An evaluation of access to adequate housing: A case study of eZamokuhle township, Mpumalanga; South Africa

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Abstract: Everyone has the right to have access to adequate housing. The government must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right. The main objective of the research is to examine beneficiaries’ perceptions about their built environment (housing and infrastructure) to determine their level of satisfaction or dissatisfaction. The main argument made is that lack of adequate housing not only jeopardizes development, but it also creates social and economic challenges. Therefore, lack of adequate housing is a hindrance to sustainable human settlements. The local municipality provides basic services such as refuse removal and water and sanitation. These services are inseparable from housing. There are however serious problems with basic services provided in eZamokuhle, such as poor sanitation and this has a negative impact on the provision of sustainable human settlement in eZamokuhle. The paper calls for the government to commit itself more in providing adequate housing for its citizens as this is the main element of sustainable human settlements.

Subjects: Urban Studies; Built Environment; Development Studies

Keywords: adequate housing; sustainable human settlement; housing quality; eZamokuhle
1. Introduction
Housing is vital in numerous ways. It does not only provide physical shelter, “roof over one’s head”, but how and where people are housed is part to many facets of individual social, economic and wellbeing (Stone & Hulse, 2007). Housing is the central constituent of the built environment and plays a pivotal role in all dimensions of sustainable human settlements. In 1994 it was for the first time that South Africa had a housing policy for all its citizens, as published in the White Paper (1994). The White Paper clearly articulated that the “Government is under duty to take steps and create conditions which leads to an effective right to housing for all” (Liebenberg & Stewart, 1997, p. 150). Crucially, the 1996 South African Constitution stipulates that everyone has the right to have access to adequate housing. As housing challenges compounded despite the mass production of housing in the past decade, there was a pressing need for the South African government to introduce Breaking New Ground policy in 2004 which is an inclusive housing policy an inclusive housing policy. South Africa is currently a signatory to various international agreements on human settlements such as the UN Agenda 21 (1992), Istanbul Declaration on Human Settlements (1996) to name a few. The South African development paradigm has focused on service delivery, and meeting the United Nations housing delivery standards.

This research adopted the United Nations (UN) standards of access to adequate housing as a theoretical framework, which was used to measure the aims of the research. The main objective of the research was to examine beneficiaries' perceptions about their built environment to determine their satisfaction or dissatisfaction. The main argument made in this paper is that the absence of adequate housing not only jeopardizes development, but it also creates social and economic challenges such as lack of access to basic services, sub-standard infrastructure, and unemployment. Therefore, the lack of adequate housing is a hindrance to sustainable human settlements. The paper discusses the following main topics; Materials and Methods (theoretical framework, research methods, Analysis), and findings: water, waste management, sanitation and sewerage, spatial qualities of the settlement and housing quality.

2. Materials and methods

2.1. Adequate housing theoretical framework
In large part, the evaluation of housing programmes contains people’s views on the final product, end result of programmes, government processes and frameworks. The opinions on the end product of housing programmes focus mainly on the satisfaction of quality and built environment. Conclusion made by Rapoport (1977) revealed that human beings have a tendency of evaluating their built environment based on what they perceive to be good to them. This kind of evaluation behaviour is influenced by cultural value, adaptation level, and people’s previous experience (Kantrowitz & Nordhaus, 1980), age, religion, gender, social role and ethnicity. Subjective meaning of people’s perceptions highlights how people perceive their built environment in relation to their needs, aspiration regarding space, and how they discuss about the settlement with family and neighbours. Galster (1987) asserted that people’s evaluation on the built environment is based on aspiration and needs of the community. The questions in the study were formulated around the UN adequate housing standards to examine beneficiaries’ perceptions to determine their satisfaction or dissatisfaction about their built environment. The combination of Rapoport, Galter, and Kantrowitz’s approach provide a unique insight into people’s perceptions of their built environment around them. Together with the theoretical framework above, the UN Habitat 1 adequate housing standards provide an overall framework for evaluating the case study material being presented.

According to (UN-Habitat I, 1976) adequate housing must deliver more than four walls and a roof. According to (UN-Habitat, 2014) for housing to be regarded as adequate, it must meet the following seven standards: security of tenure; availability of services; materials, facilities and infrastructure; affordability; habitability; accessibility; location, and cultural adequacy.
(a) Security of tenure: housing is not adequate if its dwellers do not have a degree of tenure security which assures legal protection against forced evictions, harassment and other threats.

(b) Availability of services, materials, facilities and infrastructure: housing is not adequate if its residents do not have safe drinking water, adequate sanitation, energy for cooking, heating, lighting, food storage or refuse disposal.

(c) Affordability: housing is not adequate if its cost have negative impact on fulfilment of other human rights.

(d) Habitability: housing is not adequate if it does not assures physical safety or offer adequate space, as well as safeguard against the cold, damp, heat, rain, wind, other threats to health and structural hazards.

(e) Accessibility: housing is not adequate if the particular needs of disadvantaged and marginalized groups are not addressed.

(f) Location: housing is not adequate if does not provide employment opportunities or far from economic opportunities, health-care services, schools, childcare centres and other social facilities, or if located in hazardous places or areas.

(g) Cultural adequacy: housing is not adequate if it does not take into consideration the culture of the residents.

2.2. Research methods

Amersfoort is a very small town in Mpumalanga Province in South Africa. The town was established in 1888 around a Dutch Reformed Church which was constructed in 1876. Lying at 1,664 m above sea level in the upper reaches of the Vaal River basin on the banks of the Schulpspruit River, the area was first settled in 1876 when two farmers in the area contributed land to the church, after which Reverend Frans Lion Cachet proceeded to construct a Dutch Reformed church. eZamokuhle is situated northwest of Amersfoort town found in the Mpumalanga Province in South Africa. The township of eZamokuhle meaning “to make it beautiful” lies adjacent to the town. Amersfoort falls within the Dr Pixley Ka Isaka Seme Local Municipality. The study was conducted in all six sections of the township namely: Smallville, Jabavu, Roestein, China 1, Phumlani and China 2.

A range of both quantitative and qualitative methods was adopted for the thesis research, known generally as a mixed methods approach (Gelo, Braakmann, & Benetka, 2008; Hammersley, 1992; Long, White, Friedman, & Brazeal, 2000). These qualitative methods included semi-structured interviews and focus group discussions. Data was collected using survey questionnaires, semi-structured interviews, focus group discussions, primary documents and observation. A 100 households were surveyed; 36% of the respondents were male and 64% of the participants were female. Areas involved were China 1, China 2 and Phumula, Jabavu, al characterised by large population and households compared to Smallville and Roestein with very low population.

The selection of respondents in eZamokuhle for the survey was based on non-random sampling. Non-random sampling is a method which does not have any sampling frame and it is regularly used for convenience and speed. The probability of selection is not statistically determined (Fink, 1995; Frey, Carl, & Gary, 2000). The sampling method adopted primarily because the municipality was not able to provide the researchers with an up-to-date and full record of all households in eZamokuhle. In the survey, a combination of two types of non-random sampling were used, namely, convenience sampling and purposive sampling. With convenience sampling, the participants are chosen because they are easy to access and recruit for research purposes (Fink, 1995; Frey et al., 2000). Purposive sampling involved focusing specifically on household heads within the chosen households. In terms of data analysis, and consistent with approved methods of handling qualitative data (Ashton-Shaeffer, 2001, Rubin, &
Rubin, 1995), transcripts from the interviews and focus groups were analysed and coded with key themes identified. The was analysed thematically.

3. Results and discussion
In general, results of housing beneficiary’s perception on the adequacy level of housing delivered through the government housing programmes in eZamokuhle reveals that it is inadequate. The evaluation was based on Water, Waste Management, Sanitation and Sewerage, housing quality and the quality of Infrastructure and Services. The provision of housing services and infrastructure as well as neighbourhood facilities was rated inadequate. In the study, it was observed that most of the public housing projects investigated lacked adequate supply of utilities and social infrastructures such as sewerage system, and health-care facilities.

3.1. Water, waste management, sanitation and sewerage
A basic water supply service is described as “the infrastructure necessary to supply 25 litres of potable water per person per day supplied within 200 metres of a household and with a minimum flow of 10 litres per minute in the case of communal water points or 6,000 litres of potable water supplied per formal connection per month” (Mufamadi, 2004, p. 7). There is a large water-reservoir, which supplies the whole of eZamokuhle with clean water. Residents in the study area have adequate housing as all households have access to clean drinking and the amount of water usage is sufficient and it is accessed at an affordable price. Water pipe connection is in all plots in the study area. Of great importance, all participants were satisfied with water prices and services. All these standards were used to evaluate water adequacy.

All the households that were surveyed had access to toilet facilities and were linked to the local municipality sewer system. The type of sanitation in the study area is full water-borne sanitation. Toilets in areas of Jabavu, China 1 and China 2 though were reported to be faulty. Most of these toilets were not flushing and residents were required to use a bucket of water in order to flush properly. However, other respondents said that, although they were willing to fix their toilets, they had no funds to do so. Others indicated that it is the duty of the local municipality to fix the toilets. Although the residents from the above-mentioned sections of eZamokuhle have access to sanitation evidence suggests that sanitation is inadequate as most toilets were not flushing, fixing of the toilets was unaffordable and respondents were also dissatisfied with the functioning of toilets. United Nations standards of access to adequate housing expect governments to ensure that housing-related costs is appropriate with income levels, in other words, beneficiaries of housing should afford the maintenance of housing (Fuller Housing Centre 2014). On the other hand, sanitation was adequate in Phumla, Roestein and Smallville sections participants reported that their toilets were functioning properly.

Most respondents in China 1 and 2 indicated that the quality of the sewerage system was very poor, because sometimes the pipes leaked. The sewerage is constantly discharging wastewater primarily carrying urine and faeces that produces foul smell. It took a while for the local municipality to fix the problem, and this was seen as a health hazard to the residents. The sewerage system conditions in these areas does not meet the UN-Habitat (2014) adequate housing health standards because it does not promote healthful housing, protect residents against communicable diseases, promote individual and community health, also personal and domestic hygiene. The condition of the sewerage system is also not in line with the National Housing Programme’s building norms and standards for standalone houses. According to the standards, local government are responsible to provide and maintain infrastructure including domestic waste-water and sewage disposal systems within their areas of jurisdiction. It further stipulates that, “be capable of receiving sewage from the water-borne sanitation system, carrying the design hydraulic load, and discharging into the local authority’s bulk sewer infrastructure” (KZNDHS, 2014, p. 5). In the study area, there is garbage removal once a week. In some sections of eZamokuhle, waste dumping causes an unpleasant smell and for garbage to pile up in the community. This includes throwing away any kind of waste, be it trash, appliances, and garden and domestic litter, all in areas not
designed for garbage. The municipality faces a great problem in terms of having an effective waste management programme due to the absence of an Integrated Waste Management Plan (Malatsi, 2013). In this regard, the municipality is mired with the challenge of ensuring that waste management is systematically done in accordance with the best possible methods, effectively, efficiently and at an affordable cost by the municipality. It does seek to decrease waste, which comes to local landfill sites by encouraging reuse, recycling and prevention of waste generation (Malatsi, 2013). But this has not been particularly effective to date.

3.2. The quality of infrastructure and services
Public infrastructure and utility services contribute, at least potentially, to the livelihoods and social networking of local residents. This is important given the argument by the UN-Habitat (2012, p. 4) that such public goods are part of “the territorial habitat within which man [and woman] lives, works, raises his [or her] family and seeks his [or her] physical, spiritual and intellectual well-being”. The quality of these public goods, their spatial arrangement and the kinds of access to them available, influence quite significantly the effective functioning of human settlements and the quality of social reproduction for residents (UN Human Settlements 1976). In this regard, residents in eZamokuhle experience significant problems.

In the study area, there are only three main roads, which, are tarred. Most of the minor roads in eZamokuhle are gravel roads but they are all generally well-maintained and there is road access to each and every stand. The transport system involving public transport namely, kombi taxis enables the movement of residents to town and from places in town back to eZamokuhle along the main route called Bree Street. This transport service, involving connections to within eZamokuhle, represents a significant way of integrating the local spatial environment with the surrounding transport routes to areas such as Eskom Majuba Power Station, Volktrust and Emerlo. Despite the fact that there is road transport infrastructure, many people in the study area walk in order to save money. Most study participants were satisfied with the distance from eZamokuhle township to Amersfoort in town which is the main employment and shopping centre. It was reported that to walk from the study area to town takes approximately 35 to 45 minutes. In contrast, a taxi takes approximately 5 to 8 minutes to town. Though the distance to Amersfoort town is short, the taxi services if used extensively form a significant part of the average household budget in eZamokuhle. As per UN-Habitat (2014), adequate housing standards transportation and accessible roads in eZamokuhle are adequate. Access to transportation allows community members to easy commute from the township to other neighbouring areas. The roads are accessible and generally well-maintained, taxi fare to the neighbouring town where most residents are employed is less expensive.

The supply of electricity in Ezamokuhle is generally overhead and no streetlights are installed, which is of major concern amongst residents with regard to public safety. Streets lights are only found in the main road called Bree Street which runs from Amersfoort to eZamokuhle. High mast lighting was only installed in Roestein, Jabavu and Smallville. However, Municipal Infrastructure Grant (MIG) funding now has been secured for the installation of streetlights. No other network upgrades are currently proposed. Zamokuhle shares the 500 kVA capacity with Amersfoort and therefore no capacity backlog is recorded for the town (Malatsi, 2013). In China 1, China 2 and Phumula sections, residents reported a high level of crime in the absence of streetlights. Some study participants indicated that they relied on their own lights installed on the exterior of their houses in order to protect their belongings. However, some participants noted that external lights are expensive to purchase and install; as well, the lights consume considerable electricity. These residents rely on the indirect lighting coming from their neighbours’ lights and/or the inadequate light from high mast lighting from other sections which reach them. In Roestein, Jabavu and Smallville lighting is adequate as there is high mast lighting. In China 1, China 2 and Phumula there is lack of street lights which jeopardizes residents’ safety. The residents are not satisfied with the high level of crime caused by lack of street lights. Some respondents indicated that external lights are expensive to purchase and install and the lights consume considerable electricity. In China 1, China 2 and Phumula lighting is inadequate, security is also inadequate and the cost of installing exterior lights is unaffordable in these sections of the township. This does not comply with UN (2014) standards on access to adequate basic
infrastructure which should be available at an affordable cost. For houses to be affordable the beneficiaries have to be empowered economically, physical safety of occupants must be guaranteed, and availability of certain facilities are essential for security and in this case is street lights.

The satisfaction of basic human needs, including the eradication of poverty, is vital for sustainable human settlements. These needs include the full ambit of health care, food, clothing and education (Fung, 2008). There is only one clinic in eZamokuhle township and a hospital, which is found in Amersfoort town called Elliot Ballot Hospital; one private medical centre that is beyond the financial reach of a typical eZamokuhle resident. At the same time, the clinic is under-resourced such that, quite often, there is no medication available. This means that people suffering from even basic health problems, for instance, cold and flu, are simply turned away without any medical attention. Indeed, it has been officially announced that the clinic does not provide medication for flu. The absence of medication at the local clinic compels residents to consult more expensive private medical doctors who are also some distance away from eZamokuhle. The cost of access to private medical doctors excludes many households who cannot afford to pay for the service. In the end, because of the inadequacies of the public clinic, healthcare by default becomes commodified for eZamokuhle residents as health access is contingent upon payments being made. This of course severely disadvantages poorer households, and it is not consistent with the South African Constitution which stipulates that everyone has equal access to basic healthcare regardless of social background and circumstances. Despite the fact that eZamokuhle township has access to healthcare the services are poor and unaffordable. The health-care conditions in the study area indicate that they are not in accordance with UN-Habitat (2014) adequate housing standards on health. The UN-Habitat adequate housing standards states that housing is inadequate critical needs of disadvantaged and marginalized groups are not taken into account. It further states that housing inadequate if housing-related costs compromises the citizens’ enjoyment of other human rights. In short, residents in the study area suffer financial strain when paying private health-care services as government health-care institutions lack essential medication and they are inefficiently run.

At Ezamokuhle there are three schools. There is one primary school called Amersfoort Combined Primary School from grade 1 to grade 7, another primary school which is not yet opened called Phumula Primary School for grade 1 to grade 4 and a high school called Hlelimfundo High School for grade 8 to grade 12. In terms of schools, the same difference in terms of proximity existed as with the clinic, with residents in China 1, Phumlani and China 2 being most disadvantaged. Sometimes, and especially on rainy days, school children from these sections have to take a taxi to school and this then increases household expenditure when the household budget is already under severe strain. Generally, residents are satisfied that the children have access to education and this conforms to UN habitat adequate housing standards (UN-Habitat, 2012). However, the issue of affordability is a serious challenge for some households who cannot afford costs associated with school uniforms, shoes, transport fare, etc. Housing is not adequate if its cost have negative impact on fulfilment of other human rights, such as education in this case.

3.3. Housing quality

Despite the current government’s substantial rolling out of housing service delivery since it came to power in 1994, it has become clear that housing remains a serious challenge not only in terms of quantity of provision but also quality of the housing stock. In many ways, housing service delivery represents one of the squashed expectations of the majority of the poorest sections of South Africa and a blow to the promise of a “better life for all. However, in the recent years especially under the Breaking the New Ground programme the South African government has made remarkably progress in providing quality housing for its citizens.

In examining questions of quality more specifically of the public housing stock itself, the study found that some houses in Smallville, Jabavu, China 1 and China 2 all built under the RDP housing programme had cracks in their walls. The cracks indicated that the building material was of very
poor quality and that this also meant poor workmanship. The houses provided are frequently exceedingly hot in summer and very cold in winter because the building construction was compromised in order not to escalate building costs due to insufficient resources with the use of metal sheets compounding the problem. The structural appropriateness of housing is the main indicator of housing quality and home values in a settlement (Kutty, 1999). The research identified a number of quality problems in the study area. These problems include inappropriate use of brick force; inappropriate or no brick bonding; poor sand and cement mix; poor workmanship; structural weaknesses; use of low quality building material; no on-site monitoring of housing projects; poor quality bricks, poor plaster use to exterior walls and structural failure as a result of poor foundations. Houses in Smallville, Jabavu, China 1 and China 2 are not durable as they do not protect beneficiaries from extreme weather conditions such as rain, humidity, cold, heat, etc. Housing in the three sections of the township is inadequate because it is not habitable and the beneficiaries are dissatisfied with the structural quality. Housing adequacy is not adequate if it does not assure physical safety or offer adequate space, as well as safeguard against the cold, damp, heat, rain, wind, other threats to health and structural hazards (UN-Habitat, 2012). While the theory of adequate housing embodies the notion of structural adequacy of a house, quality of life is influenced by more than the structure of the dwelling.

Although the government apparently has the will and funds to build houses on a reasonably large scale, the poor quality of the structures built in Smallville, Jabavu, China 1 and Chino 2 sections speak to the existence of inadequate mechanisms for monitoring the construction process. Monitoring of the housing projects in the three sections was very weak with many important stages in the planning and building process such as rock and soil conditions being neglected, seemingly because of haste or lack of experience. There were key gaps in the quality control process and, in some instances, constructing for quality was sacrificed for quantity with those in charge of quality control turning a blind eye to faults in the haste to finalise projects or in the rush to enrich themselves and others. This was especially evident in the case of Jabavu section. This is consistent with the argument by Turner (1976, p. 94) that “bureaucratic systems which offer mass housing would only be concerned with the quantity and not with the quality of the houses”. This problem has been deepened further by the presence of emerging African building contractors who received priority in the granting of tenders. In building houses in eZamokuhle, they used cost-cutting measures.

On the other hand, in the Roestein section, the houses are four-roomed with asbestos sheets for roofing. These houses were built under the apartheid regime. In Phumula, the houses also consist of a four-room structures with corrugated iron roof sheeting, which were built under the BNG programme. Houses in both Phumula and Roestein sections are durable and habitable. The study found that the foundations, walls and ceiling do not have any defects. The roofs are structurally sound there were no reports of leaks. Beneficiaries in these sections were also satisfied with the structural quality of housing. In overall, houses in these sections meet the UN standards on adequate structural stability and durability because the houses are habitable, offer physical safety, safeguard against adverse weather conditions and structural hazards (UN-Habitat, 2012).

4. Conclusion
The local municipality provides basic services such as refuse removal, water and sanitation to residential properties. Generally, residents (from China 1, China 2, Jabavu, Smallville) are deeply dissatisfied with the built environment, the quality of housing and basic services such as electricity and sanitation. There are serious problems with the conditions of the basic services provided and this has a negative impact on the delivery of adequate housing in eZamokuhle. However, there is a marked improvement in BNG houses compared to the older RDP housing. Residents from Phumula section which was built under BNG programme are generally satisfied with basic services such as structural quality of their houses, sanitation. Although there seems to be some progress from the local municipality in building better quality houses, it is premature to ascertain fully whether the BNG programme is addressing the issue of poor quality housing in eZamokuhle. The research suggest, among other recommendations a more rigorous monitoring regime must be
enforced to maintain standards. Emphasis on quantity though hard to fault given house shortages in the country should not be at the expense of providing quality structures. The UN standards on adequate structural stability and durability as espoused in Habitat (2012) offer additional quality assurance in additional to national standards. Professional bodies need to come on board to enforce adherence to codes of conduct by members.

References
Ashton-Shaeffer, C. (2001). Thematic networks: An analytic tool for qualitative research. Qualitative Research, 1(3), 385–405. doi:10.1177/146879410100100307
Fink, A. (1995). How to sample in surveys (Vol. 6). London: Sage Publications.
Frey, L. R., Carl, H. B., & Gary, L. K. (2000). Investigating communication: An introduction to research methods (2nd ed.). Boston: Allyn and Bacon.
Fung, K. W. E. (2008). Planning, design, and sustainability of public housing in Hong Kong: The Centre of Urban Planning & Environmental Management, The University of Hong Kong.
Galster, G. C. (1987). Identifying the correlates of dwelling satisfaction: An empirical critique. Environment and Behavior, 19(5), 537–568. doi:10.1177/0013916580195001
Gelo, O., Braukmann, D., & Benetka, G. (2008). Quantitative and qualitative research: Beyond the debate. Integrative Psychological and Behavioral Science, 42, 266–290. doi:10.1007/s12124-008-9078-3
Hammersley, M. (1992). Deconstructing the qualitative-quantitative divide. In J. Brannen (Ed.), Mixing methods: Qualitative and quantitative research (pp. 39–55). Aldershot: Ashgate Publishing Company.
Kantrowitz, M., & Nordhaus, R. (1980). The impact of post occupancy evaluation research: A case study. Environment and Behavior, 12(4), 508–519. doi:10.1177/0013916580124007
Kutty, N. K. (1999). A new measure of housing affordability: Estimates and analytical results. Housing Policy Debate, 16(3), 113–142.
KZNDHS. (2014). Guide to the home building manual. Framework for norms and standards - Human settlements. RSA.
Liebenberg, S., & Stewart, P. (1997). Participatory development management and the RDP. Kerwyn: Juta and Co. Ltd.
Long, R. G., White, M. C., Friedman, W. H., & Brazeal, D. V. (2000). The qualitative versus quantitative research debate: A question of metaphorical assumptions? International Journal of Value-Based Management, 13, 189–197. doi:10.1023/A:1007850027589
Malatsi. (2013). Integrated Development Plan (IDP) (2013/2014). Dr. Pixley ka Isaka Seme Local Municipality.
Mufamadi, S. (2004). From programme to projects to sustainable services. The Municipal Infrastructure Grant, 2004–2007.
Rapport, A. (1977). The meaning of the built environment: A nonverbal communication approach. The University of Arizona.
Rubin, H. J., & Rubin, I. S. (1995). Qualitative Interviewing: The Art of Hearing Data (2nd ed.). London: Sage Publications.
Stone, W., & Hulse, K. (2007). Housing and social cohesion: An empirical exploration. Australian Housing and Urban Research Institute Swinburne-Monash Research Centre.
Turner, J. F. C. (1976). Housing by people: Towards autonomy in building environments. London: Marion Byers. United Nations. (2012). Women and the right to adequate housing. New York and Geneva: Author.
United Nations. (1976). The Vancouver Declaration on human settlements. United nations conference on human settlements, Vancouver, Canada.
United Nations. (2014). Annual Progress Report 2014: Implementation of the Strategic Plan (2014–2019), New York.
