Quality management framework for government social housing construction in South Africa

Christopher Amoah
Department of Quantity Surveying and Construction Management, University of the Free State, Bloemfontein, South Africa

Received 28 October 2022
Revised 28 June 2023
Accepted 10 July 2023

Abstract

Purpose – In addressing the housing deficits for the less privileged citizens, the South African government began constructing social housing after coming to power in 1994. However, the construction of these houses is bedevilled with many issues; prominent among them are poor quality of the constructed houses. This study seeks to develop a quality management framework for achieving quality and efficiency in public-sector housing construction, a hallmark of the country's procurement goals.

Design/methodology/approach – Telephone interviews were conducted with construction professionals involved in constructing government social houses across South Africa, chosen randomly. The data gathered were analysed using the content analysis method.

Findings – The study found that the most significant cause of poor quality government-constructed social housing is multifaceted, categorised into project management-related, procurement-related, contractor-related, corruption-related and political-related.

Practical implications – Failure to develop and implement a quality management framework on government-constructed social housing leads to poor quality social housing.

Originality/value – The study has identified quality-related issues and has developed a Quality Management (QM) framework for the stakeholders involved in the construction of the houses to guide them in the project implementation process to ensure project success and quality standards.

Keywords Quality management, Social houses, Projects implementation, Quality standard, Government

Paper type Research paper

1. Background

Since 1994, after the African National Congress (ANC) took the management of South African governance, housing provision has had a significant role in policy decisions. This was due to the massive housing shortages identified, especially among previously disadvantaged citizens (Tagg, 2012). As a result, the government formulated and approved a white paper on housing provisions for less privileged individuals in 1994. The spirit of the housing white paper is as follows;

> Housing the Nation[. . .][. . .]is one of the greatest challenges facing the Government of National Unity. The extent of the challenge derives not only from the enormous size of the housing backlog and the desperation and impatience of the homeless, but stems also from the extremely complicated bureaucratic, administrative, financial and institutional framework inherited from the previous government. (Department of Housing, 1994).

The meaning of housing has changed philosophically over the years from a mere redress to building assets for people with low incomes, indicating people's citizenship rights and a

International Journal of Building Pathology and Adaptation
Vol. 41 No. 6, 2023
pp. 217-236
Emerald Publishing Limited
2398-4708
DOI 10.1108/IJBPA-10-2022-0169

symbol of being recognised by the state (Van Der Byl, 2015). One of the UN's Sustainable Development Goals (SDGs) is to ensure innovation in the infrastructure delivery among countries to reduce poverty, protect the planet, and ensure all people enjoy peace and prosperity. Like others in Africa, the South African government is battling to provide adequate houses for citizens and meet quality standards. The income levels of many African countries are low; thus, most citizens cannot access funds privately to acquire houses, thus relying on the central government for homes. Therefore there must be an innovative way to manage the supply of these houses needed by citizens without compromising quality standards. Financial resources available to governments globally are not unlimited; thus, an effective quality management framework for infrastructure construction, including houses, must be considered. The Science, Technology and Innovation Strategy for Africa 2024 document indicates pillars for success as quality infrastructure provisions and/or upgrading, professional enhancement and technical competencies and innovation. Again, the National Planning Commission (2008) states;

> No political democracy can survive and flourish if the mass of our people remain in poverty, without land, without tangible prospects for a better life. Attacking poverty and deprivation must therefore be the first priority of a democratic government. (National Development Plan – 2008, p. 24).

The African Union (AU) Agenda 2063 also proposes domestic resource mobilisation paving the way for sustainable development that meets the quality standard to safeguard the meagre state resources (Casazza, 2015). Therefore, the government must harness effective ways to fulfil these goals and objectives set by global institutions and governments in many countries, including South Africa. According to the Republic of South Africa (2014), people are increasingly moving to the primary cities; thus, the best approach to managing resources is to tackle these issues judiciously. Studies indicate that the expectations of social housing beneficiaries in South Africa have not been met (Amoah *et al.*, 2021, 2022); at the same time, they are not satisfied with the quality of the houses allocated to them (Amoah *et al.*, 2021, 2022; Aigbavboa and Wellington, 2012). For instance, a study by Amoah *et al.* (2020a, b) identified project management deficiencies in the construction process of social housing in South Africa, causing quality-related issues concerning the building components such as cracked walls, plaster, painting, door and window frames, floors and floor finishes among others.

A study of the literature on housing provision in South Africa indicates that many scholars have concentrated on the challenges and the beneficiaries' satisfaction (Amoah *et al.*, 2020a, b, 2021, 2022; Aigbavboa and Wellington, 2012; Moolla *et al.*, 2011; Jiboye, 2012), effects of homeownership on individuals (Diaz-Serranco, 2009), without coming out with framework to resolve quality management policies to curtail the identified problems. This study seeks to develop a quality management framework for achieving efficiency in public-sector housing construction, a hallmark of the country's procurement goals.

The AU Agenda 2063 proposes domestic resource mobilisation to provide sustainable infrastructure. The South African government in 1994 has been constructing houses for the less privileged to fulfil the goals and objectives set by global institutions and governments. However, the project implementation has been characterised by many challenges, among them being poor quality of the final deliverables, resulting in the wastage of meagre government resources, thus preventing the government from adequately achieving the project objectives. Therefore, there is a need to identify a practical quality management framework for project implementation to ensure sustainability and cost-effectiveness in the construction process. This study sought to identify the causes of quality challenges in social housing construction in South Africa and to develop a quality management framework for project implementers to achieve quality and efficiency in public-sector housing construction.

2. Literature review

2.1 Social housing in South Africa

Housing provision in South Africa became profound during the campaign to seek power by the ANC government before 1994 due to past apartheid practices that sought to disregard non-white citizens from the government housing scheme, resulting in massive shortages for most citizens (Tagg, 2012). The government's main objective was to provide houses for individuals the apartheid government discriminated against and resolve housing disparities (RSA, 2014). Thus, since 1994, the government has been trying to actualise section 26 of the 1996 constitution, which enshrines access to adequate housing for every citizen. Although the ANC has made some strive since 1994 by providing about 2.3 million houses to about 11 million people after assuming power. Nevertheless, the ANC government has not achieved adequate housing provisions to overcome the identified deficit due to many problems, including a lack of national resources (Tissington, 2011).

According to Odia (2012), the model and policy addressing affording housing provisions should have several principles to ensure successful implementation. Prominent among these principles are;

(1) It must support low-income groups for economic development, including proximity to job opportunities, markets, transport and empower emerging entrepreneurs in housing construction and services.

(2) It must ensure the housing beneficiaries' involvement in consultation, information dissemination, training and skill transfer.

(3) It must ensure residents' security of tenure

(4) It must be facilitated, supported and driven by the national government

(5) It must ensure transparency, efficiency and accountability in the administration and management processes

(6) It must ensure that best practices and standards are complied with during the housing delivery process

(7) It must ensure effective public funds and resources or facilitate private sector participation.

Social housing provision in South Africa has metamorphosed in the post-apartheid era, where the government is now heavily involved in constructing houses for the less privileged, other than the beneficiaries being made to construct their houses with the government only serving as an advisory agent (Ngwenya, 2016). However, despite the efforts of the government and good intentions of the programme, the implementation outcome has not been desired because of government incapacity and inadequate comprehension of the programme objectives, corrupt activities of the programme implementers and unethical conduct among the project stakeholders (Ngwenya, 2016). After reviewing the original housing programme after 10 years of implementation, a new housing programme called Breaking New Ground (BNG) was outdoored by the Department of Housing (DOH) with similar objectives but also to ensure the achievement of sustainable houses (DHS, 2009). BNG concept suggests that settlement should be located in a good place, planned well and nearer the economic activities and make it possible for the housing beneficiaries to be part of the construction process (DHS, 2009).

After the introduction of BNG, the government again came up with the Peoples' Housing Process (PHP) aimed at making the proposed housing beneficiaries construct the houses themselves, with the government assisting them with a serviced land where the development

will take place (Department of Human Settlements (DHS, 2010). The PHP concept also allowed individuals and groups to have absolute control of the housing development regarding the location, tenure, services and amenities, devoid of engaging external contractors to construct the houses. These two new concepts have faced many challenges, including poor project delivery and quality issues.

2.2 Social housing provision challenges

Sicilia housing programmes aim to improve the living conditions of low-income households. Numerous global problems have been experienced in subsidised housing projects and urban infrastructure construction (Burgoyne, 2008). According to Kowaltowski *et al.* (2018), many questions have been raised concerning the quality and sustainability of houses constructed under social housing programmes. In a study of the inhabitants of squatter settlements in Nigeria, Anierobi and Obasi (2021) identified issues such as the poor government attention to citizens' housing needs leading to the spreading of informal settlements. They thus recommended the church–government collaboration in addressing the housing challenges. Chukwujekwu (2006) asserts that the provision of sustainable social housing in Nigeria has experienced many problems over the years; prominent among them are escalation of material cost, lack of commitment by government, profit-driven attitude by private contractors involved, and corruption and over the pricing of contract amounts for the housing projects. It has been identified by Graham (2015) that many policymakers on social housing have wrong perceptions; among them are expensive urban land, high rental values, low household income, land registration challenges, etc. Graham argues that these wrong assumptions limit the government's ability to pay attention to social housing construction in urban areas in sub-Saharan African countries. In support of Graham's views, Ayedun and Oluwatobi (2011) state the constraints of social housing construction as lack of adequate regulation and legislation for housing, low government priority given to housing, lack of new construction methods acceptability, unwillingness to accept new materials, lack of qualified construction managers and skilled artisans and lack of adequate financial support from the government. According to Kaakinen and Turunen (2021), Finland's government policy on social housing for homeless citizens has significantly addressed housing deficits. Nevertheless, there are still challenges, as no funding is purposefully earmarked for other associated services. These challenges, if not rectified, may lead to inadequate social provisions that may not lead to the satisfaction of the beneficiaries. In Ecuador, Maniglioa and Casado (2022) accused the government of abandoning citizens' housing rights enshrined in the constitution, leading to housing inequalities among the citizens.

In South Africa, since the inception of the social housing policy in 1994, there have been many complaints and challenges propounded by housing beneficiaries and scholars. For instance, in reviewing the policy implementation after the first two years, Goodlad (1996) suggested that an effort to induce private, public and communities in the housing development engagement brings both a challenge and opportunity. Therefore, he describes the failure to develop a project implementation model that meets the needs of the poor and sustainable housing as a challenge. Again, Gilbert (2002) study identified problems such as the construction of buildings with small rooms and poor-quality units outside the main cities and towns, thus challenging the programme's feasibility in alleviating poverty as proposed. Most houses constructed have also been identified as structurally poor, lacking basic amenities, health facilities and other essential services (Donaldson, 2001). In its report, DHS (2009) recognised the strives made by the government on housing provision to the citizens and mentioned challenges such as the poor nature of the constructed houses and their locations and inadequate provision of social and economic amenities. Likewise, the South African Catholic Bishops' Conference (SACBC) (2017) presentation on the success

and failures of social housing mentioned issues such as poor projects locations, poor quality of the houses, lack of tenant maintenance plan, illegal housing occupations, improper administration practices, lack title deeds provision and illegal sale of the houses. Again, it was revealed in the presentation that an amount of R121,870,000 was used to repair 21,467 houses in Free State alone and nationwide, and an amount of R2,129,950,000 was used for housing repairs between the years 2012 and 2014 due to the poor nature of the constructed houses. The statistics indicate that the social housing programme has not been rosy since its introduction.

Manomano *et al.*'s (2016) findings also mention problems in the social housing provision, including corruption and mismanagement, the small nature of the housing structures, the use of poor housing material, poor location of housing projects, lack of involvement of stakeholders and beneficiaries in the housing projects and misuse of houses by the beneficiaries. They suggested effective programme monitoring and evaluation to address the challenges. Again, a study by Amoah *et al.* (2020a, b) identified poor climate conditions, inability to control noise, inadequate bedrooms sizes, kitchen, lounge area, toilet and bath, and the number of rooms, thus dissatisfied the beneficiaries. Again, Amoah *et al.* (2021, 2022) suggest that although the government was able to meet some expectations of the housing beneficiaries, there are other areas where their expectations still need to be met. These areas are a safe environment, houses with pleasing finishes and fittings, a good road network, and adequate housing to accommodate family sizes. Thus, the programme's objective of providing decent accommodation has been a myth. According to Amoah *et al.* (2022b), these challenges associated with social housing provision resulted from a lack of end-user consultation and poor project implementation. However, Batra (2021) suggested Public–Private Partnership (PPP) as a potential solution for social housing supply with support from the state.

2.3 Quality management as a tool for successful and sustainable project

Recently there have been improved efforts in applying quality management (QM) practices in the construction industry to enhance project performance (Alencastro *et al.*, 2019). Quality means achieving a project's legal, aesthetic and functional requirements. According to Ning and Gao (2021), QM can be exploitative or explorative, which can, either way, be achieved by obtaining the stated requirements adequately and completing a project that meets the set requirements. The exploitative QM deals with controlling QM methods to attain a high level of efficacy, whilst explorative QM is concerned with experimentation and innovative solutions. Due to rapidly changing globalisation, organisations strategically make changes in the project implementation arena, paying more attention to QM optimisation to achieve project success. Therefore the ability of an organisation to respond to environmental changes through proactive, continuous improvement has been recognised as the determinant of organisational success in project execution (Gomes *et al.*, 2020).

Project managers and implementers have adopted QM to ensure the quality of project outcomes and deliverables. Thus QM principles should be customer-centred teamwork and continuous improvement, and a formal project management methodology instituted by the project team to ensure project quality and success (Orwig and Brennan (2000). However, according to Alencastro *et al.* (2019), where projects use QM procedures that focus on visuals, defects are bound to impair the performance of projects if not corrected. Thus despite the quality control measures propounded by the client, contractors and agents, the quality issues could not be eliminated during the construction phases of projects in the UK. Again building quality is usually different from specifications due to a lack of quality management systems (QMS), thus affecting building performances in most cases (Budayan and Okudan, 2022). Thus, implementing QMS in the construction sector is often challenging. Jung and Wang

(2006) state that the fundamental quality factors as top management commitment, vision and strategy, organisational quality culture, customer relationship management, quality performance objectives, supplier partnership, supplier involvement, employee empowerment and involvement, human resource capacity, open and transparent communication, the existence of organisation-wide training, availability and use of quality data, employee evaluation based on quality, and use of quality improvement measurement system.

Executing these QM principles will ensure quality standards and project objectives. Therefore, Bryde and Robinson (2007) affirm that firms with QM programmes and standards are significantly more customer-centred in managing their projects than firms with no QM programmes and standards. Again, creating long-term organisational goals and objectives concerning employees, customers, suppliers, society and the organisation, developing strategies and action plans to achieve these objectives, and provide necessary education and training, adopting cultural change, and then allocating resources to implement the action plans enhances firms project implementation success (Mosadeghrad, 2012). According to Budayan and Okudan (2022), there are evidential differences between companies that train employees on quality awareness education, how to use quality management methods and tools, and quality data related to products provided by suppliers and those that do not. The study, therefore, buttresses the need for QM implementation to enhance firms' projects' performance. It is, therefore, not surprising for the proponents of QMS to note that many construction projects have failed to achieve the set objectives, with causes mainly attributed to poor quality implementation methods (Georgiev and Ohtaki, 2020; Hughes *et al.*, 2022; Seetharaman *et al.*, 2006). Thus for the construction industry to effectively address the quality challenges, a better comprehension of the framework is necessary for QM planning development (Budayan and Okudan, 2022). Therefore, there is a need for firms to have a QM framework to guide them in the project implementation process to assure project success and quality standards.

3. Methodology

3.1 Research philosophy and approach

This research adopted the interpretivism paradigm, which believes that for researchers to understand the world in which they live and work, they cannot apply natural science but ascertain the meanings people give to it and interpret them from their viewpoint (Blumberg *et al.*, 2008). This is intended to understand the factors contributing to the quality issues from the experiences of participants involved in the construction of government social housing to ascertain the issues from their point of view; thus, adopting the interpretivism paradigm is more suitable. According to Kabir (2016), research is a strategic way of developing new knowledge and answering research questions by strategically collecting, organising and analysing information for the research to be helpful in decision-making. A qualitative research approach was utilised to overview the problem comprehensively. New strategies are developed in qualitative research while simultaneously obtaining data, as this approach is more creative (Neuman, 2014). A qualitative research approach is adequate because project implementation in social housing is characterised by many challenges, preventing the government from achieving project objectives. Qualitative research allows participants to express themselves on the phenomenon under investigation without restrictions freely. This will help achieve the research objective of developing a quality management framework for achieving efficiency in public-sector housing construction. Amoah and Simpeh (2021) adopted the same approach in their research to understand the implementation challenges of COVID-19 guidelines at construction sites.

3.2 Target population and sampling method

The study encompassed construction professionals in all nine South African provinces with experience in public-sector housing construction. Thus those who have not been involved in social housing construction but are also construction professionals were not included. This was done to assist the researcher in getting valuation insights from those who have experienced the problem under investigation (Creswell, 2014). The researcher intended to get insights from those involved in the social housing construction but only identified some participants; thus, the snowball sampling method was adopted. Snowball sampling allows the researcher to select a few participants who become informants and identify other qualified participants with experience and knowledge about the investigated issue in the target population (Welman *et al.*, 2005). The researcher, therefore, contacted the construction professionals he has previously worked on social houses, who also assisted the researcher to identify other construction professionals with experience in social housing construction. Since social housing construction has been done in all the provinces in South Africa, the researcher ensured that construction professionals operating from all the provinces and having experience in the construction of government social housing participated in the study. This allowed the researcher to get data representative of South Africa. 40 construction professionals were contacted, of which 29 agreed to be interviewed or answer the interview questions. A saturation point, where no new information was received from the participants, was reached at the 22nd participant. However, the research received other participants' responses after the saturation point and thus included them in the analysis. There has been an argument among researchers regarding the appropriate sample size for a qualitative study. Some suggest 5–25 as an adequate sample size population (Sandelowski, 1995; Leedy and Ormrod, 2015), while others suggest 20–40 participants (Hagaman and Wutich, 2017). However, Mayring (2007) states that what matters is when saturation is reached. Thus the sample size of 29 used is justified.

3.3 Data collection methods

Data collection is the method of thoroughly acquiring the desired information with the most negligible inaccuracy possible so that the analysis can produce trustworthy and logical responses (Parveen and Showkat, 2017). Once the sample subjects were identified, they were invited to participate in the study through phone calls and emails. The use of phone calls and email is less expensive and time-consuming. Data was collected through telephone interviews with the selected construction professionals. However, where the participant was unavailable for a telephone interview, the interview questions were emailed toil in and emailed back to the researcher. The construction professionals questioned the causes of poor quality government-constructed social housing. The researcher used semi-structured and open-ended interview questions. According to Blumberg *et al.* (2008), semi-structured open-ended interview questions allows the researcher to know the informant's perspective on the issues under investigation and to find out the information view will confirm the information the researcher already holds. The interview questions are sectioned into three main parts: *Part 1*: Participants' demographics such as gender, job title, experience, highest qualification and province. *Part 2*: Participants' opinions on quality standards in government-constructed social housing. *Part 3*: Causes of poor quality in government-constructed social housing.

3.4 Data analysis

The data was analysed in a descriptive manner utilising an Excel spreadsheet to code the data. According to Lambert and Lambert (2012), the descriptive analysis aims to summarise events experienced by specific individuals in more straightforward terms, which is how the study intends to relay the information collected. The researcher converted the audio and textual information into digital written format through an Excel spreadsheet to enable

analysis. To ensure the accuracy and reliability of the results, the data were analysed comprehensively and objectively following the steps for qualitative contents analysis proposed by Beck (2009), as explained below:

Step 1: Read the written protocol – the researcher read the interview protocol received from the participants severally to acquaint himself with the participants' narrations and to understand the import of the narrations.

Step 2: Extract significant statement – the researcher extracted important statements from the participant's responses and listed them in an Excel spreadsheet. This was done by writing participants' responses verbatim in an Excel sheet to comprehend the statements further.

Step 3: Formulate the meaning of each significant statement – the researcher then identified the meanings of the various statements listed to identify related meanings. This was done by reading and comparing the main imports of the participants' narrations to see where there are agreements among the participants regarding quality issues with social housing.

Step 4: Organise formulated meaning into a cluster of themes – the researcher then grouped the similar meaning of the various statements into themes and sub-themes to make data simple and understandable. This was done by merging similar participants' narrations and identifying the emerging issues under the main issues as sub-themes. This also enables readers to understand the underpinning causes of the main problems (Main themes).

Step 5: Integrate the result into an exhaustive description of the phenomenon – the researcher described the phenomenon based on the themes and sub-themes for further interpretation. This was done by separating the sub-issues raised by the participants and assigning them to the main issues identified from the participants' statements.

Step 6: Return to participants for validation of findings – where the researcher needed further clarifications from the participants, the researcher called or emailed and reshaped the themes after receiving the responses. This was done by allowing the participants to further clarified the statement made during the interview and to ensure the credibility of the themes and sub-themes identified. The contacted participants clarified their statements in the interview questions and provided further clarity to assist the researcher in verifying the frequencies generated for the various themes. The researcher readjusted the themes and sociated frequencies and percentages through this exercise. After the thematic analysis, frequencies and percentages were calculated for the various themes. The demographic features of the participants are indicated in Table 1.

From the demographic analysis, most (52%) are females, and most are project managers (38%). Again, 72% of the participants have over 6 years of work experience, whilst the least educational qualification is the first degree. The level of participants' experiences in the social housing sector also enhanced the validity of the responses received during the interview. Most participants (27%) are from the Free State and Kwa-Zulu Natal. However, the researcher got participants from all the provinces in South Africa, making the findings fairly generalisable.

4. Findings

4.1 Opinions on quality in government-constructed social housing

The researcher asked the respondents to express their opinions on the quality of the social housing constructed. This enabled the researcher to understand the respondent's

Participants	Gender	Job title	Experience	Highest qualification	Province
1	Male	Project Monitor	7 years	BSc Degree	KwaZulu Natal
2	Female	Project manager	5 years	Honours	Free State
3	Male	Construction Manager	8 years	Postgraduate	Gauteng
4	Male	Lecturer	15 Years	Masters	Free State
5	Female	Quantity Surveyor	4 Years	Bachelor	Gauteng
6	Male	Project manager	7 years	Honours	Eastern Cape
7	Female	Property Valuer	6 years	Honours	Limpopo
8	Female	Consultant	3 years	Masters	Free State
9	Male	Survey Technician	9 years	Survey Technician	KwaZulu Natal
10	Male	Senior Quantity Surveyor	23 years	BSc Degree	Gauteng
11	Female	Quantity Surveyor	11 years	Honours	Limpopo
12	Male	Project Manager	2 years	BSc Degree	All
13	Male	Draughtsperson	3 months	BSc Degree	Free State
14	Female	Construction Project Manager	11 years	Btech degree	KwaZulu Natal
15	Female	Quantity Surveyor	8 years	Masters	Mpumalanga
16	Male	Cadastral Officer	6 months	Diploma	KwaZulu Natal
17	Female	Lecturer	12 years	Masters	Free State
18	Male	Project Director	16 years	PhD	KwaZulu Natal
19	Male	Project manager	10 years	Masters	Free State
20	Male	Lecturer/Project manager	18 years	Masters	Eastern Cape
21	Female	Quantity Surveyor	2 years	Honours	Northern Cape
22	Female	Project manager	17 years	Btech degree	KwaZulu Natal
23	Female	Project Manager	7 years	PhD	KwaZulu Natal
24	Female	Junior Quantity Surveyor	6 months	Honours	Western Cape
25	Male	Consultant	20 years	PhD	Eastern Cape
26	Male	Project Manager	8 years	Masters	Northern Cape
27	Female	Quantity Surveyor	10 years	Honours	Free State
28	Female	Quantity Surveyor	10 years	Honours	KwaZulu Natal
29	Female	Construction works inspector	6 years	Btech degree	Free State

Source(s): Created by author

Table 1. Demographics of the participants

perceptions of the quality issues since they have been involved in the construction process. The responses to this question were then coded, and similar responses were grouped into themes. The themes' frequencies and percentages were tabulated and calculated, as shown in Table 2.

Table 2 above indicates the participants' opinions on the quality of government-constructed social housing. 79.31% of the participants indicated the government-constructed social housings are of poor quality making this the highest-ranked opinion. On the other hand, 10.34% of the participants showed satisfaction with the standard of quality. Other participants (3.45%) indicated that the social housings were well-planned and of good quality but poorly designed.

4.2 Causes of poor quality in government-constructed social housing

Participants were then asked to indicate, in their opinion, the causes of the poor quality of the houses constructed. This question was asked to enable the participants to mention the causes based on their experience in the project implementation process. The responses were then thematically analysed into main and sub-themes, as indicated in Table 3.

Table 3 above indicates the causes of poor quality in government-constructed social housing according to the participants. The causes of poor quality are sectioned into five groups; Project management-related causes at 33.33%, Procurement-related at 25.25%, Contractor-related at 19.19%, Corruption-related at 12.12% and Political-related at 10.10%. The groups consist of multiple causes of poor quality observed by the participants in government-constructed social housing.

5. Discussion

5.1 Theme 1: project management-related causes of poor quality

The findings indicated that lack of attention to quality and poor supervision are the most prevalent causes of poor quality in social housing related to project management. The reported lack of attention to quality can be attributed to the contractors' use of cheaper materials than what is specified, as indicated by P15.

> **P15:** Poor supervision and monitoring of the contractors works. - Poor communication between the professional team and the contractor in terms of specifications and errors on plans or drawings.

Profit-driven contractors compromise quality hence the final output of poor-quality constructed social housing (Scheba *et al.*, 2021). Construction activities require adequate supervision to ensure quality requirements are adhered to. Although P15 indicates poor supervision and monitoring of the contractors' work as causes of poor quality standards, we can further attribute the lack of supervision to the lack of quality control personnel in the public sector, as indicated by P11.

> **P11:** Inappropriate construction project management techniques. A lack of quality control personnel in the public sector

When there are insufficient, adequately trained individuals to measure and implement quality control measures on social housing projects, contractors' work is not adequately monitored. These findings were also echoed by Batra (2021), who said that a lack of supervisory structure in organisations and implementing bodies affects the quality of houses constructed. Thus PPP could solve poor supervision and provide good quality houses. The findings also indicated inappropriate construction project management techniques, lack of discipline of government entities, poor work coordination, poor scope management, lack of qualified building manager, poor project team oversight, poor budgeting, poor stakeholder management, late payments to contractors, poor workflow understanding, and poor

Table 2. Participants' opinions on the quality of government-constructed social housing

Opinion on quality standard	Frequency	Percentage
Well-planned	1	3.45
Poor quality	23	79.31
Quality is satisfactory	3	10.34
Good quality	1	3.45
Poorly designed	1	3.45
Total	*29*	*100.00*

Source(s): Created by author

Causes of poor quality Main themes	Sub-themes	Freq	Total freq	Percentage
Project management-related	Lack of attention to quality	7	33	33.33
	Poor supervision	7		
	Inappropriate construction project management techniques	2		
	Lack of discipline of government entities	2		
	Poor work coordination	2		
	Poor scope management	2		
	Lack of qualified building manager	2		
	Poor stakeholder management	1		
	Late payments to contractors	1		
	Poor project team oversight	2		
	Poor budgeting	2		
	Poor workflow understanding	1		
	Poor communication between the professional team and the contractor	1		
	Inexperience managers	1		
Procurement-related	Use of inexperience contractors	14	25	25.25
	Lack of skilled personnel	5		
	Mass production	4		
	Poor builder selection	1		
	Use of cheaper tender price	1		
Contractor-related	Poor building material	14	19	19.19
	"Shortcuts" on material	1		
	Poor workmanship by contractors	4		
Corruption-related	Corruption	9	12	12.12
	Lack of accountability	1		
	Mismanagements of funds	1		
	Fabricated reporting	1		
Political-related	Usage of community members	2	10	10.10
	Lack of policy	2		
	Political interference	2		
	Fragmented legislation	1		
	Pressure to complete the project on time	1		
	Local politics	1		
	Lack of political will	1		
Total		*99*	*99*	*100.00*

Source(s): Created by author

Table 3. Causes of poor quality in government-constructed social housing

communication between the professional team and the contractor as project management related causes of poor quality standards in government-constructed social housing. A study by Ayedun and Oluwatobi (2011) in Nigeria also identified issues such as inadequate regulation and legislation for housing, an insufficient priority by the government, a lack of qualified construction managers and skilled artisans and inadequate financial support from the government as causes of quality issues, supporting these findings. P6 and P12 echoed this view.

P6: Poor budgeting, Limited permanent human resources, Lack of adherence to quality documentation, Fabricated reporting

P12: Poor workflow understanding. • Poor project management • Poor scope management • Poor stakeholder management • Poor definition of done from inception • Poor work coordination

However, Jung and Wang (2006) state that firms and organisations implementing quality standards and project implementation strategies, including end-user relationship management, supplier involvement, employee empowerment, open and transparent communication and quality improvement measurement systems, can produce good quality deliverables. Therefore, the government and project implementers must ensure the institution of a quality management framework and enforce its adherence to the project implementation process to achieve the desired quality standards.

5.2 Theme 2: procurement-related causes of poor quality

The findings also showed that the most prevalent procurement-related cause of poor quality in government-constructed social housing is the appointment of inexperienced contractors, as pointed out by P8. Inexperienced contractors in social housing construction will fail to implement quality measures during the project due to the lack of know-how. They are likely to engage in corrupt activities and utilise substandard building materials, as P8 indicates, to find ways to make a profit, ultimately resulting in substandard social housing.

> **P8:** Appointment of inexperienced contractors, Corruption, Use of substandard building material, Pressure of completing project on time.

P10 attributes the delivery of poor-quality buildings to the use of less skilled personnel and the acceptance of cheaper tenders in a bid for the tenderer to get value for money. P10 concur that the materials used for social housing determine the quality of buildings delivered. Using substandard, poor-quality materials and taking shortcuts on materials leads to the delivery of better-quality government-constructed social housing. For example, not using enough plaster and sand will most likely deteriorate quickly, leading to repairs and rework.

> **P10**: In a bid to get value for money the cheapest tender is always accepted. The tenderer upon appointment utilises less skilled personnel who deliver poor-quality buildings. The materials utilised as well of poor quality, to make up for the poor prices.

P5 also indicates that poor builder selection leads to poor-quality buildings, as builders will only possess some of the skills to deliver good social housing. The selection of the right personnel for building projects is of great significance. It will determine whether or not the client's requirements are realised.

> **P5:** Poor builder selection, Poor building material, "Short cuts" on material, not using enough plaster and sand, etc.

Jung and Wang (2006) suggest that quality management principles must be incorporated into supplier selection, partnership and involvement. Likewise, there should be transparency in the selection process, communication and employee evaluation to achieve product quality standards. The absence of these principles by the project implementers has therefore contributed to the poor quality of the social houses constructed in South Africa.

5.3 Theme 3: contractor-related causes of poor quality

The findings again showed that P7, P18 and P29 encountered poor materials as a contractor-related cause of poor quality in government-constructed social housing. Contractors are found to use poor, low-quality substandard materials to construct government social housing because of the need for more quality supervision by government inspector officers and lack of accountability. Profit-driven contractors will find profit-making ways, such as mismanaging funds on projects and therefore compromising the quality of buildings. P18 indicated poor workmanship by the contractor as a contributing factor to poor quality.

P18: Usage of sub-standards construction materials. Poor workmanship by contractors. Inadequate supervision for check out by government inspector officers.

Poor workmanship is detrimental to construction projects as contractors will not consider the project's quality requirements, which may lead to defective or unfinished work. Competent and motivated contractors are essential to ensure that quality requirements are met, good-quality buildings are constructed, and the tone is set for personnel (Howarth and Watson, 2012). P7 and P29 noted that there is rampant use of poor and low-quality materials by the appointed contractors, probably due lack of supervision and an unconcern attitude by the government departments acting as clients for the construction of these houses.

P29: Use of low quality material. Lack of proper quality supervision. Late quality control or no quality control from client department.

P7 further raised the issue of lack f accountability and project funds by the client's departments in charge of social housing construction as major issues leading to the poor quality of the houses constructed.

P7: Poor materials, Unsurveyed land (Location), Interference, Lack of accountability, Mismanagements of funds.

These findings were also mentioned by Chukwujekwu (2006) that the construction of social housing in Nigeria had encountered numerous challenges in quality due to a lack of commitment by the government to an effective supervisory role and profit-centred contractors engaged in the projects. It has been suggested that many construction projects still need to achieve the set objectives due to poor-quality implementation methods throughout the project lifecycle (Georgiev and Ohtaki, 2020; Hughes *et al.*, 2022). Thus Budayan and Okudan (2022) state that the ability of an organisation and project stakeholders to respond to changes proactively and continuous improvement on quality principles is a determinant of organisational project success. This is because firms that introduce and train workers on quality principles perform better in project execution. Policy implementers and construction professionals involved in social housing construction must ensure contractors always use approved materials to secure the quality standard required for the houses.

5.4 Theme 4: corruption-related causes of poor quality

The participants have mentioned corruption as a cause of poor quality in government-constructed social housing. Corruption is witnessed in numerous construction activities that the participants highlighted, for example, corruption within the tendering process, mismanagement of funds, fabricated reporting and corruptible tendencies between contractors and government officials, which leads to a compromise of good work, causing social housing to be delivered in poor quality as mentioned by P2 and P24.

P2: Corruption, Lack of discipline from government entities, Use of inexperienced contractors, Political interference, Inexperienced seniors are the main causes.

P24: Lack of site supervision. Focus on quantity rather than quality. The corruption within the tendering process. Usage of inexperienced local labour.

Because of a lack of discipline from government entities and fragmented legislation, there is a lack of accountability for corruption activities, leading to the delivery of poor-quality social housing. Contractors and professional teams are rarely accountable for poor workmanship and design in social housing construction. This is made possible by a lack of site supervision and attention to quality issues during the pre-tender or tender stage, as stated by P3.

P3: corruptible tendencies between contractors and the government officials compromising good works. fragmented legislation regarding poor workmanship by contractor or poor design by professional team. lack of skilled personnel. lack of attention on quality issues during pre-tender or tender stage.

The lack of experienced contractors, seniors, local labour and skilled personnel indicates corruption, as officials must pay more attention to the experienced and skilled individuals suitable for delivering quality social housing. Corruption is detrimental to the fabric of society (Vorster, 2013). Chukwujekwu (2006) also mentioned corruption and contract over-pricing as significant factors affecting Nigeria's quality standard of housing projects. Manomano *et al.* (2016) also mentioned several factors inhibiting the quality standards of social houses, including corruption and mismanagement of the project stakeholders. These findings indicate that personal gains among project implementers and executors superseded that of the project beneficiaries, leading to the delivery of poor-quality houses. Thus government spent considerable amounts in some cases to repair the houses short after their construction leading to the waste of public funds (SACBC, 2017).

5.5 Theme 5: political-related causes of poor quality

The study's findings indicated that community members' usage causes the poor quality of government-constructed social housing. Political interference in such projects may put pressure on the use of community members in a bid for job creation, forcing the hiring of more than what is required, which will see contractors utilising substandard materials to incur the cost of community members who most likely lack the necessary skills. The lack of adequate policies causes poor-quality social housing construction. For instance, as indicated by P26, the Treasury Preferential Procurement Policy and Regulations favour the lowest bidder, which results in non-performance and the use of substandard material due to financial limitations. Political interference and local politics cause poor quality of social housing.

P26: The use of forever emerging contractors (BEE) that stands to profit rather than performance and delivering quality work. Procurement policy of government (Treasury Preferential Procurement Policy and Regulations) that normally favours the lowest bidder result non performance and use of substandard material due to financial limitations.

For example, politicians view such constructions as opportunities to benefit their constituents and therefore interfere improperly with regulations and pressure the project's completion, ignoring the construction quality requirements stated by P28.

P28: Pressure of completing projects on time due to elections.

According to Kaakinen and Turunen (2021), social housing construction has encountered challenges, including political accountability and poor fund allocations. These findings seem unique in South Africa as they are hardly seen in the related literature as a significant cause of poor project quality.

6. The implication of the findings

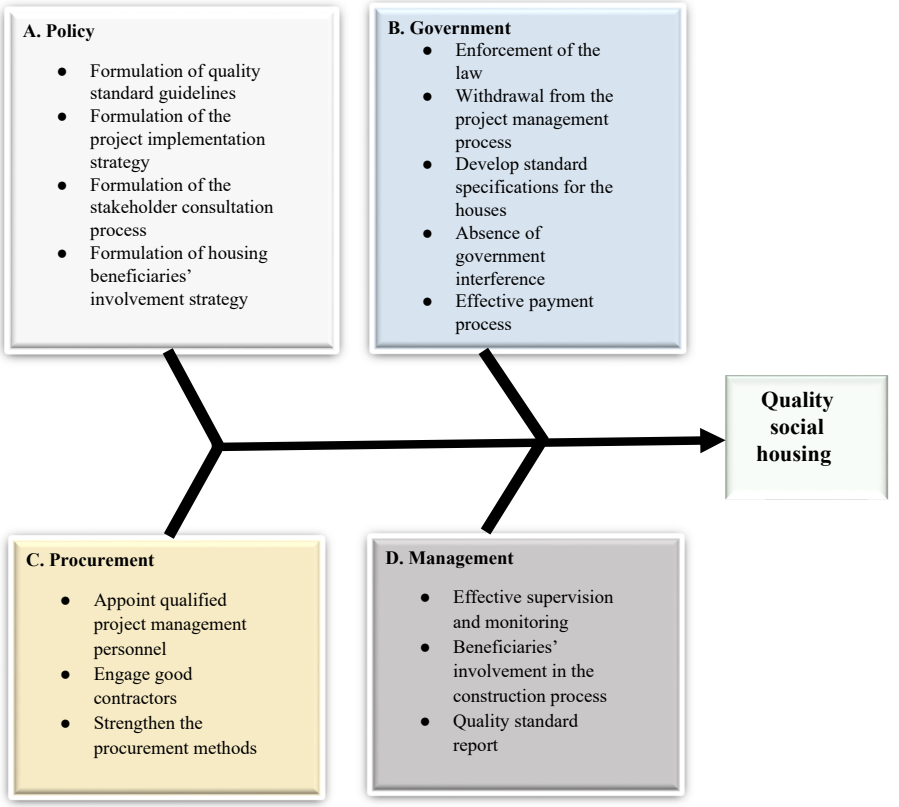
Policy implications: the findings imply that the government policy on social housing in South Africa has not been effective over the decade. This means public resources are being expended to achieve the desired quality standard for the houses constructed for the less privileged. This situation has manifested the need for QM frameworks and principles that the project implementers should have for effective project monitoring and execution. Therefore, they must review the social housing policy and institute measures to address this issue. The proposed framework in Figure will thus help in this regard.

Managerial implication: Project managers must take the necessary steps to ensure effective project supervision to attain the required quality standard. For this to be achieved, there is a need to have a guiding quality management framework that project participants must follow to ensure effective project delivery. Managers who introduce quality standards ensure workers or project stakeholders can adhere to the quality aspect and realise the project objectives.

Theory implications: the findings have indicated that, in theory, the absence of QMS in project execution significantly impacts project performance. Poor project management practices negatively on project execution. Thus, for project implementers to effectively use project resources, there must be a conscientious effort to have a practical framework for guiding stakeholders to ensure the judicious use of public resources and attain the set objectives.

7. Proposed quality management framework

Based on the study's findings, a framework for quality management for social housing construction has been developed, as indicated in Figure 1. The researcher believes that if this framework is genuinely implemented, it will help the government achieve the desired quality



Source(s): Created by author

Figure 1.
Proposed quality management framework for the government social housing

of the social houses, thus preventing the waste of public resources. The framework proposes a policy formulation for the social housing programme governing the standard expected and the project implementation strategy. There must be a policy on how stakeholders and housing beneficiaries should be consulted during the project implementation stages. This will prevent situations whereby project implementers use unapproved materials to construct houses that do not meet the expectation of the end users. It is believed that when project end-user are consulted, they can express their ideas and expectations, which could be incorporated into the design. This will prevent poor project delivery that does not meet the expected purpose, leading to dissatisfaction among them. Likewise, the framework proposes that the government enforce the law and punish those who disregard the procurement laws for their benefits, thereby appointing unqualified contractors and professionals, leading to poor housing delivery. Therefore, standard specifications for all the houses should exist irrespective of the locations where the houses are constructed. This will prevent the decreation among the project executors leading to the use of poor quality materials in some instances, affecting the housing quality. Government must not interfere in the project implementation process, thus allowing the construction professional with knowledge of the building to reduce the corrupt activities which affect the quality of the houses constructed. There should be an effective payment mechanism for contractors to prevent low-quality materials from being procured for project execution due to a lack of funds. Thirdly, the malpractices in the procurement process should be eliminated to ensure that only qualified project managers and contractors are appointed. This will prevent corrupt practices whereby cronies of procurement officials with no experience are appointed. This will ultimately prevent poor quality of the houses delivered as contractors and project managers with experience usually implement practices that will not lead to poor quality, which ruins the organisations' reputation. In terms of management, the framework proposes that there should be effective project supervision and monitoring to prevent abnormalities practised by contractors on the project site.

Also, the housing beneficiaries should be involved during the construction phase as workers. This will enable them to monitor the project and raise their concerns to authorities. Project managers must submit quality management reports regularly to the government department in charge of housing construction. This will enable them to detect and address quality issues before completing the project. This will also help the official detect fabricated report, which has become a significant source of quality issues.

8. Conclusion

The research investigated quality management in South Africa to develop a framework for achieving efficiency and quality standards in public-sector housing construction. For the QM framework to be formulated, causes of poor quality in government-constructed social housing were identified. When asked for their opinion, most participants indicated that the government-constructed social housing is of poor quality. The results revealed the most prevalent cause of poor quality social housing project management-related issues such as; lack of attention to quality, poor supervision, and inappropriate construction project management techniques, amongst others. Procurement, contractor, corruption and political-related issues were also identified as causes of poor quality social housing. The findings indicate the significance of quality management on construction projects. The lack of a QM framework and implementation system for social housing construction is detrimental as there will be no proper measure of the ongoing quality of projects. The study managed to fulfil its objective by developing a QM framework to guide construction professionals in project implementation to assure project success and quality standards. It is recommended that project implementers ensure MQS exists in the project execution and ensure they

effectively adhere to it to achieve the desired quality. Project implementers may adopt the framework developed by this study or use it as a guide to address quality challenges in social housing construction. The study may be limited to South African settings, as the data was solely from South Africa.

References

Aigbavboa, C.O. and Wellington, D.T. (2012), "An appraisal of housing satisfaction in South Africa low income housing scheme", *International Journal of Construction Management*, Vol. 12 No. 1, pp. 1-21, doi: 10.1080/15623599.2012.10773181.

Alencastro, J., Fuertes, A., Fox, A. and de Wilde, P. (2019), "The impact of defects on energy performance of buildings: quality management in social housing developments", *Energy Procedia*, Vol. 18, pp. 4357-4362, doi: 10.1016/j.egypro.2019.01.784.

Amoah, C. and Simpeh, F. (2021), "Implementation challenges of COVID-19 safety measures at construction sites in South Africa", *Journal for Facility Management*, Vol. 19 No. 1, pp. 111-128, doi: 10.1108/JFM-08-2020-0061.

Amoah, C., Kajimo-Shakantu, K. and van Schalkwyk, T. (2020a), "The empirical reality of project management failures in the construction of social housing projects in South Africa", *Journal of Facilities Management*, Vol. 18 No. 4, pp. 417-435, doi: 10.1108/JFM-04-2020-0018.

Amoah, C., Kajimo-Shakantu, K. and van Schalkwyk, T. (2020b), "Satisfaction level of the RDP housing beneficiaries in Bloemfontein, South Africa", *Journal of Construction*, Vol. 13 No. 2, pp. 17-35.

Amoah, C., Kajimo-Shakantu, K. and van Schalkwyk, T. (2021), "Meeting the expectations of the social housing recipients in South Africa: a myth or reality?", *International Journal of Building Pathology and Adaptation*, Vol. 39 No. 2, pp. 218-234, doi: 10.1108/IJBPA-07-2019-0062.

Amoah, C., Kajimo-Shakantu, K. and van Schalkwyk, T. (2022a), "Quality management of RDP housing construction: myth or reality?", *Journal of Engineering, Design, and Technology*, Vol. 20 No. 5, pp. 1101-1121, doi: 10.1108/JEDT-11-2020-0461.

Amoah, C., Kajimo-Shakantu, K. and Van Shalkwyk, T. (2022b), "The level of participation of the end-users in the construction of the RDP houses: the case study of Managing municipality", *International Journal of Construction Management*, Vol. 22 No. 5, pp. 949-960, doi: 10.1080/15623599.2019.1672011.

Anierobi, C. and Obasi, C.O. (2021), "Urbanization and rural-urban migration: toward involving the church in addressing pro-poor urban housing challenges in Enugu, Nigeria", *SAGE Open Journal*, Vol. 11 No. 3, pp. 1-15, doi: 10.1177/21582440211040123.

Ayedun, C.A. and Oluwatobi, A.O. (2011), "Issues and challenges militating against the sustainability of affordable housing provision in Nigeria", *Business Management Dynamics*, Vol. 1 No. 4, pp. 01-08.

Batra, R. (2021), "A thematic analysis to identify barriers, gaps, and challenges for the implementation of public-private-partnerships in housing", *Habitat International*, Vol. 118, pp. 1-12, doi: 10.1016/j.habitatint.2021.102454.

Beck, C.T. (2009), "The arm: there is no escaping the reality for mothers of children with obstetric brachial plexus injuries", *Nursing Research*, Vol. 58, pp. 237-245.

Blumberg, B., Cooper, D.R. and Schindler, S.P. (2008), *Business Research Methods*, 2nd ed., McGraw-Hill Education, Maidenhead, Berkshire.

Bryde, D.J. and Robinson, L. (2007), "The relationship between total quality management and the focus of project management practices", *The TQM Magazine*, Vol. 19 No. 1, pp. 50-61, doi: 10.1108/09544780710720835.

Budayan, C. and Okudan, O. (2022), "Roadmap for the implementation of total quality management (TQM) in ISO 9001-certified construction companies: evidence from Turkey", *Ain Shams Engineering Journal*, Vol. 13 No. 6, pp. 1-11, doi: 10.1016/j.asej.2022.101788.

Burgoyne, M. (2008), "Factors affecting housing delivery in South Africa: a case study of the Fisantekraal housing development project, Western Cape", Unpublished dissertation (MA), University of Stellenbosch, Stellenbosch.

Casazza, A. (2015), "The sustainable development goals and the African union's Agenda 2063: a comparative analysis".

Chukwujekwu, I.E. (2006), "Facilitating low cost housing scheme: which way forward?", *The Journal of the Association of Housing Corporations of Nigeria*, Vol. 1 No. 10, pp. 12-32.

Creswell, J.W. (2014), *Research Design: Quantitative, Qualitative, and Mixed Method Approaches*, 5th ed., SAGE Publication, Los Angeles, CA.

Department of Housing (1994), *White Paper on Housing*, DoH, Pretoria.

Department of Human Settlements (DHS) (2009), *Breaking New Ground Review*, Department of Housing, Pretoria, available at: http://www.dhs.gov.za/ (accessed 7 September 2018).

Department of Human Settlements (DoHS) (2010), *Department of Human Settlements Annual Report 2009-2010*, DHS, Pretoria.

Diaz-Serranco, L. (2009), "Disentangling the housing satisfaction puzzle: does homeownership really matter?", *Journal of Economic Psychology*, Vol. 30 No. 5, pp. 745-755, doi: 10.1016/j.joep.2009.06.006.

Donaldson, R. (2001), *A Model for South African Urban Development in the 21st Century?*, Vista University, Silverton.

Georgiev, S. and Ohtaki, S. (2020), "Critical success factors for TQM implementation among manufacturing SMEs: evidence from Japan", *Benchmarking: An International Journal*, Vol. 27 No. 2, pp. 473-498, doi: 10.1108/BIJ-01-2019-0037.

Gilbert, A. (2002), "Scan globally; reinvent locally': reflecting on the origins of South Africa's capital housing subsidy policy", *Urban Studies*, Vol. 39 No. 10, pp. 1911-1933.

Gomes, P.J., Silva, G.M. and Sarkis, J. (2020), "Exploring the relationship between quality ambidexterity and sustainable production", *International Journal Production Economics*, Vol. 224, 107560, doi: 10.1016/j.ijpe.2019.107560.

Goodlad, R. (1996), "The housing challenge in South Africa", *Urban Studies*, Vol. 33 No. 9, pp. 1629-1645.

Graham, T. (2015), "Housing policy-making in Africa: ten common assumptions", *Habitat International Journal*, Vol. 16, pp. 413-418, doi: 10.1016/j.habitatint.2015.06.003.

Hagaman, A.K. and Wutich, A. (2017), "How many interviews are enough to identify metathemes in multisited and cross-cultural research? Another perspective on guest, Bunce, and Johnson's (2006) landmark study", *Field Methods*, Vol. 29 No. 1, pp. 23-41, doi: 10.1177/1525822X16640.

Howarth, T. and Watson, P. (2012), *Construction Quality Management: Principles and Practice*, Spon Press, Routledge, New York.

Hughes, B., Edwards, D.J., Martek, I., Chileshe, N. and Thwala, W.D. (2022), "Assessing the clerk of works role in delivering quality affordable housing: a UK case study", *Smart and Sustainable Built Environment*, Vol. 11 No. 4, pp. 996-1016, doi: 10.1108/SASBE-01-2021-0015.

Jiboye, A.D. (2012), "Post-occupancy evaluation of residential satisfaction in Lagos, Nigeria: feedback for residential improvement", *Frontiers of Architectural Research*, Vol. 1, pp. 236-243, doi: 10.1016/j.foar.2012.08.001.

Jung, J.Y. and Wang, Y.J. (2006), "Relationship between total quality management (TQM) and continuous improvement of international project management (CIIPM)", *Technovation*, Vol. 26, pp. 716-722, doi: 10.1016/j.technovation.2006.01.003.

Kaakinen, J. and Turunen, S. (2021), "Finnish but not yet finished – successes and challenges of housing first in Finland", *European Journal of Homelessness*, Vol. 15 No. 3, pp. 81-84.

Kabir, S.M.S. (2016), *Introduction to Research. Basic Guidelines for Research*, Edition: First, Chapter: 1, Publisher: Book Zone Publication, Chittagong.

Kowaltowski, D.C.C.K., Muianga, E.A.D., Granja, A.D., Moreira, D.D.C., Bernardini, S.P. and Castro, M.R.A. (2018), "Critical analysis of research of a mass-housing programme. Building", *Research Information*, Vol. 47 No. 6, pp. 716-733, doi: 10.1080/09613218.2018.1458551.

Lambert, V.A. and Lambert, C.E. (2012), "Qualitative descriptive research: an acceptable design", *Pacific Rim International Journal of Nursing Research*, Vol. 16 No. 4, pp. 255-256.

Leedy, P.D. and Ormrod, J.E. (2015), *Practical Research: Planning and Design*, 11th ed., Pearson, Edinburgh.

Maniglioa, F. and Casado, F. (2022), "The right to housing under the new Latin American constitutionalism: progresses and challenges in the Ecuadorian case study", *International Journal of Housing Policy*, pp. 1-13, doi: 10.1080/19491247.2022.2100614.

Manomano, T., Tanga, T.P. and Tanyi, P. (2016), "Housing problems and programs in South Africa: a literature review", *Journal Sociology Social Anthropology*, Vol. 7 No. 2, pp. 111-117.

Mayring, P. (2007), "On generalisation in qualitatively oriented research", *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, Vol. 8 No. 3, pp. 1-10.

Moolla, R., Kotze, N. and Block, L. (2011), "Housing satisfaction and quality of life in RDP houses in Braamfischerville, Soweto: a South African case study", *Urbani Izziv*, Vol. 22 No. 1, pp. 138-143, doi: 10.5379/urbani-izziv-en-2011-22-01-005.

Mosadeghrad, A.M. (2012), "Towards a theory of quality management: an integration of strategic management, quality management and project management", *International Journal of Modelling in Operations Management*, Vol. 2 No. 1, pp. 89-118, doi: 10.1504/IJMOM.2012.043962.

National Planning Commission (2008), "National Development Plan - 2030 Our future - make it work, the presidency", South Africa, pp. 24, ISBN: 978-0-621-41180-5.

Neuman, D. (2014), "Qualitative research in educational communications and technology: a brief introduction to principles and procedures", *Journal of Computing in Higher Education*, Vol. 26, pp. 69-86, doi: 10.1007/s12528-014-9078-x.

Ngwenya, N.T. (2016), "The implementation of South Africa's housing policy in the local sphere: a case study of Mamelodi and Diepkloof", Unpublished dissertation (MPhil), University of Pretoria, Pretoria.

Ning, Y. and Gao, S. (2021), "A resilience framework to explorative quality management in innovative building projects", *Journal of Engineering and Technology Management*, Vol. 62, pp. 1-14, doi: 10.1016/j.jengtecman.2021.101654.

Odia, S. (2012), "Social housing: the South African model", available at: www.urbanlandmark.org/downloads/clipping_tdl_sep2012.pdf (accessed June 2020).

Orwig, R.A. and Brennan, L. (2000), "An integrated view of project and quality management for project-based organisations", *International Journal of Quality and Reliability Management*, Vol. 17 Nos 4/5, pp. 351-363.

Parveen, H. and Showkat, N. (2017), "Data collection", *Quadrant-I (E-Text). Publisher: E-PG Pathshala*, available at: https://www.researchgate.net/publication/319128325_Data_Collection (accessed 8 August 2022).

Republic of South Africa (RSA) (2014), "The twenty year review South Africa 1994-2014, the presidency".

Sandelowski, M. (1995), "Sample size in qualitative research", *Research in Nursing and Health*, Vol. 18 No. 2, pp. 179-183, doi: 10.1002/nur.4770180211.

Scheba, A., Turok, I., Visagie, J. and Salenson, I. (2021), "The role of social housing in reducing inequality in South African cities", *AFD Research Papers*, No. 202, pp. 1-79, available at: https://www.cairn-int.info/journal-afd-research-papers-2021-202-page-1.htm?WT.tsrc=pdf (accessed 20 August 2022).

Seetharaman, A., Sreenivasan, J. and Boon, L.P. (2006), "Critical success factors of total quality management", *Quality and Quantity*, Vol. 40 No. 5, pp. 675-695.

South African Catholic Bishops' Conference (2017), "RDP housing: success or failure, 20 years of participating in public policy", Cape Town, Briefing Paper 432, available at: www.eplo.org.za (assessed 7 September 2018).

Tagg, J.H. (2012), "Providing adequate housing in South Africa in the twentieth and twenty first century", Unpublished dissertation (BSc Hons), University of Pretoria, Pretoria.

Tissington, K. (2011), "A resource guide to housing in South Africa 1994-2010: legislation, policy, programmes and practice, socio-economic rights institute of South Africa".

Van Der Byl, C. (2015), "Sustainable human settlements: twenty year review South Africa", Background Paper.

Vorster, S.W. (2013), "Fighting corruption-a philosophical approach", *In die Skriflig*, Vol. 47 No. 1, pp. 1-7, doi: 10.4102/ids.v47i1.651.

Welman, C., Kruger, S.J. and Mitchell, B. (2005), *Research methodology*, 3rd ed., Ox-Ford University Press, Cape Town.

Corresponding author
Christopher Amoah can be contacted at: amoahc@ufs.ac.za