaluation is considered to be 'neither effective/ineffective' or 'not effective', further evaluation of the project would be carried out starting with the identification of the appropriate barrier(s) from the list provided in the framework (Section A2). This will be followed by identifying relevant recommendation (s)

for improving the implementation from the list of recommendations provided in the framework (Section A3).

9.8 EXPECTED BENEFITS OF THE FRAMEWORK

The proposed framework serves as a guiding tool for implementing SSHP. Having a framework of this type ultimately would assist in achieving sustainability in the social housing sector. The framework has the potential for addressing sustainability issues militating against the attainment of sustainable environment and provision of decent housing to meet the needs of the poor and vulnerable households.

The framework is particularly useful for its clarity in terms of focus (implementing SSHP) and quality of the contents by indicating key performance indicators - constituents, barriers and recommendations for the desired improvement, which are properly tied together. This suggests that the framework has what it takes to successfully implement SSHP. It aligns with the three pillars of SD (economic, environmental and social) which makes it conforms to current global issues like environmental, poverty, gender, equity, urbanisation, and employment etc.

The framework identifies relevant stakeholders together with their expected responsibilities to successfully implement SSHP. In this context, the framework can be used to promote the team work required for implementing a project of common interest like SSHP, which seeks to enhance quality and sustainable living environment. It has the potential to encourage stakeholders' performance and be active in their responsibilities towards the implementation of SSH projects for meeting housing needs. The framework provides for the regular evaluation of stakeholders' performance through the in-project and post-project review of activities undertaken in order to determine the degree of success compared with the pre-established goal(s) (see Section 9.7). This implies that the framework is robust and dynamic with a continuous cycle that can help to enhance performance through the appropriate feedback mechanism. However, the outcomes of the framework may be limited by the poor coordination of the construction team and integration of stakeholders' activities as well as lack of political will if allowed to prevail in the implementation of SSHP.

The framework, therefore, is considered as an appropriate guiding tool to effectively implement SSHP for meeting housing needs in a sustainable manner.

9.9 VALIDATION OF THE FRAMEWORK FOR IMPLEMENTING SSHP

The purpose of validating a proposed framework is based on whether its concepts make sense not only to the researcher but also to other scholars and relevant practitioners (Jabareen, 2009). Therefore, the proposed framework was validated using an 'interviewer-administered' approach during the fourth stage of this research (see Section 4.18). The selected interviewees are

seasoned practitioners in the public and private social housing organisations (see Table 9.3). The interviewer-administered survey seeks “*to generate reliable and valid data within a reasonable time period at minimum cost*” (Burns, 2000). This implies that the interviewer-administered survey is cost effective, wastes no time and effective and can produce valid and reliable outcome. It is also a form of face-to-face interview, which can be useful where the data required is sensitive and may require the interviewer to modify and phrasing of questions in response to the respondent’s answers to the previous questions (Burns, 2000). The interviewer-administered survey approach was adopted based on its significant advantages for validating the proposed framework for implementing SSHP.

A detailed discussion on validating the framework has been provided in section 4.18.2. The four main steps involved in validating the framework are shown in Figure 4.10. The first three of the four-step process are embedded in the interview questions as shown below. The fourth step is the responsibility of the researcher and was taken to validate the developed framework with five social housing professionals – two in the public sector and three in the private sector.

Based on the areas covered as shown in section 4.18.2, and after explaining the set-up of the framework, which was earlier given to them, the interviewees were asked to respond to the following open-ended questions:

1. To what extent do you think the framework covers the constituents of SSH from economic, environmental and social perspectives?
2. To what extent do you think the framework has covered barriers to the implementation and recommendations for improving the implementation of SSH respectively from economic, environmental and social perspectives?
3. Do you think the framework captures all relevant stakeholders and their responsibilities, including evaluation criteria in the implementation of SSHP?
4. To what extent do you think the framework can be understood in terms of arrangement of the sections, flow of concepts, simplicity of contents or logic of the construction?
5. To what extent do you think the framework of this nature would help in the implementation of SSHP?
6. To what extent do you think a framework of this nature is needed for the social housing sector?
7. Would you find this framework useful for the implementation of SSHP?
8. What amendment would you or your organisation undertake to improve the framework?
9. Are you aware of any framework of this nature in the social housing sector?
10. Please, state your years of experience, qualifications, nature of work and various engagements in the social housing sector?

The following section provides discussions on interviewees’ responses and remarks to the above stated questions.

9.10 INTERVIEWEES’ RESPONSES AND REMARKS

Considering the number of years of the working experience in the social housing sector, the interviewees are professionals whose responses to the validation questions and remarks about the framework can be considered as important. On the face of the framework, there was no criticism and not a lot of comments from the interviewees regarding the level of coverage of the framework. There was a consensus of opinions of the interviewees in terms of the quality and wide-ranging of the sustainability indicators provided in section A of the framework, including respondents’ responsibilities identified in section B. The interviewees also agreed that the flow and the logic of the framework were clear and not difficult to comprehend.

Table 9.3 shows personal details of the interviewees.

Table 9.3: Interviewees Personal Details

Job Title	Qualifications	Years of Experience	Nature of Works	Sector of the Organisation
Chief Executive	CIHCM; FCIS	Above 20 years	General supervision of the company’s operations and staff members	Private
Contract Manager	MCIH; BSc.	Above 20 years	Award of contracts: New development; Renovation and maintenance of the existing housing; and Supervision of works	Private
Head of Investment & Director of Housing	BSc.; MSc.; MRICS	Above 20 years	In charge of company’s investment in housing; Housing provision; and Supervision of staff members.	Private
Director of Operations	CIHCM; BSc.	15 years	Allocation of social housing to beneficiaries; Determining appropriate benefits due to beneficiaries; Determining appropriate terms of allocation (based on the nature of beneficiaries); and Supervision of subordinate staff.	Public
Housing Partnership & Development Manager	FRCIS; MSc.	Above 20 years	Work with other partners i.e. RSLs & ALMOs; New development; and Maintenance.	Public

Overall, each of the interviewees felt that the framework is a relevant tool for implementing SSHP. They all agreed that the framework can assist in the implementation of SSHP if all the essential sustainability indicators such as ‘affordability’; ‘adequate funding’; ‘economic design’; ‘use of renewable energy sources’; and ‘provision of a good range of social services’ etc. are properly considered by the stakeholders.

The interviewees considered the framework to be a tool that can promote a greater level of corporation and understanding among stakeholders in the social housing sector. One of the interviewees wants the framework to be made available to as many social housing organisations as possible. The interviewees all agreed that the framework has the potential for creating awareness on various economic, environmental and social issues militating against achieving sustainability in SHP.

The interviewees all have positive views about the framework and there is no area of disagreement concerning the content and practicability of it. They all agreed that the content is comprehensive and easy to understand. However, one of the interviewees wants the research work to be expanded to include funding through partnership arrangement like ‘public-private partnership (PPP) schemes’. The interviewee noted that inadequate funding is a major cause of inadequate supply of housing, which goes further to create poor affordability. According to the interviewee, “*poor affordability results from inadequate provision, which gives rise to high price due to high demand*”. Complying with the interviewee’s remark is outside the focus of this research. However, the issue of addressing poor affordability through PPPs can be dealt with at the post-Doctoral stage.

The extract of some other personal major comments made by the interviewees on the framework is given as follows:

“The methodology employed in this exercise to try and identify the constituents, barriers and modalities for the implementation of sustainable social housing provision is good; the economic challenges facing potential home owners are quite formidable and the analysis asks all the relevant questions; and the framework highlights the on-going national discussion of environmental issues in the light of recent floods in various parts of the UK and elsewhere, the social implications are also well evaluated....” Interviewee 1.

“While going through the framework ahead of this interview, I did not find it difficult to conclude that the framework has the potential for promoting the achievement of the sustainability agenda of the government, ...” Interviewee 2.

“... How I wish you can take the research further to include funding of SSH projects through partnership arrangements, ... I am particularly full of thought by the extent of the coverage of the sustainability issues, most importantly, addressing environmental and social issues ... such as gender and social exclusion aspects” Interviewee 3.

“The challenges facing all social housing stakeholders are well stated including issues of affordability; the framework is well laid out eliciting necessary information on concepts, construction and fluency; and professional housing organisations and other built environment

groups should be sent copies of this work in due course as there are many salient points that are worth noting....” Interviewee 4

“I strongly believe that the framework will be useful to all stakeholders in the social housing sector, not only by broadening the awareness of the sustainability indicators, but will also help to provide decent accommodation at affordable cost, I simply put that it will help to meet the housing needs of low-income earners” Interviewee 5.

The comments from the interviewees were useful and can be considered as significant for validating the developed framework for implementing SSHP.

9.11 SUMMARY

This chapter, overall, has helped to achieve the aim and objectives of this research (see Section 1.2). The chapter presents a framework for implementing SSHP. The framework uncovered performance goals and indicators for implementing SSHP in relation to constituents, barriers and recommendations based on economic, environmental and social criteria. Furthermore, the framework highlights relevant stakeholders and identifies the sustainability criteria they can be responsible for in the implementation of SSHP.

The framework for implementing SSHP serves as a vital guiding tool for enhancing sustainability in the social housing sector. This is a significant development given the dearth of an operational framework for implementing SSHP that addresses the depth of sustainability issues in the sector. The framework, simultaneously deals with constituents, barriers and recommendations for implementing SSHP, which provides the prospect for evaluating and reviewing the degree of stakeholders’ performance through the whole-life of SSH projects. Section C of the framework offer the prospect of comparing performance results with the pre-set objective(s) or with other SSH projects. This implies that the framework can be used as a point of reference for evaluating performance or compared with a set of standards. The set of goals and performance indicators corroborate SD concept, which is linked specifically to the implementation of SSHP for meeting housing needs.

CHAPTER 10. CONCLUSIONS AND RECOMMENDATIONS

10.1 SUMMARY

The research was set out to develop a framework for implementing SSHP. The study has identified constituents, barriers and recommendations for implementing SSHP based on economic, environmental and social criteria for meeting housing needs within the capacity of social housing sector. Prior to the development of the framework, the study has sought to develop a conceptual model of SSHP (see Section 5.5). The study has proposed definitions of social housing (Section 2.5) and sustainable social housing (Section 3.7), including a model of social housing types. The study also sought to identify issues that could be preventing the achievement of sustainability in the social housing sector.

Generally, literature findings have revealed the need for achieving sustainability in the housing provision. Many research studies have also shown that housing needs, particularly for low and moderate-income households, could not be met through the market system. This has led to the involvement of non-profit organisations and the government in SHP. However, the common understanding is that SHP has a number of sustainability issues. Nonetheless, there is a dearth of evidence-based literature for presenting a definition of social housing (Sections 2.5) or a framework that properly serves as a guiding tool for implementing SSHP (Sections 9.3).

The overarching aim of this research, therefore, is to develop a framework for implementing SSHP for meeting housing needs. In achieving this aim, specific attention was given to constituents, barriers and recommendations for implementing SSHP from economic, environmental and social perspectives. The research sought to address the following objectives:

1. To critically review the concept and identify types of social housing and propose a definition for describing it.
2. To examine the concept of SD and its requirements for achieving sustainability in SHP.
3. To examine the key constituents of SSHP from economic, environmental and social perspectives.
4. To establish barriers to achieving sustainability within SHP.
5. To establish recommendations for achieving sustainability in SHP.

The aforementioned aim and objectives were achieved through a four-stage research approach. The first stage encompasses a critical review of extant literature, which is relevant to the focus of this research. The literature review assists in establishing a background understanding of the evolution and the concept of SHP. Findings from this stage were used to propose a definition of social housing and to identify types of social housing – private social housing, public social

housing, self-help and marketised social housing (see Section 2.4.2). In this context, the study sought to address the lack of clear identity of social housing and poor implementation, which might be linked to the lack of a single acceptable definition. The stage also presents the concept of SSH based on economic, environmental and social pillars of SD, identified and documented stakeholders' responsibilities in achieving sustainability in social housing. Generally, the first stage addressed objectives 1 and 2 of this research.

Stage 2 of the study employed a content analysis approach involving 121 documents, which were analysed and used the findings to develop a conceptual model of SSHP. The third stage employed a quantitative approach to establish the perception of the social housing practitioners in public and private sector organisations about the constituents, barriers and recommendations for implementing SSHP. A questionnaire survey approach was adopted to gather data from a total of 1021 social housing practitioners comprising 140 housing authorities (public sector) and 881 housing associations (private sector) operating in England. Stages 2 and 3 jointly addressed objectives 3, 4 and 5 of this research. During the fourth stage, data from the content analysis in the second stage and the questionnaire survey in the third stage were used to develop a framework for implementing SSHP. The developed framework was validated by a qualitative questionnaire approach through five professionals from the industry who earlier participated in the empirical survey. The fourth Stage has helped to formally achieved the overarching aim and objectives of this research.

10.2 CONCLUSIONS OF THE RESEARCH

The main findings of this study are chapter specific and were condensed within the respective chapters, presented as follows: the concept of social housing; sustainable development for SHP; and the conceptual model of SSHP. Others are: constituents of SSHP; barriers to the implementation of SSHP; recommendations for improving the implementation of SSHP; and a framework for implementing SSHP. Based on the above, this section seeks to synthesise the findings to address the aforementioned objectives of this study.

10.2.1 The Concept of Social Housing

The provision of social housing is generally believed to have started around years 1800s and continued through the 'World War I (1918)' and 'World War II (1945)' till-date. This has been the case due to the concern by philanthropists, non-profit organisations and the UK government about the inability of meeting housing needs through the market housing system. The government became fully involved in SHP when it was discovered that philanthropists could not provide enough housing for meeting the enormous shortage of accommodation for workers and citizens. Three phases of SHP have been identified in the UK: housing the poor era – 1800s to

World Wars I and II; the golden age or welfare era – 1950s – 1970s; and modernisation or post welfare era – post crisis of 1980s to date. The government at different stages subjected social housing to varying provision, allocation and regulatory policies like the housing Act 1980, which gave sitting tenants the ‘Rights to Buy’ their social housing homes and the Localism Act 2011, which passes “*responsibility for social housing regulation to the Homes and Communities Agency as from 2012 and mainly specifies ‘qualifying persons’ for social housing allocation*”. The Welfare Reform Act 2012 has reviewed the housing benefit of tenants and has abolished the option of having benefits paid directly to landlords.

The rationale for the government’s intervention in SHP through regulations has been to address the lack of competitive pressures towards good, efficient service provision; and for reducing the substantial public subsidy. However, the poor and low-income earners have been the group of people whose annual gross incomes are not always sufficient for accessing decent housing through the market system. Therefore, social housing providers have been providing different types of accommodation of varying tenure in the form of rental, sale or owner-occupied.

Inadequate provision of social housing has been reported in different parts of the country. The global financial crisis, rapid urban development and population and the contending need to provide other social services like transportation, education, health and security are widely understood as major contributions to the inadequate SHP. There is evidence from the study to suggest that the lack of appropriate definitions for describing social housing and sustainable social housing can be causing poor cohesiveness in the sector. The study therefore, strongly supports the need to propose appropriate definitions and identify and document the types of social housing.

10.2.2 The Concept of SSH in Relation to SD

Since the submission of ‘Our Common Future’, also referred to as the Brundtland report by the WCED in 1987 to the UN General Assembly, the issue of sustainability has not only assumed global recognition but has also captured the attention of every operator of development activities in all sectors of the economy. Accordingly, the situation is not different with the development of social housing in the UK. The study discovered a strong evidence suggesting that the definition of SD as provided in the Brundtland report seeks to address issues of essential needs of the poor households like housing, to which overriding priority should be given as well as the need to have consideration for limitations of the environment, particularly to adequately meet the present housing needs and those of future generations.

In the context of this study, it was discovered that the three generally acknowledged SD pillars – economic, environmental and social are vital for achieving sustainability in SHP. The elements

contained within the three pillars like adequate provision, funding, use of alternative transport modes, provision of social services, security of lives and property and residents' well-being etc. can assist in achieving sustainability in social housing.

Similar to social housing, the SD concept is variedly defined and its understanding is generally based on individual interpretations (see Sections 3.3 and 3.4). This can as a result be a major reason for the continuous struggling to fully achieve some of the objectives of SD (the reduction of carbon emission, use of environmental friendly materials, equity, poverty reduction, social inclusion, etc.), in the various sectors of the economy, like the social housing sector. The inclusion of the 'sustainability concept' to the SHP agenda should address sustainability issues in the sector. For example, a variety of issues have been identified for the lack of achieving sustainability in the social housing sector. Achieving sustainability in social housing by making it accessible at affordable costs to low and moderate-income households can be a mismatch due to the high sustainability requirement, including various subsidies by providers. An appropriate definition of SSH as proposed in this research (Section 3.7) can help in creating necessary awareness about its requirements for achieving sustainability in SHP.

Contrary to achieving the main objective of meeting housing needs, sustainable housing has only become accessible to higher income households and the supply has become relatively low compared with demand. This is a major reason for high prices. Similarly, the public sector, private organisations and financial institutions have become vulnerable due to the global economic crisis. As a result, they cannot effectively and individually perform their expected role in the development of SSH.

Based on the aforementioned issues, achieving sustainability in social housing requires efficient performance in the following aspects:

- Effective SD strategies that should be reviewed regularly to meet the housing needs of every household, protect the environment, ensure the prudent use of natural resources, and promote economic growth and employment opportunities;
- Provision of efficient legal and institutional frameworks; and
- Stakeholders, including the government, non-profit organisations, financial institutions and end users should efficiently play their roles in the provision of SSH.

10.2.3 The development of a conceptual model of SSHP

There is a variety of documents – journal papers, conference papers, government publications, Theses and other research reports on different topics relating to achieving SSH such as

sustainable housing, construction, development and public housing. These documents have been published for the main reason of promoting sustainability in the housing sector generally. Nonetheless, there is no single document that has identified and documented in-depth findings on sustainability elements based on constituents, barriers and recommendations for implementing SSHP in relation to the economic, environmental and social pillars of SD. There has been no conceptual model or framework that detailed sustainability factors of economic, environmental and social for meeting housing needs through the social housing sector based on constituents, barriers and recommendations for improving SSHP. This lack of comprehensive findings about achieving sustainability in social housing can have some adverse effect on the understanding of SSHP in the sector. Adopting a qualitative content analysis approach can help to articulate and synthesise research findings on how to meet housing needs through the social housing sector.

Based on the aforementioned approach, there is evidence to suggest that achieving sustainability in SHP can be approached through economic, environmental and social constituents. Some economic constituents that are critical for achieving sustainability in SHP are (Table 6.20):

- Ensuring the provision of affordable social housing by subsidising costs of provision, land, purchase, rent and mortgage loans;
- Economic growth for creating an enabling environment for promoting development activities;
- Adequate funding;
- Adequate provision for meeting housing needs and
- Good governance, which is significant for promoting every segment of the economy in the implementation of SSHP. This brings together economic growth, efficient legal and institutional framework and provision of infrastructural facilities and social services.

Despite the importance of these constituents, lack of appropriate technology, poor development plan, lack of incentive to providers and poor maintenance strategies constitute barriers to SSHP.

There is a strong indication from the study to regard certain environmental factors as significant for achieving SSHP. Some of the key environmental factors are (Table 6.20):

- Environmental protection by adopting a construction technique that uses renewable energy like wind or solar;
- Efficient waste management and use of recyclable materials;
- Use of environmental friendly materials; and
- Ensure the polluter pays for the act.

Nonetheless, poor land use plan, waste of natural resources, use of poor quality materials and lack of alternative transport modes, etc. are limiting factors.

From social perspective (Table 6.20), ensuring security of lives and property, promotion of social cohesion, welfare and quality of life, provision of skills acquisition and job opportunities for residents, ensuring public awareness of sustainability requirements, including equal distribution of social housing and accessibility of residents to efficient social services are vital for promoting satisfaction and creating a place to be proud of living. However, efforts should be made to avoid poor: safety measure, gender equality, social cohesion, employment generation, etc.

The implementation of SSHP requires a range of economic, environmental and social elements. Consequently, a more flexible approach to its provision in terms of efficient policy, strong political will and stakeholders' participation could help more households to access decent and sustainable housing.

10.2.4 Constituents of SSHP

There is evidence to suggest that housing authorities and housing associations representing the public and private sectors, respectively in the UK are playing a significant role in SHP. Their contributions and views are vital for gaining an insight into the current situation in the social housing sector. In the context of SHP, the two sectors focus on meeting housing needs, but they differ based on different backgrounds, mode of operation or funding accessibility, etc. These differences suggest reasons for having varying opinions regarding certain aspects of achieving sustainability in social housing. Notwithstanding, findings from the study have shown that the two sectors seek to achieve sustainability in SHP.

The evidence from the study shows that sustainability/green need is important to SHP given that the impact of housing construction on the environment can be reduced in a sustainable way. However, some social housing stocks in the UK still fall short of sustainable standard, particularly the older ones. Although the public and private social housing organisations regard adequate funding as significant for achieving sustainability in social housing, the private gives it more priority than the public. This suggests that the private sector's need for funds to operate is higher compared with the public that largely depends on public funds through budgetary allocations and tax proceeds.

Similarly, the majority of the sampled private organisations attached more importance to economic design for promoting efficient use of resources and mixed social housing

development. Apart from considering economic design as significant for achieving SSHP, it can help the private sector to make efficient use of scarce resources.

Furthermore, many of the sampled public and private social housing organisations regard affordability, adequate provision, efficient economic planning to ensure the provision of social services, use of appropriate construction technology and good governance as significant for SSHP. Nevertheless, the need for addressing sustainability issues like poor supply relative to demand, use of appropriate technology and adequate funding is still required.

From environmental perspective, nearly all the sampled public and private social housing organisations agree that the following environmental factors are most critical for SSHP:

- Adopting the appropriate design for simple and flexible construction that encourages the use of environmental friendly materials;
- Protection of the environment through the construction technique that uses renewable energy, minimises waste generation and encourages the use of recyclable building materials;
- Effective land use planning, use of natural resources efficiently and provide alternative transport modes like a pedestrian, cycling, and disabled routes, including public bus services; and
- Use of durable environmental friendly materials that meet local housing needs without degrading the environment.

There is evidence from the sampled organisations that sustainability activity in the social housing sector still require the need to address certain social issues for meeting housing needs. Nearly all the participants regard as most critical for achieving sustainability in SHP factors such as ensuring security of lives and property of residents; provision of a good range of social services like public transport, health, education, security network, water and electricity; and promotion of social cohesion through mixed development for accommodating residents with different economic, cultural and social backgrounds.

Basically, good governance, an efficient legal system and administrative structures are required as important for engaging the resources, interest and participation of all stakeholders in SSHP in consideration of the economic, environmental and social criteria.

10.2.5 Barriers of SSHP

There is a wide appreciation of economic, environmental and social barriers to the implementation of SSHP among the sampled social housing organisations. Opinions of the

public and private organisations are not significantly different regarding virtually all the economic issues limiting the progress of achieving sustainability in SHP. The pattern of opinion suggests a general level of understanding of social housing sustainability issues among social housing practitioners irrespective of the sector. In this context, the level of acknowledgement of the existing social housing status can help to address all sustainability issues.

Overall, there is a high level of importance placed on:

- Poor affordability and inadequate consideration for a whole-life value of buildings, which tends to increase residents' costs of occupation;
- Inadequate funding due to poor - financial assistance, revenue generation and budgetary allocation including inadequate government subsidies;
- Poor legal and institutional frameworks arising from bureaucracy and inability of the public institutions to properly co-ordinate the provision of SSH and deal with financing laws, building codes, including improper enforcement of rules and regulations;
- Lack of appropriate technology to ensure sustainable construction, proper maintenance and waste reduction, including low energy consumption and use of recyclable materials;
- Poor governance, development plan, provision of infrastructure and social services, including lack of incentive to providers, which hinder economic growth, demographic control and adequate provision.

Contrary to the above, the perceptions of the organisations in the two sectors show varying levels of understanding regarding environmental barriers in SSHP. This implies the need for more proactive strategies for synthesising social housing practitioners' interpretations of the environmental issues of SSHP. Nonetheless, the majority of them agree that poor environmental protection due to excessive energy usage and waste generation; waste of natural resources such as land resources and water in construction and at homes; and poor land use plan, which mostly causes inadequate allocation and misuse of land are some of the reasons for poor sustainability in SHP.

Similarly, there is evidence from the study to suggest that the public and private organisations hold different views regarding the degree of priority attached to social sustainability barriers of SHP. The majority of the private sector organisations regard poor public awareness and lack of sustainability data as the most critical barriers ahead of poor social cohesion in SSHP. On the contrary, the majority of the public sector organisations regard poor social cohesion above public awareness. The outcomes suggest that unlike the private, the public might have put more consideration to the issue of social cohesion as it has the highest legal and administrative responsibilities to protect the end-users' interest and to meet housing needs of every household within the sector.

Nevertheless, the level of awareness among the sampled organisations about social sustainability barriers is high, given that they all regard as critical, barriers like poor education, skills development and employment generation; lack of stakeholders' involvement in the development and decision making processes; and poor social service provision, inadequate well-being facilities and safety measure.

10.2.6 Recommendations for Improving SSHP

In the context of this section, the study considered as significant the need for appropriate sustainability recommendations that can improve the implementation of SSHP. Similar to the previous discussions, this section presents the discussions based on economic, environmental and social recommendations for improving SSHP. The study reveals that the sampled public and private organisations largely appreciate the identified recommendations as important for improving SSHP. They are considered as factors that can affect the success of sustainability activities within the social housing sector.

Accordingly, there is evidence from the study to suggest that nearly all the sampled organisations irrespective of sector and size regard as vital for SSHP, the following key economic recommendations:

- Appropriate planning and design for social cohesion, flexibility and efficient use of resources;
- Good governance for promoting economic growth and urban development strategies, adequate provision, employment opportunities and provision of incentives to providers.
- Promotion of research, particularly on the use of modern technology for achieving sustainability.
- Application of the appropriate technology for construction, maintenance and management strategies, conservation of energy and ensuring environmental protection.
- Adequate funding through subsidies, mortgages and partnership arrangement for ensuring affordability and adequate provision of SSH for mixed-uses and meeting housing needs.
- Provision of appropriate policy, legal and institutional frameworks.

The above factors imply that a proactive approach is necessary in order to mitigate barriers that might be limiting the progress of achieving sustainability in SSHP from the economic perspective. In addition, there is evidence from the study confirming that the sampled organisations, irrespective of sector and size, have similar thought regarding the significance of each key recommendation for improving SSHP.

The evidence from the study reveals that several environmental recommendations could be implemented for the successful SSHP. However, some of the factors regarded as important for achieving sustainability in SHP are:

- Environmental protection, conservation of energy and make every polluter pay for the act.
- Good accessibility and provision of adequate alternative transport modes for reducing carbon emission.
- Adopting appropriate land use development plan in order to avoid a misuse of land, human and financial resources.
- Promoting the use of sustainable environmental friendly materials to reduce maintenance and life-costs of buildings.

Nearly all the sampled social housing organisations agree that these environmental recommendations have a key role to play in achieving sustainability of SSHP. Nonetheless, efficient regulatory policy of the government is necessary for making the application of the factors have useful impact in the sector.

While economic and environmental recommendations have been identified and documented, the study viewed that the extent to which success can be achieved still require adequate consideration for social elements. The level to which sustainability measures can translate into success depended upon the manner of applying the identified social elements to meet housing needs. There is evidence to suggest that the majority of the social elements can directly or indirectly contribute to the end-users' level of well-being and satisfaction from the structure and neighbourhood. This can also determine the success or otherwise of the overall sustainability programme.

The majority of the sampled organisations agree that ensuring security of life and property for promoting residents' satisfaction; promoting residents' sense of a place to live; and providing skills acquisition and employment opportunities through apprenticeship and training are vital for achieving sustainability in SHP. Furthermore, organising seminars and relevant advertisements for creating awareness on the importance of achieving sustainability in social housing, including the use of appropriate technology in construction, maintenance and usage are significant within the context of SSHP.

However, evidence from the study shows that the private sector gives preference to the strategy that promotes adequate provision of social services compared with the public sector whose priorities are those around equity distribution, social cohesion, gender equality and stakeholders' participation in the development and implementation processes of social housing.

This tends to suggest that public social housing providers have higher responsibilities towards end-users' satisfaction than the private sector organisations. This also implies that the private sector would appreciate the availability of social services provided by the government compared with strategies that sought to require more resources for their activities. Nonetheless, there is evidence to suggest that the need for social cohesion, gender equality and stakeholders' participation are still significant for achieving sustainability in SHP.

10.2.7 The Proposed Framework for Implementing Sustainable Social Housing Provision (SSHP)

There is evidence to suggest that SHP has a variety of sustainability issues relating to poor affordability, inadequate funding, inadequate supply, poor environmental impact, etc., causing the need to adopt effective approaches for implementing SSHP. In response to this, a framework for implementing SSHP has been developed in this study so as to guide stakeholders in their sustainability activities for meeting housing needs through the sector.

The framework is comprehensive, flexible, and can be easily comprehend by every stakeholder in the social housing sector. It contains constituents, which can serve as sustainability goals, barriers to the implementation and recommendations for improving SSHP. It comprises of relevant economic, environmental and social indicators for implementing SSHP. The framework indicates stakeholders' responsibilities and makes provision for the need to regularly evaluate performance.

For the framework to succeed there is need for the government to create an enabling environment in the form of good governance, provision of social infrastructure, effective legal framework and efficient administrative structure. This will promote sustainability activities of other stakeholders and help to meet housing needs. Stakeholders in the social housing sector also need to be proactive, maintain a good relationship and communicate effectively with each other in order to enhance the effectiveness of the framework.

Overall, the study has proposed a definition of social housing in contrast to other previous attempts and developed a framework for implementing SSHP. On one hand, the research findings of this study can help stakeholders in the sector to appreciate the importance of SSHP as a form of housing that seeks to make low and moderate-income households have access to decent housing which they could not have accessed through the market system. On the other hand, the study has made significant contributions to the body of knowledge in SSHP.

One of the noteworthy issues to address generally in the housing sector is achieving sustainability in SHP. It is interesting to note that through the various research findings, this study has not only addressed sustainability issues but also bridged the gap in the literature and

streamlined economic, environmental and social sustainability indicators for enhancing the performance of stakeholders for meeting housing needs by the social housing sector.

10.3 LIMITATIONS OF STUDY

This research was primarily limited to the development of a framework for implementing SSHP. It covers constituents, barriers and recommendations for improving SSHP based on economic, environmental and social elements. The research could have been expanded by including culture, the fourth pillar of SD but was narrowed down to the identification of economic, environmental and social sustainability indicators for implementing SSHP. Data for the research was obtained from two main sources – extant literature and through the empirical survey. For content analysis, the documents used are limited to 121, which were published between the years 2000 to date based on the reasons earlier presented (see Section 4.11.2). Participants in the empirical survey are public (housing authorities) and private (housing associations) social housing organisations operating in England. The selection of the participants was limited to all housing authorities and members of the National Housing Federation (NHF).

Basically, the research has the following limitations:

1. The first main challenge in this research is a low response rate from the pilot survey. This was due to the inclusion of many questions and a voluminous questionnaire. The constraint was considered in order to prevent a low response rate in the empirical survey by adopting two approaches. Firstly, the questions were combined to reduce the volume of the questionnaire to 5 pages from 8. This was considered meaningful and coherent without losing any information from the original questions. Secondly, the telephone facility was used to remind respondents of timely return of the questionnaire. These approaches helped to increase the response rate. The questionnaire survey adopted the postal method, which has advantages and disadvantages. However, the questions were made simple and self-explanatory given that the completion of a questionnaire can be a time-consuming exercise.
2. Although there are many publications and research findings in the areas of SD such as sustainable construction, housing, affordability, etc. they are limited on SSHP. This limitation was overcome by expanding the scope of the literature search to cover sustainable housing related documents such as social housing, sustainable construction, housing, affordability etc. This decision became helpful for achieving the objectives of this study.
3. The study was limited to the empirical survey in which only quantitative approach was used for gathering data. Although this approach has advantages and disadvantages, the method was appropriate for gathering data for this study considering the large number of respondents located in different areas within England and the possibility of measuring the data. The research could have combined the quantitative with the qualitative approach. However, the

nature of the research is one of the quantitative in which data can be gathered and analysed statistically.

4. The methods of analysis were limited to descriptive statistics involving frequency distributions and cross-tabulations, mean value comparison and one-way analysis of variance (ANOVA). The study could have used more sophisticated statistical methods, however, the methods used helped to achieve the objectives of this study and also strengthen the empirical findings.

10.4 RECOMMENDATIONS AND FUTURE RESEARCH

Based on the findings of the research, there is evidence to suggest that the scope of the study is wide-ranging and multidimensional for achieving SSHP in any economic, social and cultural setting. There is a need to improve and harness the activities of all relevant sectors for achieving sustainability in SHP. Exploring the following recommendations by the stakeholders, including the research strategies can assist in enhancing the fulfilment of the sustainability goal in the social housing sector.

10.4.1 Recommendations for Stakeholders

- The provision of SSHP is a collaboration of different stakeholders and collective effort. Irrespective of scope, stakeholders should attempt to work as a team by maintaining good relationships and communicate with each other for the purpose of achieving sustainability objectives, in housing provision and needs. They should strive to appreciate and have a clear understanding of the roles and responsibilities of every other stakeholder so as to avoid conflict of interest.
- There is need for the government to provide efficient policy and regulations in order to create an enabling environment for other stakeholders to operate. The government should ensure that there is an effective legal system for protecting stakeholders' interests and properly guide their activities within the social housing sector.
- Professionals (Development team) like architects, quantity surveyors, contractors, etc. must individually and collectively play their roles according to the ethics of their profession so as to enhance the success of the sustainability agenda in the SHP. There is need to consider every sustainability requirement in procurement and delivery strategies for implementing SSHP.
- Financial experts need to regularly review funding strategies for making SSHP costs affordable to providers and end-users (buying and renting). This group of experts from the financial institutions should act in the financial advisory role from which other

stakeholders in the social housing sector can benefit. A major challenge to achieving sustainability in SHP is either high costs or poor access to sources of funding.

- Professional estate managers need to adopt efficient strategies for marketing, managing and maintaining not only social housing stocks but residents alike. The way social housing is managed can determine affordability and residents' satisfaction. This can be a major contributor to the success or otherwise of the sustainability agenda of the government in the sector.
- There is need for maintaining a sustainability data-base where activities of stakeholders should be kept to serve as a source of information on benefits and issues relating to the achievement of sustainability in social housing. There is need for users' guideline on how to handle sustainability equipment, including information on various sustainability technologies and their benefits.

10.4.2 Recommendation for Future Research

- The study identified and documented a comprehensive list of 92 sustainability indicators (21 constituents, 37 barriers and 34 recommendations) under economic, environmental and social elements for implementing SSHP. However, there is ample chance for more empirical studies to identify and document more sustainability indicators. This may be necessary in order to advance the scope of the research further.
- There is need for empirical studies in other related areas like different sources and strategies for funding SSHP; development processes; roles and responsibilities of stakeholders; and performance measurement modes. Identifying different funding sources and strategies available to stakeholders can help to adequately address the funding issue in the implementation of SSHP. Research findings on the development process should attempt to uncover issues to do with the timing, phases, locality and involvements in SSHP. Empirical studies on roles and responsibilities of stakeholders will also uncover issues relating to job specifications, professionalism and appropriate recommendations for enhancing efficiency. Measuring and evaluating stakeholders' performance regularly using appropriate tools might contribute significantly to achieving sustainability in SHP.

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APPENDIX A: SOCIAL HOUSING DEFINITIONS

	Definitions	Authors	Sources: Accessed on 07/08/2013	Remark
1	Housing provided for people on low incomes or with particular needs by government agencies or non-profit organizations.	Oxford Dictionary	http://oxforddictionaries.com/definition/english/social-housing .	General
2	Homes provided by the government for people with low incomes to rent cheaply	Cambridge Dictionaries Online	http://dictionary.cambridge.org/dictionary/business-english/social-housing	General
3	Social housing is housing that is let at low rents and on a secure basis to people in housing need. It is generally provided by councils and not-for-profit organisations such as housing associations. Social housing is a general term that refers to rental housing which may be owned and managed by the state. Non-profit organizations, or by a grouping of the two, their main aim is usually to provide affordable housing to individuals	ASK Jeeves	http://uk.ask.com/question/what-is-social-housing	General
4	Houses that Local Councils and other organisations provide	Macmillan Dictionary	http://www.macmillandictionary.com/dictionary/british/social-housing	General
5	Single or multi-family homes built to provide affordable dwellings for low income people'	Social Housing Action to Reduce Energy Consumption	http://www.socialhousingaction.com/social_housing_in_estonia.htm	General
6	Social housing is understood as a space for living, planned and promoted by Public Administration. Housing has been created with the support of social policies that help those people who have economic problems to have access to housing.	Architects' Council of Europe	http://www.ace-cae.eu/public/contents/getdocument/content_id/596	General
7	Social housing is the housing designed to assist households which cannot afford to acquire adequate and suitable housing at affordable prices on the private market	Yves Vaillancourt and Marie-Noëlle Ducharme with the collaboration of Robert Cohen, Claude Roy and Christian Jetté	http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.202.6325&rep=rep1&type=pdf	General
8	Social housing in the UK is low cost housing allocated on the basis of need. With the exception of Northern Ireland, where it is provided only for rent, in the rest of the United Kingdom social housing includes the provision of rental dwellings, affordable home ownership, as well as shared ownership schemes.	CECODHAS HOUSING EUROPE, The Federation of Public, Cooperative & Social Housing	http://www.housingeurope.eu/publication/social-housing-country-profiles/social-housing-in/united-kingdom	UK

	It is generally provided by councils and not-for-profit organisations such as housing associations, although there are differences across countries			
9	Social Housing means homes that are owned by local authorities (sometimes called ‘councils’ or ‘local government’) or a Registered Social Landlord (RSL)	Social Housing Action to Reduce Energy Consumption (SHARE)	http://www.socialhousingaction.com/social_housing_in_the_uk.htm	UK
10	Social housing is housing that is let at low rents and on a secure basis to people in housing need. It is generally provided by councils and not-for-profit organisations such as housing associations.	Shelter, England	http://england.shelter.org.uk/campaigns/why_we_campaign/Improving_social_housing/what_is_social_housing	UK
11	Social rented housing is owned by local authorities and private registered providers (as defined in section 80 of the Housing and Regeneration Act 2008), for which guideline target rents are determined through the national rent regime. It may also be owned by other persons and provided under equivalent rental arrangements to the above, as agreed with the local authority or with the Homes and Communities Agency.	Department of Communities and Local Government (Gov.UK)	https://www.gov.uk/definitions-of-general-housing-terms	UK
12	Social housing provision in France is housing provided by ‘HLM’ organisations , which are specific actors entrusted by the state to fulfil a mission of general interest (where HLM stands for Habitation à Loyer Modéré –organisations providing housing at moderated rents).	CECODHAS HOUSING EUROPE	http://www.housingeurope.eu/publication/social-housing-country-profiles/social-housing-in/fr	France
13	In Denmark social housing (or, more specifically, not for profit housing) consists of housing for rent provided at cost prices by not for profit housing associations .	CECODHAS HOUSING EUROPE	http://www.housingeurope.eu/publication/social-housing-country-profiles/social-housing-in/dk	Denmark
14	In a 2010 decision by the European Commission on the Dutch social housing system, it was defined as the provision of housing at below market price to a target group of disadvantaged people or socially less advantaged groups, as well as to certain categories of key workers.	CECODHAS HOUSING EUROPE, The Federation of Public, Cooperative & Social Housing	http://www.housingeurope.eu/publication/social-housing-country-profiles/social-housing-in/netherlands	Netherlands
15	Although in Ireland there is not an official definition of social housing, by reference to different Housing Acts ⁶⁸ it is possible to assert that the main purpose of social housing provision is to provide appropriate and decent housing via defined providers for lower income and social disadvantaged population groups, at an affordable cost, with adequate standards as regards size, design and specifications, and also to ensure fairness in the relationship between landlords and tenants.	CECODHAS HOUSING EUROPE, The Federation of Public, Cooperative & Social Housing	http://www.housingeurope.eu/publication/social-housing-country-profiles/social-housing-in/ireland	Ireland

16	The term “social housing” ⁸⁰ is largely used by authorities and institutional bodies in Portugal, with a legal concept based on 1983’ legislation defining social housing as housing built and bought with the financial support of the State, through fiscal benefits and financing for acquisition of land, construction and promotion of housing. It includes the provision of housing for sale or rent to persons/households below a certain income, as well as measures related to specific groups which are targeted by housing and urban renewal programmes	CECODHAS HOUSING EUROPE, The Federation of Public, Cooperative & Social Housing	http://www.housingeurope.eu/publication/social-housing-country-profiles/social-housing-in/portugal	Portugal
17	In Romania, the term social housing (or ‘social houses’) is officially defined as ‘public dwellings with subsidized lease, allocated to individuals or families whose financial position would not otherwise allow them access to tenements leased on the market’.	CECODHAS HOUSING EUROPE, The Federation of Public, Cooperative & Social Housing	http://www.housingeurope.eu/publication/social-housing-country-profiles/social-housing-in/romania	Romania
18	A new act on subsidies for housing development, valid since January 1st 2011, has adopted a definition of social housing as ‘housing acquired with use of public funds, addressed for adequate and humanly decent housing of individuals who are not able to ensure housing with their own effort and meet the conditions under this Act. Social housing is also permanent housing in residential buildings or accommodation financed from public funds and provided within the care under specific regulations’.	CECODHAS HOUSING EUROPE, The Federation of Public, Cooperative & Social Housing	http://www.housingeurope.eu/publication/social-housing-country-profiles/social-housing-in/slovakia	Slovakia
19	In Slovenia ‘social housing’ is official defined as ‘nonprofit rented dwelling’x and it is addressed to people on low to middle income.	CECODHAS HOUSING EUROPE, The Federation of Public, Cooperative & Social Housing	http://www.housingeurope.eu/publication/social-housing-country-profiles/social-housing-in/slovenia	Slovenia
20	In Luxemburg social housing is low cost housing provided both for rent and for sale to people with low income.	CECODHAS HOUSING EUROPE, The Federation of Public, Cooperative & Social Housing	http://www.housingeurope.eu/publication/social-housing-country-profiles/social-housing-in/luxemburg	Luxemburg
21	Social housing in Hungary is regulated under the so-called Housing Law. It does not give a general definition of social housing, but only refers to social housing as rental unit owned by municipal governments and allocated based on social criteria.	CECODHAS HOUSING EUROPE, The Federation of Public, Cooperative & Social Housing	http://www.housingeurope.eu/publication/social-housing-country-profiles/social-housing-in/hungary	Hungary
22	Social housing in Finland consists of dwellings subsidised with loans with interest subsidies from the Housing Finance and Development Centre of Finland (ARA), rented at cost-based rents, to tenants selected on the basis of social and financial needs.	CECODHAS HOUSING EUROPE, The Federation of Public, Cooperative & Social Housing	http://www.housingeurope.eu/publication/social-housing-country-profiles/social-housing-in/fi	Finland

23	Social housing is a form of affordable housing delivered centrally through the provision of assistance either 'in kind', through the provision of a dwelling, or 'in cash' through the transfer of subsidies to increase housing affordability.	Housing Shareholders Advisory Group 2010)	http://www.dbh.govt.nz/UserFiles/File/Publications/Sector/pdf/vision-for-social-housing-nz.pdf	New Zealand
24	Social housing is an "assisted housing owned and operated by the non-profit and cooperative housing organisations"	Van Dyk, (1995: 817) cited in Alexandra Moskalyk (2008)	http://rcrpp.org/documents/50550_FR.pdf	Canada/ Academic
25	Social housing is sometimes also called subsidised housing and means supported accommodation for low-income households by the government. Subsidising instruments are generally direct housing subsidies, non-profit housing, public housing, rent supplements and some forms of co-operative and private sector housing.	Franz, Yvonne (2009).ISBN (eBook): 978-3-640-433124	http://othes.univie.ac.at/3819/1/2009-02-15_0448198.pdf	Academic
26	Soial housing ia subsidised housing owned by local government or non-profit organisations or housing that is let at sub-market rents.	Oxley et al. (2010)	Housing, Theory and Society, 27:4, pp.332-350. http://www.informaworld.com/smpp/title-content=t713699832	Academic
27	Social housing is accommodation that is let at low rents to people in housing need. It is generally provided by councils and not-for-profit organisations such as housing associations.	Shelter, England	http://england.shelter.org.uk/campaigns/why_we_campaign/Improving_social_housing/wh at_is_social_housing	

APPENDIX B: DOCUMENTS SELECTED FOR CONTENT ANALYSIS

No	Title of Paper	Publisher/ Author	Year Published	Content Classification			
				Constituents	Barriers to Implementation	Recommendations for Improvement	Group Code
01	International Review of Sustainable Low-Cost Housing Projects	Ebsen and Rambol	2000	▪	▪	▪	01CP
02	Basic Principles of Sustainable Development	Harris, J. M.	2000	▪		▪	02 RR
03	The Challenge of 'Sustainable Development': From Concept to Practice	Steven Hayward, Elizabeth Fowler, and Laura Steadman	2000	▪	▪	▪	03 RR
04	Sustainable Development and Sustainable Construction: A Literature Review for C-SanD	Khalfan, M.A.	2002	▪	▪	▪	04 RR
05	Report of the World Summit on Sustainable Development. Johannesburg, South Africa	United Nations	2002	▪	▪	▪	05PD
06	Towards An Understanding of Sustainability In Social Housing Projects	Kate Carter and Chris Fortune	2002	▪			06CP
07	Social Housing Policy in the European Union: Past, Present and Perspectives	Hugo Priemus and Frans Dieleman	2002	▪		▪	07JP
08	Analysing The Nexus Of Sustainable Development And Climate Change: An Overview	Mohan Munasinghe	2003	▪		▪	08 RR
09	Sustainable communities in the North West; Building for the Future	Office of the Deputy Prime Minister	2003	▪	▪	▪	09PD
10	Sustainable communities in the East Midlands Building for the future	The Office of the Deputy Prime Minister	2003	▪		▪	10PD
11	Planning for Housing – The Potential for Sustainable Communities.	Merron Simpson and Kelvin MacDonald	2003	▪	▪	▪	11 RR
12	Housing Policy and Sustainable Urban Development: Evaluating the Use of Local Housing Strategies in Queensland, New South Wales and Victoria	Gurran, N	2003	▪	▪	▪	12 RR
13	Governance for Sustainable Development: Strategic Issues and Principles for Indigenous Australian Communities.	Dodson, M. and Smith, D.E.	2003	▪	▪		13 RR
14	Sustainability of social housing system and options open to the Department of Housing.	Carol Mills	2003	▪	▪	▪	14CP
15	Sustainable development: understanding the concept and practical challenge	S. Parkin, F. Sommer and S.Uren	2003	▪		▪	15JP

16	Sustainable-Affordable Housing Submission to Inquiry into First Home Ownership	Institute for Sustainable Futures. Institute for Sustainable Futures. University of Technology Sydney	2003	▪	▪	▪	16 RR
17	Sustainability and Sustainable Development	Jonathan M. Harris	2003	▪		▪	17 RR
18	A Toolkit of Indicators of Sustainable Communities (formerly A Toolkit of Sustainability Indicators)	Derek Long and Mary Hutchins	2003	▪	▪	▪	18 RR
19	Is the development control legal framework conducive to a sustainable dense urban development in Hong Kong?	Chan, E.H.W and Yung, E.H.K.; Habitat International	2004	▪	▪	▪	19JP
20	Seven Principles of Sustainable Regeneration And Development	Housing Corporation/ Jonathan Smales; David Copeland; Chris Watts; Joanna Yarrow; and Dan Epstein	2004	▪	▪	▪	20PD
21	Sustainable Construction -Brief	Sustainable Construction Team, Department of Trade and Industry, UK.	2004	▪	▪	▪	21PD
22	Local Governments and Housing	AHURI. Australian Housing and Urban Research Institute	2004	▪	▪	▪	22JP
23	Sustainable Communities and Sustainable Development - A Review of the Sustainable Communities Plan	Anne Power	2004	▪	▪	▪	23 RR
24	Barriers to Sustainable Housing Development	Eccleshare P., Harvis C. and Riffat S.	2005	▪	▪	▪	24 RR
25	Delivering Sustainability Through Value Management: Concept and Performance Overview.	Abidin, N.Z. and Pasquire, C.L.	2005	▪	▪	▪	25JP
26	What Is Sustainable Development? Goals, Indicators, Values, And Practice. Issue of Environment: Science and Policy for Sustainable Development	Robert W. Kates, Thomas M. Parris, and Anthony A. Leiserowitz	2005	▪	▪	▪	26JP
27	Sustainability, Planning Practice, Housing Form and Environmental Protection in the Toronto Region's Oak Ridges Moraine: Project Report. Canada Mortgage and Housing Corporation (CMHC)	Hanna, K. and Webber S.	2005	▪	▪	▪	27 RR
28	The Governance Of Smart And Sustainable Housing Development – Some Comparative Thoughts On Malaysia & Australian Cases	R.Zakaria and J.Yang Editor: A. C. Sidwell	2005	▪	▪	▪	28CP
29	Sustainable Development: A Brief Guide. 17 key indicators to measure progress	Neuchâtel,	2005	▪			29 RR
30	Barriers to Sustainable Housing Development	Sustainable Housing in the East Midlands	2005		▪	▪	30PD
31	Strategy For Sustainability In Affordable Housing - A Challenge To Malaysian Construction Industry	Hamisah Tapsir SITI and Usman FATHONI	2005	▪		▪	31CP

32	The role of materials in sustainable construction MATERIALS FORUM VOLUME 30 - 2006 Edited by R. Wuhrer and M. Cortie © Institute of Materials Engineering Australasia Ltd	J. Harrison	2006	▪		▪	32JP
33	What Is Stopping Sustainable Building in England? Barriers Experienced by Stakeholders in Delivering Sustainable Developments	Katie Williams and Carol Dair	2006	▪	▪		33JP
34	Sustainability Appraisal / Strategic Environmental Assessment Of Dartford & Gravesham Borough Councils Local Development Frameworks Scoping Report	Katherine Hayward Tom Chambers of Enfusion Ltd	2006	▪	▪		34 RR
35	Affordable Housing: Sustainability Appraisal	Braintree District Council	2006	▪		▪	35PD
36	Chorley, Preston & South Ribble Core Strategy	Preston, South Ribble and Chorley	2006	▪	▪	▪	36PD
37	Sustainable Housing Action Programme (SHAP): Market Research Report.	Hestia Services Ltd	2006		▪	▪	37 RR
38	Review of Sustainable Construction.	Department of Trade and Industry, UK.	2006	▪	▪	▪	38PD
39	Sustainable Development: A Review of International Literature	The Centre for Sustainable Development, University of Westminster and the Law School, University of Strathclyde	2006	▪	▪	▪	39 RR
40	Sustainable Development Policy and Guide for The EEA Financial Mechanism and The Norwegian Financial Mechanism	The European Economic Areas Financial Mechanism and The Norwegian Financial Mechanism	2006	▪		▪	40PD
41	Delivering affordable housing	Communities and Local Government: London	2006	▪		▪	41PD
42	The United Kingdom's Sustainable Development Strategies: Leading the Way or Flattering to Deceive?	Duncan Russel	2007	▪		▪	42JP
43	Sustainable Housing for Residential-Industrial Neighbourhoods in Malaysia- A Study on the Elements of Indoor Environmental Quality Improvements.	Rozana Zakaria	2007	▪	▪	▪	43TH
44	Sustainable Development Triangle	Munasinghe Institute for Sustainable Development and Mohan Munasinghe	2007	▪		▪	44 RR
45	Towards an Integral Approach of Sustainable Housing In Indonesia	Dwinita Larasati, M.A	2007		▪	▪	45 RR

46	A strategic framework for sustainable construction in developing countries, Construction Management and Economics	Chrisna Du Plessis	2007	▪	▪		46JP
47	Sustainable Housing	Roland Finch	2007	▪			47 RR
48	Toward a Sustainable Community: A Toolkit for Local Government	Sherrie Gruder, Jerry Hembd, Lisa MacKinnon, Wisconsin Jane Silberstein	2007		▪	▪	48 RR
49	Social Sustainability: An Exploratory Analysis of its Definition, Assessment Methods, Metrics and Tools	Andrea Colantonio	2007	▪		▪	49 RR
50	Sustainability Strategy Framework	Herefordshire Housing	2007	▪		▪	50PD
51	A Guide to Developing a Sustainability Strategy and Action Plan	Clare Wilson, Barry Smith and Peter Dunn	2007	▪		▪	51 RR
52	South London Waste Plan Sustainability Appraisal	Scoping Report	2008	▪	▪	▪	52PD
53	Sustainable Concept Awareness in Malaysia Construction Practices. <i>The 3rd Built Environment and Natural Environment Conference</i> . United Kingdom: Liver Pool JMU. 2008. 137-144.	Abidin, N. Z., and Jaapar, A	2008	▪		▪	53CP
54	Developing World Sustainable Building Practices: A Look at Buildings in Impoverished Locales.	Jesse Steinert	2008	▪			54 RR
55	The Sustainability Appraisal Framework (Task A4)	South London Waste Plan; Scoping Report	2008	▪			55PD
56	Sustainable Building: Canada on the Move	G.R. Murray	2008	▪		▪	56CP
57	Models of Sustainable and Affordable Housing for Local Government.	Emsley S., Phibbs P. and Crabtree. University of Western Sydney: Urban Research Centre.	2008	▪	▪		57 RR
58	Key Sustainable Issues and Problems	South London Waste Plan: SA Scoping Report	2008		▪		58PD
59	Sustainable Framework-Objectives and Indicators	South London Waste Plan: SA Scoping Report	2008	▪		▪	59PD
60	Waterloo Station Development Brief: sustainability Assessment	Scoping Report on London Borough of Lambeth	2008	▪	▪	▪	60PD
61	Local Development Framework: Core Strategy and Site Allocations Development Plan Document; Sustainability Appraisal.	BARNET, London Borough; Scoping Report	2008	▪		▪	61PD
62	Sustainability and Social Housing Maintenance. Results of a Questionnaire Survey – Phase 1.	Justine Cooper and Keith Jones	2008	▪		▪	62 RR

63	Sustainable Community Strategy: A vision for our future – 2018	Uttlesford Futures	2008	▪		▪	63PD
64	Sustainability And The Environment	Blackpool Borough Council	2008	▪	▪	▪	64PD
65	Sustainability Appraisal Supplementary Planning Document: Affordable Housing Unitary Development Plan Policies H10, H11 and H12: The Provision of Affordable Housing	Kirklees Council	2008	▪	▪	▪	65PD
66	Sustainable Urban Development Study	TURLEYASSOCIATE S	2008	▪			66 RR
67	Planning policy: Addendum to the Sustainability Appraisal of the Oxford Core Strategy	Oxford city council	2008	▪		▪	67PD
68	Sustainable Development and Housing Affordability	Sadasivam Karuppannan and Alpana Sivam	2009	▪		▪	68CP
69	Neighbourhood Density and Social Sustainability in Cities of Developing Countries	Seema Dave	2009	▪			69JP
70	Regeneration for Sustainable Communities? Barriers to Implementing Sustainable Housing in Urban Areas	Nessa Winston	2009	▪	▪	▪	70JP
71	Promoting sustainable urban development in Europe: Achievements And Opportunities.	European Commission, Directorate-General for Regional Policy Unit	2009	▪	▪	▪	71PD
72	Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (Cities, Towns & Villages)	Government of Ireland	2009	▪	▪		72PD
73	Affordable Housing in the Context of Social Sustainable	S. Forster-Kraus, R. Reed and Sara Wilkinson	2009	▪	▪	▪	73CP
74	Choice or coercion: dilemmas of sustainable social housing; A study of two developments in Kent	Pickvance, C.G.	2009	▪	▪		74JP
75	Sustainable Construction in Malaysia: Developers' Awareness	Nazirah Zainul Abidin	2009	▪	▪	▪	75CP
76	Sustainability and Social Housing Maintenance Phase 2- Interview Results	Justine Cooper and Keith Jones	2009	▪	▪	▪	76 RR
77	Guiding Principles: 11. Housing	Wirral Waters	2009	▪	▪		77PD
78	The construction of UK sustainable housing policy and the role of pressure groups	Chris Pickvance	2009	▪			78 RR
79	Sustainable Housing: Five Ways to make it affordable	Green Gauge Homes	2009			▪	79PD
80	Sustainable Development Indicators .An Overview of relevant Framework Programme funded research and identification of further needs in view of EU and international activities	Camilla Adelle, Marc Pallemaerts	2009	▪		▪	80 RR

81	The Sustainability Challenge: Implementing Change that Doesn't Cost the Earth	Mike King Chris Church and Steve Evison	2009	▪	▪	▪	81 RR
82	Sustainability in the Housing Development Among Construction Industry Players in Malaysia. <i>The Journal of Global Business Management</i> Vol. 5, 15, pp. 1-9.	Said I., Osman O., Shafiei M. M., Razak A. A., and Kooi T. K.	2009	▪		▪	82JP
83	A Case Study Analysis Of Sustainable And Affordable Housing	Pullen S., Zillante, G., Wilson L., Davidson K., Chileshe N., Zuo J., Arman M.	2010	▪	▪		83CP
84	Updated Approved Sustainable Appraisal Scoping Report for the LDF.	Wokingham Borough Council	2010	▪			84PD
85	Sustainable Construction: Principles and a Framework for Attainment.	Hill R.C. and Bowen P. A.	2010	▪		▪	85JP
86	Sustainable Housing and Communities: How the Housing Sector Can Be Involved.	Chartered Institute of Housing in Northern Ireland	2010	▪	▪	▪	86 RR
87	Local Development Framework; Development Plan Document: Sustainability Appraisal Report	London Borough of BEXLEY	2010	▪	▪	▪	87PD
88	Sustainable Housing and Urban Development: the CEB's Contribution	Council of Europe Development Bank (CEB)	2010	▪			88PD
89	Study on the Requirements for Sustainable Settlement Development for Low Income Community in Indonesia	A. M. Pattinaja and F. J. Putuhena	2010	▪		▪	89JP
90	Sustainable Construction as Approach for Housing Affordability in Rural Areas in Developing Countries	Ayman Afify	2010	▪			90CP
91	Essential Ingredients for Sustainable and Inclusive New Communities: Lessons from the US and California	RICS India and Seifel Consulting Inc.	2010	▪			91 RR
92	Star Community Index: Sustainability Goals and Guiding Principle	Local Governments for Sustainability USA	2010	▪	▪		92PD
93	Future North West: Our Shared Priorities' Sustainability Assessment	Scott Wilson	2010	▪	▪		93 RR
94	Waterloo Station Development Brief: sustainability Assessment	Scoping Report on London Borough of Lambeth	2010	▪	▪	▪	94PD
95	The sustainability of affordable housing	Sivam, A. and Karuppanan, S.	2010	▪		▪	95CP
96	Sustainable Asset Management (Sam) Decision Making: An Exploration Of Current Practice	Anthony Higham and Chris Fortune	2011	▪		▪	96CP
97	Sustainability and Housing Provision in Malaysia	Tec-Hong Tan	2011	▪		▪	97JP
98	Low-Cost housing in Malaysia: A Contribution to Sustainable Development?	Zaid, N.S.M. and Grham, P.	2011	▪			98CP
99	Key Sustainability Objectives	MEPC	2011	▪			99PD

100	Addressing the Barriers to Sustainable Design in the Process of Developing Multifamily Affordable Housing in Minnesota	Rosemary Dawn Dolata	2011	▪	▪	▪	100TH
101	Sustainable Housing, Population Growth and Poverty: The Implications on Lagos Mega City	Ola E. Aluko	2011	▪		▪	101JP
102	Achieving Sustainable Housing Development in Nigeria: A Critical Challenge to Governance	Adesoji David JIBOYE	2011	▪			102JP
103	Scoping Paper Sustainable Building Practices for Low Cost Housing: Implications for Climate Change Mitigation and Adaptation in Developing Countries	UN Habitat. Shelter Initiative for Climate Change Mitigation and Adaption (SICCMA).	2011	▪	▪	▪	103PD
104	Sustainability appraisal (including strategic environmental assessment) of neighbourhood plans	Riki Therivel, Steve Smith, Mark Fessey, James Allan, Marina Johnson.(sustainability consultants)	2011	▪			104 RR
105	Local development Framework. Core Strategy Sustainability Appraisal Scoping Report	Basildon Borough Council	2011	▪	▪	▪	105PD
106	Leadership In Construction Organizations And The Promotion of Sustainable Practices	Alex Opoku, Chris Fortune	2011	▪		▪	106CP
107	Issues in Sustainable Housing 1st “Policy meets research”	Pål Strandbakken	2011	▪			107CP
108	Stakeholder Views of the regulation of affordable housing providers in Australia.	Max Travers, Tony Gilmour, Keith Jacobs, Vivienne Milligan and Rhonda Phillips	2011	▪		▪	108 RR
109	Sustainable Housing For Sustainable Cities: A Policy Framework For Developing Countries	UN-Habitat	2012	▪	▪		109PD
110	Developing Sustainable Affordable Housing: A Project Level Analysis.	Wiesel, L.; Davidson, G.; Milligan, V.; Phibbs, P.; Judd, B. and Zanardo, M.	2012	▪	▪	▪	110 RR
111	Woodcote Neighbourhood Plan: Sustainability Appraisal	Woodcote Local Council	2012.		▪	▪	111PD
112	Wiltshire Local Development Framework Sustainability Appraisal Scoping Report	Wiltshire Local council	2012	▪	▪		112PD
113	West Sussex Waste Local Plan Sustainability Appraisal	West Sussex local Council	2012	▪			113PD
114	Core Strategy Sustainability Appraisal Scoping Report Non-technical summary Your Vale - Your Future	Vale of White Horse District Council	2012	▪	▪		114PD
115	Planning For Housing – The Potential For Sustainable Communities.	The Chartered Institute of Housing	2012	▪			115RR
116	Sustainability Appraisal Scoping Report (Thame Town Plan)	Tibbalds Planning and Urban Design	2012	▪	▪	▪	116PD
117	Balancing the need for affordable housing with the challenges of sustainable development in South	Fionn MacKillop	2012	▪	▪	▪	117CP

	East Queensland and beyond						
118	Development Management Document Sustainability Appraisal SCOPING REPORT	London Borough of Haringey	2012	▪	▪	▪	118PD
119	Core Strategy Sustainability Appraisal Scoping Report – Your Vale – Your Future	Vale of White Horse District Council	2012	▪	▪	▪	119PD
120	Investment Appraisal Tools And Sustainability Evaluation In Social Housing	Anthony Higham and Chris Fortune	2012	▪	▪		120CP
121	Lowering Co2 Emissions In The New Build Social Housing Sector: A Spanish Case Study	Mark Downey	2012	▪	▪		121CP

APPENDIX C: QUESTIONNAIRE

RESEARCH TOPIC: DEVELOPMENT OF A CONCEPTUAL FRAMEWORK FOR SUSTAINABLE SOCIAL HOUSING PROVISION (SSHP) IN THE UK

Questionnaire survey instructions

- There is no right or wrong answers to the questions in this survey. Select the most appropriate answer for each question based on your view/experience.
- Select or tick the most appropriate answer for each question based on your view/experience.
- There may be questions which appear irrelevant or impertinent. However, I would like you to
- attempt to answer all questions as each question is asked to achieve a stated objective. If there are questions which you are unwilling or unable to answer, then please continue to answer the remainder of the questions.
- Please forward the completed questionnaire in the enclosed self-addressed envelope.

SECTION 1. GENERAL INFORMATION

1. Your Present Job Title:

.....

2. How would you describe the type of housing sector your company is involved?

- Private/Market Housing
- Public Social Housing (local/municipal/central government)
- Private Social Housing
- Private Sustainable Social Housing
- Public Sustainable Social Housing
- Housing Cooperative
- Others

.....

3. How many years of experience do you have in the housing sector?

- 0– 5 years
- 6 – 10 years
- 11 - 15 years
- 16- 20 years
- More than 20 years

4. How many people are employed by your Association?

- 1 – 50
- 51 - 100
- 101 – 200
- 201- 500
- above 500

5. How is ‘Sustainability/Green need’ important to your organisation?

- Very Unimportant
- Unimportant
- Moderately Important
- Important
- Very Important

Within the context of this research:

“Social housing is a form of housing provided by governments or non-profit organisations using public and/or private funds for the benefit of many households, based on degree of need, made available at below market price with the delivery of social service or not-for-profit motives on a short or long term basis”

“Sustainable social housing is housing that is made affordable by governments or non-profit organisations through various assisted programmes, built with environmental-friendly materials, have a long-term economic, environmental and social benefits without an increased life-cycle cost, and allowing the future generations to meet their housing needs”.

SECTION 2.CONSTITUENTS, BARRIERS AND RECOMMENDATIONS FOR SUSTAINABLE SOCIAL HOUSING PROVISION

6. How important do you think ‘Achieving Sustainability’ is in Social Housing?

- Very Unimportant
- Unimportant
- Moderately Important
- Important
- Very important

7. To what extent do you agree the following are the Key Constituents for achieving Sustainable Social Housing from Economic, Environmental and Social Sustainability perspectives? Rate in the Table below as follows:

1 = Strongly Disagree 2 = Disagree 3 = Neither Disagree/Agree 4 = Agree
5 = Strongly Agree

Constituents	1	2	3	4	5
From Economic perspective					
Affordability of Social Housing by subsidising the costs of provision, purchase, rent and mortgage loan rates etc.					
Ensure Adequate funding to enable the public and private sectors Provide Adequate Sustainable Social Housing for meeting Housing Need of Every Household.					
Economic Design of mixed development and flexible structures that promotes Efficient Use of Resources and minimises future maintenance and expansion costs.					
Appropriate Construction Technology to allow for a refurbishment, minimise waste, protect the environment, ensure the construction of sustainable social housing that meets housing needs.					
Good Governance for promoting Economic Growth that allows for the provision of adequate Sustainable Social Housing that meets housing needs.					
Efficient Management of housing provision activities during construction and usage to minimise Whole-Life Cost and ensuring continuity and benefits to stakeholders.					
Efficient Economic Planning to ensure the Provision of Infrastructure/ Social Services like roads, water, efficient energy, rail services, etc.					
Effective Legal and Administrative Frameworks for enhancing efficient implementation and control of social housing provision activities like procurements, award of contracts and distribution.					
Any other (specify & rank)					
From Environmental perspective	1	2	3	4	5

Environmental Protection by adopting construction technique that Uses Renewable Energy Resources like wind or solar, Minimises Waste Generation and encourages the use of Recyclable Building Materials and ensuring that Polluter Pays for the Act.					
Adopt Appropriate Design for simple and flexible construction including the use of building materials that meet local climatic and environmental conditions.					
Effective Land Use Planning that promotes Efficient use of Natural Resources and incorporating the Use of Alternative Transport Modes like pedestrian, cycling and disabled routes including public bus services					
Use of Environmental Friendly Materials that are durable and meet local housing needs without degrading the environment.					
Any other (specify & rank)					
.....					
From Social perspective	1	2	3	4	5
Promote Equity by ensuring equal distribution, social justice, Gender Equality, women empowerment and meet the needs of the less-privileged households in the society.					
Social housing that promotes Social Cohesion through mixed development for residents with different economic, cultural and social backgrounds using common social facilities: sports, market, transport, health and education.					
Stakeholders' Participation by involving them in the development process and encourage community participation in the decision making activities.					
Minimise poverty through social housing programme that engages community members in the construction activities and provide them with Skills Acquisition and Job Opportunities.					
Social housing that enjoys a good range of Social Services like public transport, health, education, security network, water and electricity					
Ensuring Welfare and Quality Life by providing health and recreational facilities within social housing environment.					
Community Development and Good and Quality Housing Provision for meeting the needs of every household and creating the Sense of a Place to Live.					
Ensuring Public Awareness through social housing programme that provides avenues for educating residents on how to accept and live a sustainable lifestyle in their production activities and consumption culture.					
Ensuring Security of Lives and Property by creating a safe and secure housing environment for the residents and their property.					
Any other (specify & rank)					
.....					

8. Please indicate how much you agree or disagree with each of the following as a Barrier to the implementation of Sustainable Social Housing?

1 = Strongly Disagree 2 = Disagree 3 = Neither Disagree/Agree 4 = Agree

5 = Strongly Agree

A.1 Barriers - Economic	1	2	3	4	5
Poor Affordability and Inadequate Consideration for a whole-life value of buildings, which increases costs of occupation to the residents					
Poor Legal and Institutional Frameworks arising from bureaucracy and inability of the public institutions to properly co-ordinate the provision of sustainable social housing and deal with financing laws, building codes including proper enforcement of rules and regulations.					
Poor Governance, Development Plan, Provision of Infrastructure and Social Services including Lack of Incentive to providers hinder economic growth, demographic control, adequate provision and housing affordability.					

Inadequate Supply of social housing causes high costs and failure to properly meet increasing demand and residents' needs.					
Lack of Appropriate Technology to ensure sustainable construction, proper maintenance and waste reduction including low energy consumption and use of recyclable materials.					
Inadequate Funding due to poor budgetary allocation, inadequate government subsidies, financial assistance and poor revenue generation.					
Poor Design and Maintenance Strategies are impairing achieving sustainability in social housing provision.					
Inadequate research works for promoting quality, funding strategies and residents' satisfaction.					
Any Other (Specify & rank).....					
A.2 Barriers - Environmental	1	2	3	4	5
Poor Land Use Plan mostly causes inadequate allocation and misuse of land for sustainable social housing provision.					
Poor Environmental Protection due to gas emission and excessive energy usage and waste generation.					
Poor Accessibility and Inadequate Alternative Transport Modes like pedestrian, cycling and disabled routes including public bus services					
Use of Poor Quality Materials and Non-usage of Renewable resources					
Waste of Natural Resources such as land resources and water in construction and at homes					
Any Other (Specify & rank).....					
A.3 Barriers - Social	1	2	3	4	5
Poor Public Awareness and lack of educative data are contributing to the lack of necessary supports by the residents, community members and political class for achieving sustainability in social housing provision.					
Poor Education, Skills Development and Employment generation hinder the use of proper technology and are causing the use of poor workmanship in social housing provision.					
Poor Social cohesion is making some social housing estates to be stigmatised and mostly regarded as poor peoples' houses.					
Lack of Stakeholders' Involvement in the development and decision making processes of sustainable social housing.					
Poor Social Service Provision, Inadequate Well-Being Facilities and Safety Measure are encouraging the rate of crimes that constitute a threat to lives and property of the residents in some social housing environment.					
Any Other (Specify & rank).....					

9. Please indicate how much you agree or disagree with each of the following Recommendations for achieving Sustainable Social Housing?
1 = Strongly Disagree; 2 = Disagree; 3 = Neither Disagree/Agree; 4 = Agree;
5 = Strongly Agree.

B.1 Recommendations for Improvement - Economic (From Literature Review)	1	2	3	4	5
Provide Appropriate Policy, Legal and Institutional Frameworks to ensure a holistic approach, due process in the procurement and award of contracts, including building control laws, efficient land use planning and assessment of sustainable social housing development activities.					
There is need for Adequate Funding through subsidies, mortgages and partnership arrangement for ensuring Affordability and Adequate Provision of					

sustainable social housing for Mixed-uses and meeting needs.					
Application of the Appropriate Technology for construction, Maintenance and Management strategies, conservation of energy and ensuring environmental protection within sustainable social housing environment.					
Appropriate Planning and Design for social cohesion, flexibility and Efficient Use of Resources by incorporating adequate social services in the development programmes.					
Promote Research Works for encouraging the use of modern technology for achieving sustainability in social housing provision.					
Good Governance for promoting Economic Growth and Urban Development Strategies through the provision of adequate sustainable social housing that creates employment opportunities and allows for the Provision of Incentives to Providers.					
Please provide any other recommendations for achieving Sustainable Social Housing:					
.....					
B.2 Recommendations for Improvement – Environmental (From Literature Review)	1	2	3	4	5
Ensuring Environmental Protection, Polluter Pays for the Act and energy conservation.					
Ensuring Good Accessibility and provision of adequate Alternative Transport Modes like pedestrian, cycling and disabled access routes and public bus services.					
Use of Appropriate Land Use Development Plan for avoiding misuse and excessive use of land, human and financial resources.					
Ensure the use of Appropriate Materials – sustainable and environmental friendly, for reducing maintenance and life-costs.					
Please provide any other recommendations for achieving Sustainable Social Housing:					
.....					
B.3 Recommendations for Improvement – Social (From Literature Review)	1	2	3	4	5
Providing Employment Opportunities, Skills Acquisition and Education through apprenticeship, training, seminars, and advertisements for creating Awareness for stakeholders on the importance of achieving sustainability in social housing with the use of appropriate technology for its development, maintenance and usage.					
Ensure Equity distribution, Social Cohesion, gender equality and Stakeholders’ Participation with an Opportunity of a Choice in the development and implementation processes of social housing.					
Ensure Security of Life and Property for promoting residents’ satisfaction and the Sense of a Place to Live.					
Promote adequate Provision of Social Services like roads, water, education, health, electricity and rail for promoting sustainable social housing provision.					
Please provide any other recommendations for achieving Sustainable Social Housing:					
.....					

10. Please, identify three ingredients that you expect to see in any ‘sustainable social housing project’ for you to regard it as a sustainable development.

- a)
- b)
- c)

THANK YOU for taking the time to complete the questionnaire!

**APPENDIX D: CONSTITUENTS, BARRIERS AND RECOMMENDATIONS FOR
ACHIEVING SUSTAINABLE SOCIAL HOUSING PROVISION
(SSHP) - See the Attached Disc**

**APPENDIX E: ACHIEVEMENTS AND PUBLICATIONS DURING THE COURSE OF
THE PHD**

Achievements:

Progress Postgraduate Research Grant, University of Central Lancashire, UK, 2012/2013.

Best Poster Presentation Award at the Annual Graduate Research Poster Presentation of the Grenfell-Baines School of Architecture, Construction and Environment, University of Central Lancashire, UK, 2014.

Conference papers published:

Oyebanji, A. O. Akintoye A. and Liyanage C. L. (2011): PPP Approach: A Panacea to urban housing inequalities in developing counties – A case study of Nigeria. *A paper delivered at the CIB TG72/ARCOM Doctoral Research Workshop Programme, University of Central Lancashire, Preston, U.K. on Wednesday 12 October 2011.*

Oyebanji, A. O., Akintoye A. and Liyanage C. L. (2013) Sustainable Social Housing Provision: Public-Private Partnerships as a Viable Option. *Delivered at the International Conference on PPP Body of Knowledge (P3Book) held at the School of Built and Natural Environment, University of Central Lancashire, Preston, UK on 18-20 March 2013.*

Oyebanji, A. O., Akintoye, A., and Liyanage, C. L. (2013). Barriers to Sustainable Social Housing Provision. *Delivered at the International conference 'Global challenges in Public Private Partnerships: cross-sectoral and cross-disciplinary solutions?' 6-7 November 2013, Belgium.*

Presentations:

Oyebanji, A. O. (2012). Public-Private Partnerships in Sustainable Social Housing Provision, Seminar Series, Grenfell-Baines School of Architecture, Construction and Environment, University of Central Lancashire, UK.