# A framework for the management of human settlements: Nigeria and South Africa as cases

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## Abstract

Since 1965, the United Nations has underscored the vital role of human settlements management in creating a sustainable living environment, stating that the building of houses alone does not bring the desired change, as it does not significantly improve the living conditions of both low- and middle-income households (UN, 1969: vi). However, there is still a global challenge of depreciating human settlements, particularly in developing countries, despite several novel policies and programmes. This article reports the results of a study done to propose a framework that could be of assistance to the human settlements management function in Nigeria and South Africa. With a dearth of literature on human settlements management, literature on property, facility, housing and urban management was reviewed to develop a quantitative questionnaire for identifying factors that influence human settlements management, as perceived by stakeholders in the private or public sectors of human settlements management. Two constructs (management [10 factors with 51 measurements] and sustainable management [5 factors with 25 measurements]), measured on a 5-point Likert scale, test and rate each factor's influence on human settlements management. Based on the findings, legal, political/policy, socio-economic, organisational, physical, human resource, technological, environmental, and ethical/moral factors form the basis of the proposed framework. The latter may assist human settlements managers in their role of managing human settlements for sustainability.

**Keywords**: Human settlements, human settlements management, management and maintenance, Nigeria, South Africa

## 'N RAAMWERK VIR DIE BESTUUR VAN MENSLIKE NEDERSETTINGS: NIGERIË EN SUID-AFRIKA

Sedert 1965 het die Verenigde Nasies die belangrike rol van bestuur van menslike nedersettings in die skep van 'n volhoubare lewensomgewing beklemtoon en verklaar dat die bou van huise alleen nie die gewenste verandering meebring nie, aangesien dit nie die lewensomstandighede van beide lae- en middelinkomste huishoudings verbeter nie (Verenigde Nasies, 1969: vi). Die verswakking van menslike nedersettings, veral in ontwikkelende lande, is egter steeds 'n wêreldwye uitdaging ondanks verskeie nuwe beleide en programme. Hierdie artikel rapporteer die resultate van 'n studie wat gedoen is om 'n raamwerk voor te stel wat kan help met die bestuur van menslike nedersettings in Nigerië en Suid-Afrika. Met die tekort aan literatuur oor die bestuur van menslike nedersettings, is 'n literatuuroorsig oor eiendoms-, fasiliteits-, behuisings- en stedelike bestuur gedoen om 'n kwantitatiewe vraelys te ontwikkel vir die identifisering van faktore wat die bestuur van menslike nedersettings beïnvloed, soos gesien deur belanghebbendes in die private of openbare sektor bestuur van menslike nedersettings. Twee konstrukte (bestuur [10 faktore met 51 metings] en volhoubare bestuur [5 faktore met 25 metings]), gemeet op 'n 5-punt Likert-skaal, toets en beoordeel die invloed van elke faktor op die bestuur van menslike nedersettings. Op grond van die bevindings vorm wetlike, politieke/beleids-, sosio-ekonomiese, organisatoriese, fisieke, menslike hulpbron-, tegnologiese, omgewings-, en etiese/morele faktore die basis van die voorgestelde raamwerk. Die voorgestelde raamwerk kan bestuurders van menslike nedersettings help in hul rol om menslike nedersettings volhoubaar te bestuur.

**Sleutelwoorde**: Bestuur en instandhouding, bestuur van menslike nedersettings, menslike nedersettings, Nigerië, Suid-Afrika

## MORALO OA TSAMAISO EA METSE LE METSANA: BOITHUTO BA NIGERIA LE AFRIKA BOROA

Ho tloha ka 1965, Machaba a Kopaneng a totobalitse bohlokoa ba tsamaiso ea metse le metsana thehong ea tikoloho e tsitsitseng ea bophelo, le hore hase ka khaho ea matlo feela ho ka bang le phetoho e lakatsehang, kaha ha e ntlafatse maemo a bophelo a batho ba

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futsanehileng (UN, 1969: vi). Leha ho le joalo, ho ntse ho na le phephetso ea lefats'e ea ho theoha ha boleng ba metse le metsana, haholo-holo linaheng tse futsanehileng, leha ho na le maano le mananeo a mangata. Sengoloa sena se tlaleha sephetho sa boithuto bo entsoeng ho hlahisa moralo o ka thusang ts'ebetso ea botsamaisi ba metse le metsana Nigeria le Afrika Boroa. Kaha hona le khaello ea lingoliloeng mabapi le tsamaiso ea metse le metsana, lingoliloeng tsa thepa, meaho, matlo le tsamaiso ea litoropo li ile tsa hlahlojoa ho hlahisa lenane la lipotso bakeng sa ho hloaea lintlha tse susumetsang tsamaiso ea metse le metsana. Sena se enstoe ho ipapisitsoe le kutloisiso 'moho le thlaloso e fanoeng ke bankakarolo makaleng a ikemetseng kapa a sechaba a tsamaiso ea metse le metsana. Mehopolo-taba e 'meli, (eleng taolo [lintlha tse 10 tse nang le litekanyo tse 51] le taolo ea moshoelella [lintlha tse 5 tse nang le litekanyo tse 25]), li lekantsoe nthleng ea bohlano (5) sekaleng sa Likert, e le ho lekanya tšusumetso ea ntlha ka 'ngoe taolong ea metse le metsana. Ho ipapisitsoe le tse fumanoeng, motheo oa moralo o sisintsitsoeng o its'etlehile holima molao, lipolotiki/maano, moruo, sechaba, mekhatlo, ts'ebetso/khiro, litsebo tsa batho, theknoloji, tikoloho le boits'oaro. Taolo e tsoelellang e ka thusa batsamaisi ba metse le metsana boikarabelong ba bona ba ho tsamaisa libaka tsa bolulo bakeng sa botsitso.

## 1. INTRODUCTION

The Vancouver declaration stated that "adequate shelter and services are a basic human right, and that use of land should be subject to strict public control, with governments assisting local authorities to contribute to national development" (UN-Habitat, 1976: 28). Human settlements worldwide are facing challenges of successfully maintaining and managing them sustainably. Ongoing migration, due to urbanisation, continues to impact on human settlements, thereby increasing the rate of their deterioration. Kaganova and Nayyar-Stone (2015: 318-319), among others, have alluded to decay in the elements of human settlements, due to a shortage of best practice, political interference, insufficient legal and regulatory frameworks, lack of commitment, the poor attitude of

stakeholders, and a lack of policy implementation, among others.

Authors, including Wagemann (2017: 241), Tummers (2015: 65), UN-Habitat (2013) as well as Van Wyk and Crofton (2005), have cited weak management, among other factors, as accounting for the poor maintenance of human settlements infrastructure inclusive of poor quality of housing and amenities, which is the perceived significant component of human settlements. Hence, it can be stated that human settlements management practices contribute to the visible persistent deterioration of infrastructure, housing and amenities in human settlements in both Nigeria and South Africa.

Although there is a bulk of literature addressing the housing quality problem in developing countries (Hendrik van Mossel & Straub, 2007: 487; Huang & Du, 2015: 218; Ibem & Aduwo, 2013: 163; Gruis & Nieboer, 2004: 282), there is insufficient knowledge about the management of infrastructure, housing and amenities in human settlements. Focusing on housing, Van Wyk and Crofton (2005) proposed a model that, in broad terms, outlines principles such as goals, enablers, and outcomes in housing management. Van Wyk (2014) further adapted this model for human settlements management, but his model was more about role playing and processes. Belle (2017: 971) presents a general plan of action for developing countries that includes creating maintenance awareness, encouraging stakeholder participation, developing managerial methods for activities, and getting feedback from inhabitants. However, the study did not consider how to fuse these requirements into an operational mechanism aimed at an effective maintenance management. In The Netherlands (Straub, 2004), England (Newton & Tunstall, 2012) and Denmark (Kristensen, 2007), a wealth of knowledge of affordable state-owned housing management has produced proper maintenance and there is quality housing stock. None of these countries, however, like studies of African

countries, analysed the issues of human settlements management as contributing to the persistent deterioration of human settlements.

A proposed management framework for human settlements may fill the void for a framework that can be used by the human settlements sector for their effective management towards reducing not only the housing gap, but also amenities and infrastructure decay, not only in South Africa and Nigeria, but also in all African nations. In order to determine the elements needed to design the model, it is important to address the visible persistent deterioration in human settlements in developing countries. This article identifies the types of ownership of human settlements, ascertains the maintenance types used in human settlements management, and evaluates the factors that influence the sustainable management of human settlements in Nigeria and South Africa.

## 2. LITERATURE REVIEW

### 2.1 Human settlements

The concept of 'human settlement' was coined at the 1976 Vancouver Conference as the "totality of the human community whether city, town or village with all the social, material, organisational, spiritual and cultural elements that sustain it" (UN-Habitat, 1976: 8; 2013). The structure of human settlements consists of physical elements, social services, and infrastructure. The physical components consist of man-made shelters that vary in size, composition, and type, and that are built within a community for privacy, security and protection against adverse weather conditions. The community requires social services such as education, health, welfare, nutrition, and recreation. Lastly, infrastructure is "the complex network designed to deliver or to remove from the shelter people, goods, energy or information" (Sarkar, 2010: 2).

Human settlements are either publicly owned (*i.e.*, owned by government or its agencies) or by private individuals or corporations

who engage to regulate space and set the conditions for the development of citizens and people with the same political ideologies, views and subjectivities (Staeheli & Mitchell, 2016: xxiv). In addition, ownership could be denoted by either freehold rights or leasehold rights, which are the major interest types that can be held in any development attached to land (Olajide, 2017: 100). Freehold rights are of indefinite duration and can exist for a lifetime or forever, while leaseholds rights are created through a lease or rental agreement that can be either written or oral (Parsons, 2019: 111). This article classifies an owner as the person, group of persons or body that is able to exercise power over the human settlement and is concerned with its management.

Urban and rural regions face the critical issues of urbanisation globally, and the effect of this is that environmental, sociocultural and economic challenges critically need remedies. Mohanty (2020: 2) estimates that, in the developed regions of the world, 46 million people live in slums, while, in the developing regions, 933 million people live in slums and 74% of the world's urban poor dwell in Asia and in sub-Saharan Africa. These figures indicate that the developing climes face insufficient and inadequate housing delivery, rooted in poverty, as indicated by the 2% per annum growth rate in the formation of slums in the world (UN-Habitat, 2006: 188). Nigeria has a housing backlog of 17 million, with an annual shortage of 700 000 units, while South Africa has a deficit of 2.1 million and an estimated 1.5 million households living in slums (Rust, 2016: 3). The backlog shows that the gap between housing demand and supply is widening, while the capacity of government departments in charge of human settlements as well as supporting stakeholders are inadequate to keep up and increase the rate of delivery.

Van Wyk and Wessels (2014: 6) ascribed the insufficiency and inadequacy in housing delivery to inefficient human settlements management practices. They posited that these practices are occasioned by the fragmented body of knowledge, ambiguous definitions of human settlements management, the absence of a suitable model for human settlements management, inadequate education, the dearth of human settlements management professionals, a lack of capacity among practitioners, and the absence of a professional body to regulate the profession so as to ensure service excellence and the protection of consumers. Jambol (2016: 326) indicated that the Nigerian housing delivery milieu is enmeshed in numerous persistent drawbacks such as huge deficits of dwelling units, high cost of production, high cost of maintenance and management, social and health problems, as well as environmental sustainability issues. He posited that these drawbacks are outcomes of the existing policies driven by the provisions approach agendas that are basically dependent on political will and implementation philosophy.

## 2.2 Human settlements management

The United Nations (UN) (1969: vii) stressed the critical role of human settlements management in creating a sustainable living environment, by affirming that putting up the structures alone does not bring the desired change, except when sound management principles and practices are established and upheld. They further reiterated that such principles and procedures should advance social improvement, community development, sound financial arrangements for settling bills, as well as proper maintenance and upkeep of estates.

This reiteration is a distinct affirmation by an internationally renowned and respected organ of the vital role of human settlements management in addressing the global housing and infrastructure crisis. Their delivery should not be regarded as an end-product, but rather as a critical fabric in the process of creating a sustainable human settlement (Chiu, 2003: 1). Hence, the prevalent global housing and infrastructure crisis, particularly in sub-Saharan Africa, validates the critical need for human settlements that allows enhanced living environment and decent quality of life. In other words, efficient and effective human settlements management is vital to address the global dilemma of insufficient and inadequate human settlement delivery practices (Adeniran, 2020: 132), especially in Nigeria and in South Africa, as well as in other developing climes where limited resources are at the disposal of practitioners.

Be it as it may, each human settlement comprises a separate unit of control through fragmentation, but the entire group represents a single managerial entity (Roness, 2007: 85). Furthermore, the features of the human settlement that define its management challenge have several contextual issues relating to real estate, as identified by Olajide (2017: 12) to include managerial character, legal status, economic character, and physical identity.

Moreover, the World Health Organization (WHO) (1999) indicated that a community (human settlement) is made up of a local, political and administrative group of people and their environment, while MacQueen, Mclellan, Metzger, Kegeles, Strauss, Scotti, Blanchard and Trotter (2001: 1929) similarly observed that a standard definition of community emerged "as a group of people with diverse characteristics who are linked by social ties, share common perspectives, and engage in joint action in geographical locations or settings". The term 'human settlements' hence denotes all physical facilities and service institutions, including energy, housing, transport, employment, sanitation, communication, water, law as well as facilities for leisure, recreation, education, government, health and the arts (Devi, Lowry & Weber, 2017: 59).

Although a number of authors have examined management in its entirety,

few studies have investigated the management of human settlements, with their complexities arising from their composition, in order to develop models and/or blueprints. These include Obeng-Odoom (2011), Van Wyk (2014) and Umeora (2019) who also focused more on housing management in terms of delivery, whereas housing is simply one of the components of the human settlement space. Wapwera, Mallo and Jiriko (2015), citing Van Dijk, stated that urban management is a relatively new area of study. It has received increasing prominence as a result of rising urbanisation, coupled with an upsurge of decentralisation agendas in modern times. They articulated city dynamics in the golden triangle of urban development, which is the result of migration and entrepreneurship, in a dynamic context, created by policies and urban managers. Lee (2014: 19) indicated that Franklin (2000: 907) only examined the structural context of housing management, as practised in the United Kingdom (UK), and he explicitly focused on the implications of the current social and legislative climate, before moving on to an analysis based on the social construction of the professional role of housing management.

However, for the purpose of this article, the definition of human settlements management shall be adopted from that of Van Wyk (2014: 224) as the art, the science, and the profession of coordinating role players, in protecting the interests of households and communities and managing human settlement processes; using appropriate policies, strategies, systems and resources; with due cognisance of all the contextual circumstances (natural, social, cultural, economic, political and technological) to contribute to household and community development and to optimum human settlements' sector performance towards a new and improved sustainable human living environment.

### 2.2.1 Sustainable management

Drawing on a social constructionist framework, Saugeres (2010: 93) challenged the concepts of objectivity and rationality that are applied when justifying and legitimising an unequal process of allocating scarce resources. He argued that the allocation and management of housing is inherently subjective, where those involved are perceived to generate their own opinions and beliefs in their contacts with other stakeholders.

Harvey and Reed (2007: 372) as well as Mutale (2017: x-xi) reasoned that the policy environment, perceptions and attitudes, skills and institutions, and the selection of appropriate technology are sustainability dynamics for any development. However, these factors must critically match the essential sustainability elements to human settlements management, namely policy, traditional, external human settlement social perception factors, technological, environmental, fiscal, as well as monitoring, appraisal, and documentation. Subsequent to this, El-Gohary Osman and El-Diraby (2006: 601) as well as Mok, Shen and Yang (2014: 453) identified lack of education, monitoring, information, communication, deficient capacity-building, and documentation strategy as sub-factors.

However, policy, institutional, sociocultural, environmental, technological, and fiscal factors, as well as monitoring, assessment and documentation often challenge the three pillars of sustainability (environmental, socially responsible, and governance) (Brandon, Lombardi & Shen, 2017: 378; Van Dijk, 2008: 13; Mihyeon & Amekudzi, 2005: 38; Mirela-Adriana, 2014: 3462; Roseland, 2000: 73; Werkheiser & Piso, 2015). Hence, there is a need for strategy implementation, which involves developing a strategy-support culture, creating an effective and efficient organisational structure, readdressing marketing efforts, preparing budgets, developing and utilising information systems, as well as linking employee compensation to work performance (David, 2011: 6). Koontz and Heinz (2010: 211) argued that, in order to handle the organisation's structure, the core function of the manager is proper and effective selection, appraisal and development of personnel to fill the roles designed in the structure. Kamarazaly, Mbachu and Phipps (2013: 136) identified the critical challenges currently facing management: emergency management and business continuity planning, inadequate funding, operational efficiency, statutory compliance, sustainability and environmental stewardship, keeping up with rapid changes in technology, maintenance, human resources, as well as identifying and meeting stakeholder needs.

Outright bribery, unfair practices in pricing, price discrimination, dishonest advertising, unfairness and prejudice in hiring, cheating of customers, unfair credit practices, overselling, collusion by competitors, and dishonesty in making and keeping to contracts are the most common unethical business practices prevailing in Nigeria (Gbadegesin & Ojo, 2011: 172) that affect human settlements management. Akinsola (2012: 13) also identified personnel, physical, bureaucracy and economic/funding issues, among others, as the factors influencing maintenance programmes. Lützkendorf and Lorenz (2005: 214) asserted that the bedrock of sustainable housing starts with security and includes protection of "the natural environment, essential natural resources, human health and wellbeing, social values, public goods and the protection and the preservation of capital and material goods".

In a study on the nature of housing management practice in the UK, Clapham, Franklin and Saugères (2010: 68) examined the definition and the delineation of the roles of housing managers. They socially classified the class and the extent of housing management in interaction with tenants and other professional groups. Their study argued that housing management plays a significant role in mediating between the state and the most disadvantaged and vulnerable

sections of the population and, as such, it must be treated as crucial.

Burges (1994: 41) developed a model of housing development in a bid to measure its influence on beneficiaries, with a focus on the homeless. He acknowledged that housing is a process and emphasised the importance of management as part of the process of linking inputs and outputs in the housing (human settlements development) delivery process.

However, the United Nations Framework Convention on Climate Change (UNFCCC) (2019: 103) highlighted some best global practices for urban and human settlement issues as assessment of the costs and benefits of adaptation options following solid impact and vulnerability assessments; consideration of the short- and long-term adaptation options in the broader development and planning context; taking into account distributional effects, *i.e.* the assessment needs to consider which sectors, groups or communities will bear the cost and which will enjoy the benefits of the option(s) under consideration; adopting, where possible, multiple approaches for assessing adaptation options, as linking these together would provide a greater evidence base. It is almost impossible to note how one single approach could capture the complexities of the methodological underpinnings, the diversity of circumstances in which adaptation takes place, and the variety of objectives with which adaptation is undertaken; involving stakeholders in the assessment through surveys or workshops, in order to create ownership and increase the likelihood of implementing selected adaptation options; embedding the assessment of adaptation options into the broader planning process and creating vehicles or processes to ensure that results are integrated into national, subnational or sectoral policies, and undertaking evaluations following the implementation of selected adaptation options to assess whether the initial costing was higher or lower than the real

costs and to assess the range of direct to more indirect benefits.

### 2.2.2 Maintenance

Chanter and Swallow (2007: 197), quoting BS 3811 (1984), define maintenance as "a combination of any actions carried out to retain an item in, or restore it to an acceptable condition." Hence, human settlements maintenance does not involve only the physical structure of the shelter but all its appurtenances.

Lind and Muyingo (2012: 15-17) identified the use of different strategies in maintenance as corrective, planned, opportunistic and preventive maintenance. Planned maintenance, also called preventive maintenance, is the maintenance work carried out at some predetermined time to prevent or to reduce the probability of the failure of a facility (Olatubara & Adegoke, 2007: 399). Unplanned maintenance, which is unlike preventative maintenance, takes place after a failure has occurred, in order to restore the component to its operational or acceptable standard (Pintelon & Parodi-Herz, 2008: 27; Olatubara & Adegoke, 2007: 399). The damage usually results from an unanticipated breakdown, due to internal or external forces. The work required mainly includes repairs or replacements (Pintelon & Parodi-Herz, 2008: 27). A formulated human settlements management strategy, either individual or corporate, which makes up the management policy, is a tool that can ensure proper planning for any management strategy in the management activity, and this is germane for its sustainability.

Rabii, Naoufal and Omar (2018: 20) described the necessary aspects to take into account, in order to consider the modelling of a scientific and exhaustive maintenance problem: the recognition of the problem and the aim of the study; the agreement and the enumeration on the required data for the study, and the design of the system for the future withdrawal of data (if required). Other aspects include the preparation of the data and the information to fit the models; the benchmark of the data with

other sources or alternatives; the formulation of suitable maintenance policies using the models; an explanation of the process followed by the maintenance manager, and the discussion of model results and model utilisation pay-off analysis.

Hence, there are a number of models generally devoted to several vital areas or problems within the maintenance management field, but none of these authors has studied the management of human settlements for sustainability in either Nigeria or South Africa.

## 3. METHODOLOGY

The purpose of this study was to develop a proposed human settlements management framework. A quantitative research design was used, in which structured questionnaire surveys enable researchers to generalise their findings from a sampled population (Bryman, 2012: 232). In the questionnaire, two constructs (factors [consisting of 10 areas with 51 measurements] and sustainability [consisting of 5 areas with 25 measurements]) were extracted and the results from these measurements were set, respectively, as the elements for the proposed human settlements management framework. Descriptive analysis was used to show the type of ownership of human settlements and maintenance types used in human settlements management as well as the factors that influence the sustainable management of human settlements in Nigeria and South Africa.

### 3.1 Sampling method and size

A purposive sampling approach, following Naoum (2007), was employed with the sampling frame drawn from professionals and other stakeholders in the human settlement/housing sector in Nigeria and South Africa. The contact details of the respondents were obtained from the various professional bodies (Nigeria Institution of Estate Surveyors and Valuers, South African Property Owners Association [SAPOA], various government organs involved in Human Settlements/

Housing (Department of Human Settlements, Ministry of Housing and the Various Housing authorities) and some residents' associations. The respondents were encouraged to snowball the survey to other willing and relevant participants.

Although the exact population of the study was unknown, 3 000 emails were sent out and the study adopted Smith's (2013: 1-7) formula to achieve an appropriate sample for the study, as presented hereunder:

$$\text{Necessary sample size} = \frac{(Z\ score)^2 * StdDev * 1 - StdDev}{(margin\ of\ error)^2}$$

Where:

The required confidence level corresponds with Z score and confidence level is @ 95%

Standard deviation is @ 0.5

Margin of error/confidence interval +/-5%

Hence, the required sample size =

$$\frac{(1.96)^2 * 0.5 * 1 - 0.5}{(.05)^2} = 385\ \text{respondents}.$$

## 3.2 Data collection

A structured web-based questionnaire survey, QuestionPro®, was distributed to the respondents in both Nigeria and South Africa for 100 days between January and April 2019. The first section elicited general information about the respondents such as education, profession, years of experience, and type of organisation. The second section set two tick-box questions on the ownership of, and maintenance applied in human settlements. The third section set 56 variables affecting human settlements that were measured in two constructs (human settlements management [consisting of 10 areas with 51 measurements] and sustainable management of human settlements [consisting of 5 areas with 25 measurements]) on a 5-point Likert scale rating. Respondents were required to indicate their level of agreement on how these factors affect human settlements management. The data from these measurements formed the Likert-scale items used in the descriptive analysis of this study. The questionnaire was administered to the study sample, along with a

covering letter, stating the purpose of the research, informed consent declaration, and the guarantee that the information given by the respondents would be treated as confidential. Questionnaires were completed anonymously to ensure a true reflection of the respondents' views and to meet the ethical criterion of confidentiality. It was also assumed that the respondents were sincere in their responses, due to their anonymity.

## 3.3 Response rate

Seven hundred and sixteen recipients of the email viewed the survey, while 504 started the questionnaire and only 375 completed it. The response rate was 12.5%. According to Van Mol (2017: 318), contemporary built-environment survey response rates are usually low and generally below 10%. The response rate is, therefore, significant and the results can be regarded as reliable, given the profile of the respondents.

## 3.4 Data analysis and interpretation of findings towards the proposed framework

The Statistical Package for the Social Sciences (SPSS) version 15 was used to describe the data, computing the frequencies, mean scores, and standard deviations.

A 5-point Likert-type scale with ordinal scale measure levels of agreement/disagreement was used to rank the factors that influence human settlements management. The Likert-type scale is effective where numbers can be used to quantify the results of measuring attitudes (Abdullah, Rasak & Pakir, 2011: 43; Wegner, 2012: 11). For the purpose of analysis and interpretation, the following scale measurement was used regarding mean scores, where 1 = Strongly disagree (>1.0 and ≤1.8), 2 = Disagree (>1.8 and ≤2.6), 3 = Undecided/Neutral (>2.6 and ≤3.4), 4 = Agree (>3.4 and ≤4.2), and 5 = Strongly agree (>4.2 and ≤5.0).

For analysis of the internal reliability of the items in the constructs (questions) on factors influencing human settlements management,

Cronbach's *alpha* values were tested, and acceptable values of Cronbach's *alpha* would range from 0.70 to 0.95 (Tavakol & Dennick, 2011: 53-55). A cut-off value of 0.7 was adopted in this study.

## 3.5 Limitations

The study covers only human settlements management in Nigeria and South Africa and focuses on the professionals and stakeholders within the human settlements environment.

## 4. FINDINGS

## 4.1 Respondents' profile

Table 1 shows that, in general, none of the respondents lacked formal education; most of them (62.2%) had an Honours/BSc or a Masters/PhD qualification (20.4%), and 16.1% had a college qualification; only 1.3% had attended or obtained High School or Matric or Senior Secondary Certificate or Technical and Vocational-Training.

In Nigeria, most of the respondents (75.6%) were estate surveyors and valuers/facility or property managers or agents, followed by others (community representatives, ward councillors, pensioners) (5.6%), and finance professions (lawyers, accountants, bankers, and auditors) (3%). Architects, entrepreneurs/administrators, public servants/municipal managers and quantity surveyors constituted only 2.1% of the respondents, while engineers, construction/project managers, land surveyors and town planners constituted only 0.9% of the respondents.

In South Africa, the vast majority of the respondents (32.6%) were estate surveyors and valuers/facility or property managers or agents, followed by allied professions in the built environment (quantity surveyors, engineers, construction/project managers, town planners) (9.0%), and others (community representatives, ward councillors, pensioners) (7.9%). Finance professions (accountants, auditors, bankers) constituted only 4.5% and public servants/municipal managers only 3.4% of the respondents.

Table 1: Respondents' profile

| Respondents' profile | Nigeria | | South Africa | | Overall |
|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | % |
| Highest educational level | N=268 | | N=100 | | N=368 |
| No formal education | 0 | 0.0 | 0 | 0.0 | 0.0 |
| High School/Matric/SSCE/TVET | 2 | 0.8 | 3 | 3.0 | 1.3 |
| Diploma/Bachelors | 10 | 3.7 | 49 | 49.0 | 16.1 |
| Honours/BSc (Nigeria) | 196 | 73.1 | 33 | 33.0 | 62.2 |
| Masters/PhD | 60 | 22.4 | 15 | 15.0 | 20.4 |
| Total | 268 | 100.00 | 100 | 100.0 | 100.00 |
| Professions | N=234 | | N=89 | | N=323 |
| Estate surveyors and valuers/Facility/Property managers | 177 | 75.6 | 29 | 32.6 | 63.7 |
| Lawyers/Company secretaries | 7 | 3.0 | 3 | 3.4 | 3.1 |
| Architects | 5 | 2.1 | 0 | 0.0 | 1.5 |
| Entrepreneurs/Administrators | 5 | 2.1 | 7 | 7.9 | 3.7 |
| Public servants/Municipal managers | 5 | 2.1 | 3 | 3.4 | 2.5 |
| Quantity surveyors | 5 | 2.1 | 8 | 9.0 | 4.1 |
| Accountants/Bankers/Auditors | 7 | 3.0 | 4 | 4.5 | 3.4 |
| Lecturers/Academic | 2 | 0.9 | 3 | 3.4 | 1.5 |
| Engineers (mechanical and civil) | 2 | 0.9 | 8 | 9.0 | 3.1 |
| Construction/Project managers | 2 | 0.9 | 8 | 9.0 | 3.1 |
| Land surveyors | 2 | 0.9 | 1 | 1.1 | 1.0 |
| Town planners | 2 | 0.9 | 8 | 9.0 | 3.1 |
| Others (community representatives, ward, councillors, pensioners, medical doctors, etc.) | 13 | 5.6 | 7 | 7.9 | 6.2 |
| Total | 234 | 100.00 | 89 | 100.00 | 100.00 |
| Number of years of professional experience | N=270 | | N=99 | | N=369 |
| Less than 1 year | 5 | 1.9 | 1 | 1.0 | 1.6 |
| 1-10 years | 106 | 39.3 | 80 | 80.8 | 50.4 |
| 11-20 years | 116 | 43.0 | 15 | 15.2 | 35.5 |
| 21-30 years | 37 | 13.7 | 2 | 2.0 | 10.6 |
| 30 or more years | 6 | 2.2 | 1 | 1.0 | 1.9 |
| Total | 270 | 100.00 | 99 | 100.0 | 100.0 |
| Respondents' organisation | N=260 | | N=91 | | N=351 |
| Private professionals/Contractors | 136 | 52.3 | 35 | 38.5 | 48.7 |
| Local/Municipal | 17 | 6.5 | 26 | 28.6 | 12.3 |
| State Housing Corp/Provincial DHS | 37 | 14.2 | 23 | 25.3 | 17.1 |
| Fed. Housing Auth./National DHS | 40 | 15.4 | 1 | 1.1 | 11.7 |
| Community representatives | 25 | 9.6 | 4 | 4.4 | 8.3 |
| Others | 5 | 1.9 | 2 | 2.2 | 1.9 |
| Total | 260 | 100.00 | 91 | 100.0 | 100.0 |

Source: Authors' data analysis, 2019

Approximately 50% of the respondents had more than 11 years' experience in their professions, with 12.5% of these having 21 years or more experience. Although the majority of the respondents (45.6%) work as private professionals or contractors, over 49% of the respondents work for either the State Housing Corporation or the Provincial Department of Human Settlements, the Federal Housing Authority, or the National Department of Human Settlements, and at local or municipal governance level.

These findings indicate that, although 96% of the respondents work in the relevant organisations, 45.6% are not *per se* human settlement practitioners, but are rather involved in numerous related/ auxiliary disciplines in the field of human settlements – this does not invalidate the research.

## 4.2 Ownership of human settlements

Table 2 displays the ownership[1] of the human settlements in Nigeria and South Africa. Of the respondents, 35% manage privately owned type of human settlements. Over 60% of the settlements managed by respondents are owned by the province or state (25%), municipalities (16%), the federal

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1 This study is not about the "conventional human settlements thinking of the South African system" see the definition of human settlements and the definition of ownership - people come together to form their own communities.

or national government (11%), and private-public partnerships (11%). In Nigeria and South Africa, the government seems to be the primary provider of human settlements.

## 4.3 Types of maintenance

Table 3 shows that reactive maintenance (61.9%) is the most adopted in the maintenance management of human settlements, followed by planned corrective maintenance (15.2%) and planned preventive maintenance (13.1%). While participants at times combine more than one approach (N=488), unplanned maintenance was applied only 7.4%. The weak result on planned maintenance suggests a likely reason for the deterioration of human settlements.

## 4.4 Ranking of factors influencing the management of human settlements

Table 4 ranks the mean scores and shows that, with an average MS of 3.38, respondents could not decide if all listed factors influence human settlements management in Nigeria and South Africa.

With MS ratings above 4.2, respondents strongly agreed that legal (4.42), political/policy (4.37) and socio-economic factors (4.31) are the top three factors influencing human settlements management. They agreed that organisational (4.26), physical (4.22), human resource (4.14), technological (4.03), environmental (3.50) and ethical/moral factors (3.47) have an influence on the management of human settlements, but they disagreed that sociocultural factors (2.07) have an influence. The Cronbach's *alpha* was greater than 0.70 for all constructs, except for technological factors (0.566), indicating acceptable internal reliability.

## 4.5 Ranking of factors influencing the sustainable management of human settlements

With an average MS of 4.05, Table 5 ranks and shows that respondents agreed that all listed

factors influence the sustainability of managing human settlements.

With MS ratings above 4.2, respondents strongly agreed that technological (4.43), and human resource (4.42) are the top two factors influencing sustainable human settlements management in Nigeria and South Africa. They agreed that socio-economic (4.08), legal (3.69) and environmental factors (3.63) influence the sustainable management of human settlements. The Cronbach's *alpha* was greater than 0.70 for all constructs, except for legal factors (0.540), indicating acceptable internal reliability of the items in the construct (questions).

Table 2:     Ownership of human settlements

| Ownership of human settlements | Nigeria | | South Africa | | Overall | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Private | 97 | 35.5 | 40 | 39.2 | 137 | 34.9 |
| Local/Municipal government | 26 | 9.5 | 39 | 38.2 | 65 | 16.6 |
| Provincial/State government | 79 | 28.9 | 19 | 18.6 | 98 | 25.0 |
| National/Federal government | 41 | 15.0 | 2 | 2.0 | 43 | 11.0 |
| Public-private partnership | 31 | 11.4 | 11 | 10.8 | 42 | 10.7 |
| Unsure | 2 | 0.7 | 5 | 4.9 | 7 | 1.8 |
| Total | 276 | 100 | 116 | 100 | 392 | 100.0 |

Table 3:     Types of maintenance adopted for human settlements management

| Type of maintenance | Nigeria | | South Africa | | Overall | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Unplanned maintenance | 18 | 5.9 | 18 | 9.8 | 36 | 7.4 |
| Reactive maintenance | 232 | 76.6 | 70 | 37.8 | 302 | 61.9 |
| Planned corrective maintenance | 27 | 8.9 | 47 | 25.4 | 74 | 15.2 |
| Planned preventive maintenance | 25 | 8.3 | 39 | 21.1 | 64 | 13.1 |
| Unaware | 1 | 0.3 | 4 | 2.1 | 5 | 1.0 |
| Unsure | 0 | 0 | 5 | 2.7 | 5 | 1.0 |
| Others | 0 | 0 | 2 | 1.1 | 2 | 0.4 |
| Total | 303 | 100.0 | 185 | 100.0 | 488 | 100.0 |

Table 4:     Ranking of factors influencing human settlements management

| Factors (1 = strongly disagree … 5 = strongly agree) | No. of items | N | Missing | Mean | Std. dev. | Cronbach's *alpha* | Rank |
|---|---|---|---|---|---|---|---|
| Lega*l* | 6 | 366 | 9 | 4.42 | 0.598 | 0.742 | 1 |
| Political/Policy | 8 | 366 | 9 | 4.37 | 0.567 | 0.931 | 2 |
| Socio-economic | 6 | 369 | 6 | 4.31 | 0.524 | 0.748 | 3 |
| Organisational | 6 | 367 | 8 | 4.26 | 0.494 | 0.824 | 4 |
| Physical | 6 | 364 | 11 | 4.22 | 0.632 | 0.841 | 5 |
| Human resource | 5 | 373 | 2 | 4.14 | 0.575 | 0.792 | 6 |
| Technological | 2 | 367 | 8 | 4.03 | 0.555 | 0.566 | 7 |
| Environmental | 6 | 364 | 11 | 3.57 | 0.760 | 0.918 | 8 |
| Ethical/Moral | 3 | 368 | 7 | 3.47 | 1.120 | 0.919 | 9 |
| Sociocultural | 3 | 366 | 9 | 2.07 | 1.057 | 0.892 | 10 |
| Total average/Composite score | | | | 3.38 | | | |

Table 5:     Ranking of factors influencing sustainable management of human settlements

| Factors (1 = strongly disagree … 5 = strongly agree) | No. of items | N | Missing | Mean | Std. dev. | Cronbach's *alpha* | Rank |
|---|---|---|---|---|---|---|---|
| Technologica*l* | 3 | 363 | 12 | 4.43 | 0.528 | 0.738 | 1 |
| Human capital | 8 | 370 | 5 | 4.42 | 0.529 | 0.886 | 2 |
| Socio-economic | 6 | 373 | 2 | 4.08 | 0.524 | 0.784 | 3 |
| Legal | 3 | 366 | 9 | 3.69 | 0.636 | 0.540 | 4 |
| Environmental | 5 | 363 | 12 | 3.63 | 0.742 | 0.910 | 5 |
| Total average/Composite score | | | | 4.05 | | | |

## 5.   DISCUSSION

Despite the difference in the land and housing policies of South Africa and Nigeria, the results indicate that, in both countries, the government is the major owner of human settlements (see Table 2).

Van Dijk, Noordhoek and Wegelin (2002) identified that studies have noted the importance of government in the provision of housing, which is the main fabric of human settlements, as they sometimes provide infrastructure, while some owners of human settlements revert to self-help. However, the Nigerian land policy, the Land Use Act (now Cap 202, LFN 1990), which vests all land rights in the governor of each state to hold such land in trust for the citizens, may suggest the reason for the result of this study, which indicated that government is the major owner of human settlements. Surprisingly, the South Africa Government is indicated as being the major owner of human settlements, despite the fact that Cronje (2012) disclosed that the government owns only 25% of the total land mass.

The present study, as shown in Table 3, indicated that mostly reactive maintenance is employed for the maintenance of human settlements. This is consistent with Akinsola (2012: 13), who indicated that cost-effectiveness, time, policy requirements, and norms, among others, influence the choice of reactive maintenance as the most used type of maintenance.

The study identified several areas that influence human settlements management and sustainable human settlements management, of which some areas overlap (see Tables 4 and 5). Legal factors (4.42) was rated the top one for influencing the management (4.31) and the top four for influencing the sustainable management (4.08) of human settlements. This correlates with Kaganova and Nayyar-Stones' (2015: 318-319) study that points towards decay in the elements of human settlements caused by an insufficient legal and regulatory framework. Olajide (2017: 12) identified the features of human settlements that

define its management challenge. He argued that the legal character determines the degree and quality of control. Hence, this indicates that the success and sustainability of human settlement benefits will always be dependent on legal factors.

Political and policy factors (MS = 4.37) was rated top two that influences the management of human settlements. This correlates with Kaganova and Nayyar-Stones' (2015: 318-319) study, indicating that decay in the elements of human settlements is caused by a shortage of best practice, political interference, lack of commitment, the poor attitude of stakeholders, and a lack of policy implementation. Brandon *et al.* (2017: 378), Van Dijk (2008: 13), Mihyeon and Amekudzi (2005:3, 8), Mirela-Adriana (2014: 3462), Roseland (2000: 73) as well as Werkheiser and Piso (2015) indicate that factors such as policy often challenge the three pillars that support sustainable development in human settlements, namely society, economy, and the environment.

Socio-economic factors was rated top three for influencing the management (4.31) and the sustainable management (4.08) of human settlements. The literature indicates that, at the centre of so many socio-economic activities, housing stands as an element of urban development, social acceptance and a measure of growth and prosperity (UN-Habitat, 2013).

With a MS = 4.26, organisational factors was rated top four for influencing human settlements management. David (2011: 6) recognised the efficiency of an organisational structure as germane to strategic management, and UN-Habitat (1976) also identified organisational elements as part of the sustaining factors for the entire human community.

Devi *et al.* (2017: 59) referred to all physical facilities and service institutions as including energy, housing, transport, employment, sanitation, communication, water, law as well as facilities of leisure, recreation, education, government, health and the arts. With a MS of

4.22, physical factors was rated top five in influencing human settlements management. This correlates with Akinsola (2012: 13) who identified physical issues as one of the factors influencing the maintenance programmes of buildings.

Human resources/human capital was ranked sixth for influencing the management (4.14) and top two for influencing the sustainable management (4.42) of human settlements. Burges' (1994) model included human resources as one of the essential components in a generic human settlements management model. This is also recognised in the management principles listed by Koontz and Heinz (2010). Kamarazaly *et al.* (2013: 136) identified the critical challenges currently facing management as including operational efficiency, statutory compliance, and human resources. In this study, the elements identified as human capital factors are the education level of inhabitants, the education level of management personnel, the technology used in management exercise, professional expertise involved in exercising management, the population density of the settlements, a policy framework for management and maintenance, community participation, and technology used in building. This correlates with El-Gohary *et al.* (2006: 601) and Mok, Shen and Yang (2014: 453) who identified lack of education, monitoring, information and communication (community participation), deficient capacity-building, and documentation strategy as factors that are damaging human settlement sustainability. The findings of this study indicate that holistic human capital is vital to the sustainable management of human settlements, and that human capital is about the human settlements' manager and the inhabitants.

Technological factors was ranked seventh for influencing the management (4.03) and top one for influencing the sustainable management (4.43) of human settlements. Harvey and Reed (2007: 372) as well as Mutale (2017: x-xi) reasoned that the

selection of appropriate technology is dynamic for any development.

Environmental factors were ranked eighth for influencing the management (3.50) and fifth for influencing the sustainable management (3.63) of human settlements. This finding aligns with Lützkendorf and Lorenz (2005: 233) who observed that environmental factors are associated with the economic, social and environmental requirements for achieving sustainable development of human settlements management.

Ethical/moral factors (3.47) was ranked ninth for influencing the management of human settlements. However, it is difficult to explain this result, but it might have to do with the issue of human resources and organisational factors. Gbadegesin and Ojo (2011: 172) summarised the most common unethical business practices as outright bribery, unfair practices in pricing, price discrimination, dishonest advertising, price collusion by competitors, unfairness and prejudice in hiring, cheating of stakeholders, unfair credit practices, overselling, collusion by competitors, and dishonesty in making and keeping to contracts.

The WHO (1999) identified social and cultural factors as one of the main elements/features of human settlements and highlighted traditions, incorporating ethnicity, social values, religions, food and eating habits, as well as power structures as the subfactors. With a low MS of 2.07, socio-cultural factors (ethnicity, norms and traditions, as well as religious beliefs of inhabitants of human settlements) have a low level of influence on the management of human settlements.

Human capital, environmental, socio-economic, technological and legal factors are vital for the management of human settlements towards Sustainable Development Goal 11 of making cities and human settlements inclusive, safe, resilient and sustainable (Chengyi, Wenzhong, Dongsheng & Xueli, 2017; Sofeska, 2016; Zhao, Sun, Chen, Xia & Li, 2019). The sustainable development and management of

human settlements in the research's specific context cannot be achieved without proper recognition and an interlocking of these essential factors/issues (Parry-Jones, Reed & Skinner, 2001; FMLHUD, 2012).

## 6. PROPOSED HUMAN SETTLEMENTS MANAGEMENT FRAMEWORK

Arising from the factors discussed and from the literature review, a framework is proposed showing the interrelationship of elements that are essential for the sustainable management of human settlements (see Figure 1).

The framework presents a three-layer expanding circle, with the inner circle showing a successful sustainable human settlement, influenced by the next circle, human settlements management, with elements of estate, facility, strategic and performance management. The effectiveness of human settlements is influenced by the outer circle that shows the identified factors for sustainable management, namely legal, political/policy, socio-economic, organisational, physical, human resource, technological, environmental, ethical/moral and sociocultural that will determine the human settlements management strategy/method. In addition, there must be a synergy of all these factors, and none can be isolated for the successful management of human settlements.

For the operationalisation of the framework, it is important that all the factors identified by this study are considered as dynamics needed for human settlements management. Each human settlement, as a unique entity, must consider these factors collectively, in order to achieve its sustainability through proper management at the outset of management initiation.

### 6.1 Human settlements management

The second circle following the inner circle shows the four types of management that are important for successful human settlements in sequence. Strategic management in successful human settlements is a process that includes top management's analysis of the setting, in which the organisation operates, before formulating a strategy, as well as the plan for implementation and control of the strategy (Akkermans & Van Oorschot 2018: 931). Without a proper strategic management plan, every other management activity is deficient, worthless and not fit for resource, operation deployment and implementation (Dziyaba, 2016: 5). Performance management is a continuous process of identifying, measuring, and developing the performance of individuals and teams and aligning performance with the strategic goals of creating successful human settlements (Aguinis, 2013: 2). It also ensures that the set goals are achieved most efficiently and effectively, by connecting individual performances and objectives to the overall mission and goals of the human settlements management team (Aguinis, Joo & Gottfredson, 2011: 2). Hence, performance management will help improve efficiency, by creating relationships between corporate planning, setting budgets, as well as service planning and monitoring. Maintenance management, as defined by Marquez and Gupta (2006: 313), is all activities of management that determine the maintenance objectives, priorities, strategies and responsibilities, while estate management is the direction and supervision of interest(s) in land and landed property, with the aim of securing optimum return that may not always be financial, but it can be a social benefit, status, prestige, political power or some other goal or group of goals (Olajide, 2017: 104).

### 6.2 Factors influencing sustainable human settlements management

The outer circle shows the synergy of the factors that influence sustainable management supported by this study.
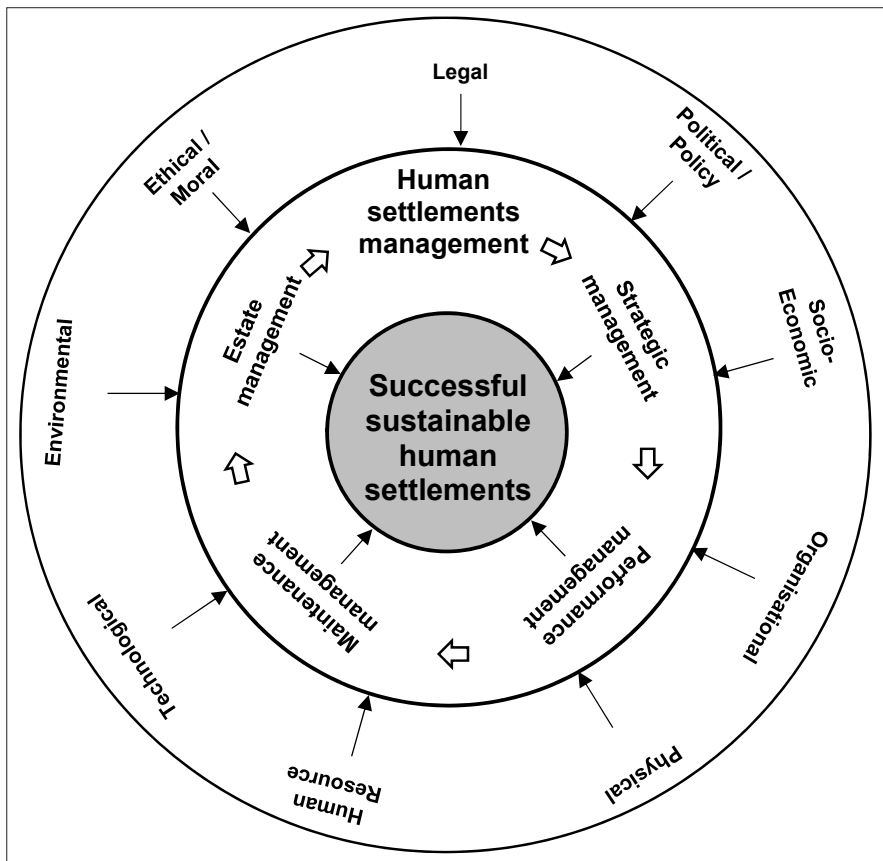


Figure 1: A framework for the management of human settlements
Source: Author's own construct

Legal factors include specific rights enforceable by law. These rights determine the degree and quality of control in human settlements. The basis of management will depend on the form of rights, privileges, and obligations that subsist in the estate, and these must be clearly understood if they are to be used to maximum advantage. However, rights of ownership cannot be isolated, but should be observed within the legal framework, of which they form a part. No legal system exists in a vacuum; it is the product of various social, ethnic, religious, economic and political metamorphoses that govern the choices and decisions of a society. In addition, every other factor comprises elements of legal components. As identified by this study, the subfactors to be observed are covenants/contracts undertaken by inhabitants, the payment of rents/rates/taxes, maintenance records, tenure of the inhabitants, title deeds/documentation, and security of tenure.

Politics/policy factors relate to ideologies and legislations that will affect the level of decision-making, community structures and involvement, security and stability, service provision and acccess. Whatever the success all the other factors may bring in human settlements management, politics and policy could pose a challenge to them as they influence people's rights. Therefore, political and policy factors can challenge sustainability/ sustainable development in human settlements such that their interplay could inform the working of the human settlement sector.

Socio-economic factors are very important and must be undertaken at the local level of each unique human settlement: income distribution, employment and wealth level of households. The socio-economic factors can undermine other identified factors as it speaks directly to the inhabitants of human settlements, as it relates to socio- and micro-economic factors. Such factors include conflict of interest of stakeholders, disputes between inhabitants, lack of funds for management/maintenance activities,

and fiscal policy of the government. Other factors are poor education and literacy level of inhabitants, population density of the settlement/ housing estate, inhabitants' income, scale of unemployment, occupation and social status, safety of life and property, and the social justice system of the community.

Organisational factors comprise the coordination and distribution of resources to achieve a set objective. Hence, there is a need to organise all the identified factors in the face of various challenges and difficulty at maintaining rigid standards. This must be done to ensure that the dynamic changes that may occur are managed appropriately, and that the theory of change is incorporated to further meet the dynamic changes in human settlements. The key subfactors are the maintenance policy of the organisation, the procurement management methods of the organisation, workplace hierarchy, job specialisation, and division of labour. Other factors are standard operating procedures of management organisations, professional expertise of management, and policy framework for management/maintenance.

Physical factors include the structure of human settlements that consists of physical elements and infrastructure including man-made shelter that varies in size, composition and type and that is built within a community for privacy, security and protection against adverse weather conditions, while infrastructure is the complex network designed to deliver or to remove people, goods, energy or information from the shelter. The essence of physical factors as influencing human settlements management is that they may determine the extent and expertise of all the other factors that are identified herewith. The basic physical factors to be considered for human settlements management are house design, absence of public participation, size of land/expanse, location of human settlement, and land-use management model.

Human resource factors include qualification of personnel, adequate

supervision of management and maintenance tasks, training of management/maintenance personnel, and the motivation of management personnel. As a result of the dynamics of human settlements and their inhabitants, management and maintenance personnel must continuously undergo training and retraining programmes, in order to keep abreast of the current ways of achieving sustainable, successful human settlements.

Technological factors refer to spare parts for infrastructure and equipment; software tools for maintenance activities; the technology used in building, and the time available for management and maintenance. Hence, the human settlements manager must ensure that the necessary technology and resources are available, and that the appropriate stakeholders are capable of utilising the technology and resources to achieve successful management of the human settlements. Furthermore, the human settlements manager must ensure that there is a technology transfer, and that the technology is acceptable to the inhabitants.

Environmental factors are associated with the economic, social and physical requirements for achieving the sustainable development of human settlements. These include biodiversity networks and open space systems, as well as factors such as land availability and suitability, topography, climate, vegetation and wildlife that will affect factors such as the cost of human settlements, the density, the spatial layout and the necessity for greenfield.

Ethical/Moral factors. Adequate funding oils the wheel of progress of any venture and as such the vices of bribery, embezzlement of funds allocated for management / maintenance, and the greed of personnel involved in the management of human settlements must be considered in the management of human settlements. Professionalisation and continuous evaluation and monitoring of the activities of personnel involved in the management of human settlements

would reduce, if not fully eliminate the vices and further stimulate successful sustainable human settlements.

## 7. CONCLUSION AND RECOMMENDATIONS

The study is original and, prior to its conception, a management framework for human settlements did not exist. It revealed that several dynamics such as legal, political/policy, socio-economic, organisational, physical, human resource, human capital, environmental, technological, and ethical/moral determine the management of human settlements. Presently, there is an apparent necessity for change and continual improvement of these dynamics and this was the rationale for this study. Consequently, as various factors impact on human settlements management, it is essential to engage in empowerment and building-capacity to enable human settlements management to successfully perform its mandate. In view of that, human settlements management practices should first acknowledge that Nigeria and South Africa are not isolated from the rest of the world and must attempt to fully align with global best practices, as highlighted by UNFCCC (2019: 103), and this will benefit its different aspects of socio-economic standing. This could be achieved by taking a cue from other climes with the intention of developing South Africa's and Nigeria's insights towards the human settlements management discipline. Having done this, human settlements managers would be proficient to better deal with their challenges.

It is recommended that the current mode of utilising reactive maintenance management should be changed to a planned preventive maintenance management approach. This is to ensure that the benefits and the sustainability of human settlements are both achieved. Human settlements should be managed by the integration of factors, as defined in the proposed framework. It is further recommended that the field of human settlements management should be professionalised, and staff capacity development and training programmes should be promoted and encouraged for human settlements managers. This would assist and promote the required awareness, understanding, identification, assessment and opportunities for the appropriate human settlements management players. In addition, the relevant authorities should ensure and promote a best practice approach that would enhance the sustainability of the benefits and the returns from the human settlements in the case studies.

Human settlements management policy should be formulated to include maintenance practices for the human settlements sector in both Nigeria and South Africa. This is to be sustained by a continuous cycle of monitoring, evaluation and reporting that would help ensure that all stakeholders comply.

Funding oils the machine of the success of any business endeavour; hence, the management of human settlements is dependent on the available resources for the task. Consequently, it is suggested that adequate resources, whether financial or human, be allocated and dispensed appropriately to human settlements management entities to uninterruptedly implement any management and maintenance tasks required by the human settlements as promptly as possible.

Issues of transparency, accountability, professionalism, and good governance are advocated to provide a foundation for the implementation of the framework, in order to achieve benefits and sustainability of the human settlements. Hence, all stakeholders should ensure that these vital issues are utilised for the benefit of human settlements management.

In conclusion, the sustainability of human settlements remains a process that should ensure that the benefits of the original intent of providing them are maintained and sustained. This validates the significance and the importance of sustainability in human settlements management.

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