Assessing the Quality of Urban Life in Three Neighbourhoods, Lilongwe, Malawi

Laura MacLean, James Hutton Institute & Ashraf M. Salama, University of Strathclyde
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Abstract:

Recent literature corroborates a lack of critical engagement with contemporary East-South African cities and a scarcity of focus on the quality of urban life in Africa at large. Geographically situated in Malawi's capital city, Lilongwe this study provides insights into the quality of urban life (QoUL) in three heterogenous neighbourhoods in the city from the perspective of the residents. The article examines key indicators which impact urban life. Data are gathered through neighbourhood profiling and a residential attitude survey. It focuses on the individual resident's subjective assessment of their quality of life, and their view of four domains of urban life: namely the physical, social, economic and well-being domains. Variances in demographic and socio-economic groups are discussed as well as the variances in QoUL found in three neighbourhoods. The results reveal that there is significant variance in the QoUL across the three neighbourhoods in Lilongwe. The study contributes to the ongoing discourse of QoUL by asserting that its underlying domains should not be viewed in isolation as they incessantly impact one another and that confronting urban challenges in this context should be considered at a neighbourhood scale.

1. Introduction:

The relationship between a person and their urban environment has been of interest to social scientists for decades. With the majority of people living in cities, it has become fundamental to examine the relationship between the qualities and characteristics of an urban setting, and the perceived satisfaction of its residents. The preponderance of scholars proposes that the concept of Quality of Urban Life (QoUL) developed as an academic discipline in its own right after the launch of the scientific journal 'Social Indicators Research' in 1974 (Ilic et al., 2010; McCrea et al., 2011). This was part of the Social Indicators Movement, which developed over the 1960s and 1970s in Scandinavia and the United States due to a belief that economic indicators alone could not reflect the QoL of nations (Ilic et al., 2010). In recent years, studying QoUL has shifted from a focus on financial goals to an emphasis on psychological goals, transforming from a concern with being well-off to an interest in well-being. QoUL research includes factors pertinent to the physical, social, economic and well-being environments. It is this relationship between people and their everyday urban environment that is known as a quality of urban life (QoUL) study.

This study focuses on the resident's assessment of the quality of urban life using Malawi's capital city, Lilongwe, as a case study. The study is positioned geographically in Malawi and is contextualised as a response to the prevalence of existing empirical QoUL measurement frameworks which are developed based on Western case studies and standards. The research is premised on the notion that the concept of quality of life (QoL) is interpreted differently across cultures, and there is little evidence to suggest that existing methods can be applied cross-culturally (Pan, Chahal & Ward 2016; Diener 2007). This is due to quality, per definition, being context dependent. As such, an individual's perception of quality will differ depending on the cultural setting, and in time (Kamp et al., 2003). In this respect, this paper argues that although there are aspects of urban life that are pan-cultural, there are also culture-specific features that make urban life unique in each city or urban or

residential setting. Consequently, it is firmly believed that QoUL studies should balance universal values and context specificities when designing their measurement tools. Therefore, in the context of this study, statistical analysis of residents' perception of the quality of urban life and objective neighbourhood characterisation are integrated to provide strategies for enhancing the quality of urban life at a neighbourhood scale in Malawi's capital city, Lilongwe from the perspective of the city's residents.

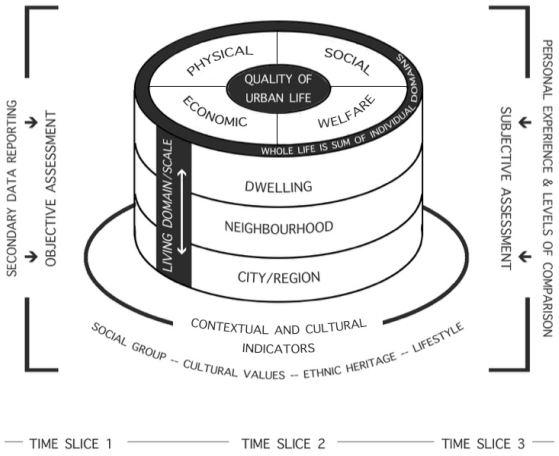

Figure 1. Conceptual QoUL model (MacLean & Salama, 2019)

2. Quality of Urban Life Models

The relationship between a person's QoL and their urban environment is intricate. The satisfaction felt by an individual living in different settings is influenced by their personal characteristics, unique values, expectations, perceptions and evaluations, as well as their demographic and socio-economic characteristics (Marans, 2012). This makes QoUL challenging to measure, as it is a multi-faceted phenomenon saturated with personal meanings. A model framework should thus be utilised when evaluating QoUL to standardise the approach to the study (MacLean & Salama, 2019). By using a model, the study can accommodate a large number of factors at once (Marans & Stimson, 2011). These can be compared at different geographic scales and allows for analysing the indicators in a strategic manner. This is significant since levels of satisfaction within one domain of life are known to influence satisfaction in other domains (Marans, 2012). Models assist researchers to think geographically about the complex set of indicators that are found in the urban environment and thus guide the research process. They also help produce outcomes that influence public policies in cities. Despite the significant role that a model approach can play in investigating QoUL, there is not a single agreed model or comprehensive set of measures that is universally accepted for the measurement and analysis of QoL (Kamp et al., 2003; McCrea et al., 2011).

Through a detailed comparative critique of existing frameworks, the authors have developed a conceptual model to establish a context specific, multidimensional QoUL model (Figure 1) (MacLean & Salama, 2019). The figure presents a pictorial representation of the seven core dimensions of QoUL as identified in this study. These are: the domains of urban life, geographic scale, time, personal experience, objective and subjective assessments, culture and context, and indicators. The model aims to be far-reaching and wide in scope. However, it is cautious not to be overly prescriptive, and thus, it provides a set of criteria that can be utilised to guide a QoUL study and

should be used with flexibility upon a deeper understanding and appreciation of an urban environment and the associated contextual characteristics.

One of the most significant issues that this model aims to address is that there is often a lack of focus on culture and context in the majority of existing QoUL models and frameworks. Coupling this concept with the fact that the majority of existing models and frameworks are designed and tested within the context of the West triggers the need for a new context-specific model to guide the research process and address the particularities of the context. Through earlier examination of the existing QoUL models (MacLean & Salama, 2019), it was anticipated that the existing models and indicators do not reflect the urban conditions under investigation of Lilongwe, Malawi. There has been a growing interest to emphasise the need to bring the urban experiences of Eastern-Southern African (ESA) cities into the broader theoretical realm and global discourse (Parnell and Robinson, 2012). Hitherto ESA cities have been in the background of urban studies, therefore, there is a lack of critical engagement in the way in which contemporary ESA cities work. In the past, theories that were successful in the global North were transposed to the global South without critical thought on whether the associated indicators are relevant, are understood concerning other drivers of change, or if they apply at all (Parnell and Robinson, 2012).

Consequently, this study echoes the belief of many modern scholars who state that the urban theory must engage with the distinctive interpretations drawn from the diverse physical, social, economic and welfare realities of cities in the South (Jenkins, 2013; Anderson, et al., 2015; Murray and Myers, 2006). The study resonates with the emerging body of knowledge which engages with various environmental aspects and social indicators of sustainable neighbourhoods and the associated placemaking strategies (Adewumi et al., 2019; AlWaer et al., 2021; Martins et al., 2021). Concomitantly, this examination focuses on the residents' subjective assessment of their urban environment to create a scholarly space for alternative concepts and frameworks to develop. Accordingly, the study aims to operationalise the context-specific framework (Figure 1) with a focus on three residential neighbourhoods in Lilongwe in order to ensure that context and culture are at the core of the study.

3. The Research Context: Lilongwe, Malawi

The central region of Malawi has a long history of human settlement. The origins of Lilongwe as a modern town date back to around 1904 when Lilongwe was made the administrative centre for Lilongwe district (Munthali, 2017). As Lilongwe grew, the physical layout of the town echoed the colonial context which was characterised by racial segregation (Kalipeni, 1999). Through tightly regulated conditions, indigenes were often only allowed to live in certain areas of the city which were commonly inadequate. According to Kalipeni (1999), in 1924, Colonial Lilongwe was divided into sectors which saw natives residing on the eastern bank of the Lilongwe River, Asian population residing to the southeast, and Europeans living in the western bank of the river. The western bank is on higher ground, thus many believed it to have a lesser risk of diseases. As such, while the city is thought to be founded on the western bank of the river, native residents were moved to the eastern bank in 1924 and by 1947, Lilongwe was considered a township.

A number of studies convey that from the outset Lilongwe was a segregated city with European core on the west of the river and African and Asian cores on the eastern edge of the river (Potts, 1985; Abubakar & Doan, 2010; Englund, 2002). Lilongwe is a planned capital relocation project developed after Malawian independence in 1964 and thus is considered a relatively young capital city. The decision to move the capital from Zomba to Lilongwe was based on three main elements; firstly, to deliver a more central and neutral location, secondly, the desire for greater regional equality, and

thirdly, to achieve political aims Theoretically, providing a central location allows for efficient admin and it helps enhance the regional spread of wealth and development by forming growth poles.

Today Lilongwe city covers an area of 393km2 with a population of approximately 989,000, based on 2018 census l (Figure 2). Although the city was carefully planned by South-African designers, it faces a number of urban challenges and the associated population growth and lack of services and housing provision. The 1986 Lilongwe Outline Zoning Scheme divided modern Lilongwe into 58 areas for management and development purposes. There are 13 designated land uses which are intended to guide and regulate development within the city's boundary. There are various classifications of residential neighbourhoods. Unplanned and traditional housing Area (THA) settlements are estimated to take up around 58% of the area allocated to housing. The majority of the informal residential neighbourhoods are located at the periphery of the city, one of which is used as a case-study neighbourhood by this research (Area 36). Lilongwe is host to a large area of green space including the Botanical Gardens and the Lilongwe Wildlife Reserve which are located centrally and are an important part of Lilongwe's identity (bordering Area 18). Lilongwe is now Malawi's most populous city and is gradually becoming the country's economic capital.

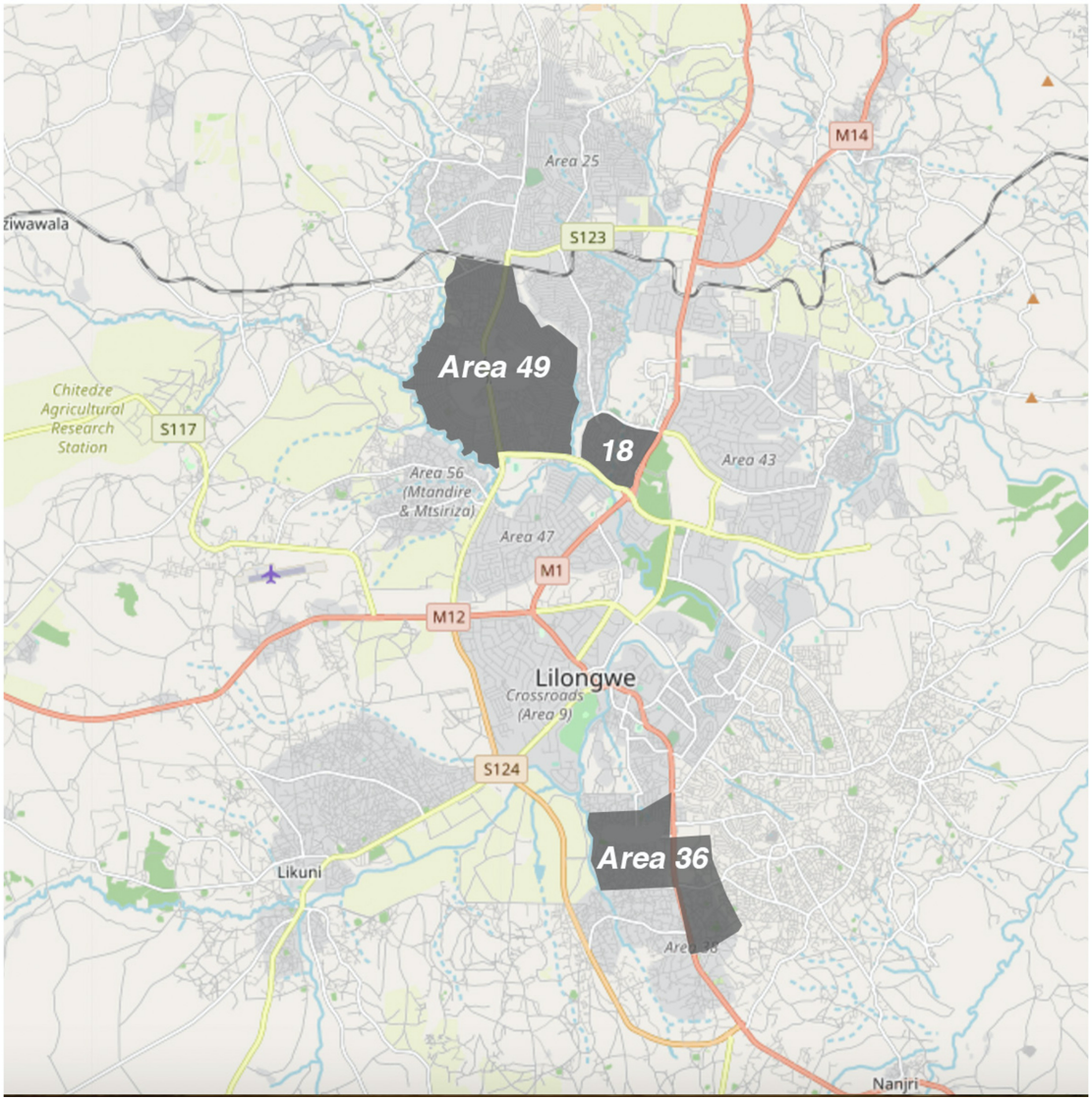

Figure 2. Map of Lilongwe and three residential neighbourhoods identified for examination

4. Methodological Approach to Investigation

Neighbourhoods are important physical and social entities of cities, and in the context of Malawi can be viewed as liveable communities which are essential for the QoUL of their residents. By understanding various characteristics of the neighbourhoods and how they impact residential QoUL, researchers can benchmark conditions, measure progress and improve accountability in planning efforts to enhance QoUL and community satisfaction (Miller et al., 2013). This examination identifies three distinct neighbourhoods in Lilongwe to provide a diverse representation of the population of Lilongwe. It should be noted that the study and findings presented in this paper are part of a wider and comprehensive investigation which covers an eight-step research methodology which included key procedures ranging from the literature reviews to comparisons of previous similar QoUL studies in other contexts and from systematic observations and walking tour assessment procedures to an attitude survey. Yet, the focus of this article is on the residents' assessment of the quality of urban life in the three identified neighbourhoods. Where relevant, the discussion of key findings is corroborated by the contemporary body of knowledge and earlier studies conducted by urban researchers.

The development of the attitude survey involved three procedures:

- Identification of relevant indicators: In preparation for a robust attitude survey, a procedure engaging twelve experts to feed into the research process was undertaken in order to identify QoUL indicators that are relevant to the residential context of Lilongwe. The experts were asked to prioritise indicators to ensure that residents are queried about the most important indicators which are of concerns to them.
- Justification of selection and profile development of three residential neighbourhoods: Various neighbourhoods were investigated objectively based on aspects such as their classification, location, density, and degree of change to conclude with three heterogenous neighbourhoods.
- Developing, testing and conducting the attitude survey.

4.1 Identification of indicators through Expert Engagements

Twelve experts were invited to agree, dispute, or amend a set of indicators presented to them through an online survey. The aim of this procedure was to tailor and adapt the study to the factors which are essential in Malawi. Experts were divided into three categories: government officials, academics and non-governmental organisations. Experts were provided with a questionnaire to rank, edit or remove indicators across the domains of urban life. Each indicator was associated with a concise definition for clarity and to avoid any ambiguity. The experts were also provided with an accompanying booklet which states detailed definitions for each indicator. The results of the expert panel assessment provide a comprehensive, corroborated and reliable list of 22 indicators that are used in the attitude survey.

4.2 Analytical Description of Neighbourhood Profiles

The various neighbourhoods are investigated objectively based on aspects such as their classification, location, density to conclude with three heterogenous neighbourhoods. The selected neighbourhoods are Area 18, Area 36 and Area 49 (Figures 3 & 4). Neighbourhoods in Lilongwe are named numerically, and the numbers are dispersed throughout the city chronologically as opposed to geographically, meaning Area 1 is the eldest in the city. The neighbourhood profiles seek to detail and analyse the lived-in situations of the three neighbourhoods in Lilongwe. They are formed through a mixture of objective data reporting and structured observations. Table 1 and Figures 3 & 4 offer a summary of the three neighbourhoods data including maps displaying the location of amenities, objective classifications, and photographs of the domestic architecture.

Table 1 illustrates that the three neighbourhoods have been organised into different zoning classifications based on their various physical characteristics. These classifications are provided by UN-Habitat 2011. From these classifications, it is hypothesised that Area 18 be home to the most permanent structures, while Area 36 is likely to have a significant variance of building typologies. The land area and population size are distinct across the three case-study neighbourhoods. Area 18 has the smallest land area and population shown in Table 1. The land area of Areas 36 and 49 are similar, but Area 36 has a considerably larger population than Area 49. By comparing the population with the land area, it is decerned that the density of the three neighbourhoods varies. Area 18 is the least dense with a density of 4065 people per km^2 while Area 36 is the densest neighbourhood at 10010 people per km^2 and Area 49 is in the middle with 5486 people/km^2 (Figure 3).

	Area 18	Area 36	Area 49
Zoning Classification (UN-Habitat, 2011)	Permanent high and open space	Quasi density	Traditional high density
Land Area	214.466 HA	926.438 HA	964.496 HA
Population	8,718	92,733	52,915
Over age 18	72%	54.6%	60%
Density	4065 people/km^2	10010 people/km^2	5486 people/km^2
Male/Female	55.5%/44.5%	50%/50%	51%/49%
Proximity to centre	3.5km	9.6km	7.2km
Number of schools	13	7	11
Number of health facilities	1	1	2
Number of police stations	1	0	0

Table 1. Characteristics of three identified neighbourhoods

Figure 3. Neighbourhood density profile (area 18 left, area 36 middle, area 49 right)

Figure 4. Neighbourhood spatial structure and residential profile (area 18 left, area 36 middle, area 49 right)

Figure 4 (Maps A, B and C) illustrates the spatial location of amenities in the three neighbourhoods. Map-A displays that Area 18 has excellent green and open space available. This has positive implications for QoUL as residents have recreational spaces to spend their free time. Opposing this, due to Area 36's high density, there is a lack of green or open space available for residents. Activities often take place in the gardens or verandas in Malawian neighbourhoods, including cooking and laundry (Lewinson, 2009; Hansen, 1997). This high-density urban form puts residents of Area 36 in view of their neighbours and passers-by, resulting in urban life being found in public spheres. As such, this has negative implications for QoUL particularly with regards to feelings of privacy which in turn has negative implications for feeling of safety. Residents' perception of these factors will be reviewed further in the residential attitude survey.

Images D, E and F) of Figure 4 show dwellings in each of the neighbourhoods. The majority of houses in Area 18 are made from permanent materials. Many houses are located behind walls and gates. Often walls and fences reflect a desire for privacy by enclosing a plot. There are many homes in Area 18 which have sidewalls but are open to the street; this implies a desire for privacy as opposed to safety as residents are likely to build front walls first if they are seeking safety (Jenkins, 2013). This suggests that Area 18 has a secure atmosphere as residents to not always feel the need for front walls. The houses in Area 36 are predominantly made from traditional materials and techniques, and many use combination constructions. There is less space between buildings in Area 36 than found in Areas 18 and 49. It displays that many homes do not have fences or walls to partition between themselves and their neighbours, nor do they have verandas to transition residents from the busy street life to private home life. Due to the lack of walls, fences, verandas or vegetation, residents in this neighbourhood likely feel their life is more public than is experienced in the other case study sites. It is anticipated that the neighbourhood feel less safe due to the high density and lack of walls or fences, which will be further investigated in the residential attitude survey.

The neighbourhood profiles are essential for providing an initial objective analysis of the case study neighbourhoods. These provide inferences of the QoUL of the neighbourhoods, suggesting that residents of Area 18 and Area 49 are likely to perceive good QoUL as they have good quality

buildings, are close to the city centre and Area 18 particularly has excellent green and open spaces available displayed in Figure 4A. Congruently, the neighbourhood profiles postulate that residents in Area 36 will perceive their urban life as highly public and may feel their home is not a good quality building and that there is a lack of social space available. The focus of the following section is to understand how residents perceive the qualities of their neighbourhood.

4.3 Conducting the Attitude Survey

The most commonly used method for measuring and assessing QoUL is residential surveys (Pacione, 2003; McCrea, 2011; Yin, 2017). This is a widely acknowledged QoUL data collection method due to its capacity to enable an inclusive subjective perspective of the residents who live and work in particular environments. These are typically designed to gather information on scaled attributes that relate to QoUL domains (McCrea, et al., 2011). The focus is on the resident's behaviours, assessments and evaluations of aspects of the urban environment that affect their QoL in general, and QoUL in particular (Low, et al., 2018). As the examination was conducted across three residential neighbourhoods, only those who live in the neighbourhood were targeted to participate in the survey in order to provide a purposeful sample. The surveys were conducted by three trained, local fieldwork assistants. Each of the fieldwork assistants are bilingual between Chichewa and English. Notably, local fieldworkers is recognised as a successful technique as they know the area well and are not intimidating to occupants of the area (Westaway and Gumede, 2001).

165 surveys were administered in the form of face-to-face interviews, which were structured around the questionnaire. Encouraging mutual trust and following standard research ethics procedures in terms of consent and anonymity, residents were approached at their home and each interview took around 1 hour to complete with no incentives involved. The response rate was 100%, with the research assistants commenting that residents began approaching them, asking if they can take part and be included in the survey. This is encouraging as it confirms that residents are keen to be involved in public participation matters. Residents were asked to provide their subjective assessment of specific QoUL indicators concerning their local neighbourhood.

4.4 Domains, Key Factors, and Methods of Analysing Responses:

The results of the attitude survey are reported across the four domains of urban life as extracted from the conceptual model (Figure 1); namely the physical, social, economic and well-being domains. Indicators associated with each domain are detailed in Table 2 in the order that they were prioritised by the expert panel. For the purpose of this paper, the research places emphasis on one key indicator from each domain. This aims to provide a sample of the QoUL in each domain of urban life of the residents who participated in the residential attitude survey. The selected indicator is emphasised in *Bold* letters as shown in Table 2.

Physical Indicators	Social Indicators	Economic Indicators	Well-Being Indicators
- BUILDING AND HOUSE QUALITY	-Local Governance -Personal Relationships	-Household Income & Expenditure -Work Status	-Health Services -Physical Well-Being (Health) -Environmental Services & Basic Infrastructure
-Physical Urban Infrastructure -Urban Transport & Accessibility -Density -Ecological Quality	**- PUBLIC MEETING SPACES** -Sense of Community -Place Attachment	**- TENURE AND HOME OWNERSHIP** -Education Status -Poverty Rates	**- URBAN SAFETY**

Table 2. Indicators included in the residential attitude survey

The analysis intends to link the dialogues of objective profiling with subjective surveys. By so doing, a more reliable and valid inference of the conditions of QoUL in Lilongwe than if one strand of research is utilised. The analysis involves a range of univariate, multifactor, regression and descriptive statistics. The multifactor analysis compares the effects that indicators have on one another. The comparisons relate to the neighbourhood profiling where indicators are promulgated to have certain relationships, which are tested though the quantitative data analysis. The research further uses regression analysis to assess the statistical relationship between the domains of urban life using a Spearman's correlation. This is a nonparametric measure of rank correlation. It is used to assess how well the relationship between two variables is described using a monotonic function.

5. Neighbourhood Population Profile and QoUL

Collecting demographic information in a survey is significant to the analysis as it is common to find variations between demographics and socio-economic groups with regards to their subjective assessments of their satisfaction with overall QoUL (Low, et al., 2018). Personal characteristics of respondent's backgrounds are useful for making policy recommendations for different sectors of the population (MØLLER and Schlemmer, 1983). By gaining the demographic and socio-economic information, the analysis can compare between groups to understand if particular sets are affected differently by the factors of their city. Table 3 shows the aggregate effects of residential QoUL with different demographic characteristics. The residential mean satisfaction scores have been calculated to analyse the variance. The table also illustrates various demographic classifications in the left column. This then presents the overall satisfaction, which is categorised by the three case study neighbourhoods. This analysis uses the mean result for subjective assessment of overall satisfaction on a scale from 1- Definitely not satisfied, to 4- Definitely satisfied. The number in brackets is the percentage of respondents who are in the classification.

4.1 QoUL and Age

Table 3 confirms that age groups and show variations with their satisfaction levels. Overall, those aged between 50-64 report the highest level of satisfaction with a mean score of 3.07 out of 4. However, the youngest category surveyed report feeling least satisfied with their QoUL, as 16-24-year-olds provided a mean of 2.21 out of 4. This corresponds with earlier research (Cooper, et al., 2011; Mercier, et al., 1998) which asserts that happiness and QoUL are often understood to increase with age, especially in low- and middle-income countries. However, it is significant to note that the 65+ age category sees a decrease in overall satisfaction (mean 2.60/4). This could be attributed to that fact the respondents over 65s are experiencing poorer physical health which has a direct impact on their perception of their QoUL. This confirms that the various age groups have a different perception of their QoUL, which accentuates the important role personal experience plays in the perception of a person's QoUL as emphasised in the conceptual model (Figure 1).

5.2 QoUL and Gender and Relationship Status

Malawi is a matrilineal country; thus, women exercise considerable authority alongside their brothers with regards to land ownership. This is statistically meaningful as evident in Table 3 which illustrates that there is no significant difference between gender and QoUL in Lilongwe. Reviewing the literature on the topic of gender and QoUL, it is recognised that often variance in QoUL has more to do with age than gender (Mercier, et al., 1998; Carr, et al., 2014). This echoes the findings from this study; therefore, the data appears to be representative of existing literature. The discourse of QoUL and relationships presents that relationship status is equally salient to both men and women (Carr, et al., 2014). This is particularly the case for older people, as both men and women pare down their social networks to include only connections which are important to one's overall well-being. In this respect, the multi-variate analysis presents that the two least satisfied groups overall are those

who are single (mean 2.39/4) and divorced (mean 2.22/4). The most satisfied group overall are those who are living with their partners (mean 2.66/4). This suggests that being in a happy, stable relationship is positive for an individual's QoUL. This is significant because the findings clarify the discrepancy between different demographic classifications.

Difference in the mean scores of demographic and socio-economic groups on the satisfaction with overall QoUL and the three neighbourhoods researched in Lilongwe.				
	Mean score based on a 4-point forced Likert scale (% of respondents within classification)			
Demographics	Subjective assessment of the overall QoUL **in Lilongwe**	Subjective assessment of QoUL **in Area 18**	Subjective assessment of QoUL **in Area 36**	Subjective assessment of QoUL **in Area 49**
Age				
16-24	2.21 (9.1%)	2.50 (6.9%)	2.15 (17.9%)	2.00 (3.8%)
25-34	2.32 (33.2%)	2.63 (32.4%)	1.81 (34.7%)	2.87 (45.8%)
35-49	2.40 (42.7%)	2.83 (39.0%)	1.83 (38.9%)	2.81 (36.7%)
50-64	3.07 (13.0%)	3.17 (19.6%)	2.50 (5.7%)	3.40 (11.4%)
65+	2.60 (2.0%)	2.00 (2.1%)	2.50 (2.8%)	3.00 (2.3%)
Gender				
Female	2.35 (67.4%)	2.73 (58.9%)	1.93 (78.4%)	2.96 (42.6%)
Male	2.52 (30.4%)	2.79 (41.1%)	1.93 (20.2%)	2.70 (54.6%)
Relationship Status				
Divorced/Separated	2.22 (17.4%)	3.00 (12.9%)	1.54 (16.9%)	3.20 (9.8%)
Living with partner	2.66 (26.3%)	3.13 (22.4%)	1.94 (21.6%)	3.36 (21.5%)
Married	2.42 (37.1%)	2.58 (37.9%)	2.15 (47.0%)	2.81 (47.7%)
Prefer not to say	2.00 (3.6%)	2.50 (3.5%)	1.50 (2.6%)	2.00 (5.8%)
Single	2.29 (6.8%)	2.67 (9.7%)	1.33 (3.8%)	2.40 (8.0%)
Widowed	2.44 (8.9%)	2.80 (13.6%)	2.00 (8.2%)	2.60 (7.3%)
Religious Belief				
Christian	2.51 (68.2%)	2.68 (67.9%)	2.06 (65.6%)	2.97 (60.0%)
Muslim	2.20 (31.8%)	2.93 (32.1%)	1.69 (34.4%)	2.50 (40.0%)
Main Source of Income				
Employment	2.71 (56.9%)	2.79 (80.6%)	2.18 (30.4%)	2.97 (61.1%)
Entrepreneurship	2.32 (19.5%)	2.75 (12.5%)	2.12 (34.4%)	2.75 (7.8%)
Food crop sales	2.67 (1.2%)		2.67 (1.2%)	
Forestry Product	1.00 (0.9%)		1.00 (1.2%)	
Ganyu	1.26 (15.1%)		1.28 (22.8%)	1.28 (22.8%)
Pension	3.00 (0.7%)			3.00 (2.3%)
Petty trading	1.00 (0.9%)		1.00 (1.2%)	
Remittance	2.33 (4.2%)	2.50 (6.9%)	2.25 (5.6%)	2.00 (1.9%)

Table 3. Demographic experience using multi-variate analysis

5.3 QoUL and Occupation

Occupation and factors that relate to one's employment have an impact on the sense of well-being, both physically and psychologically (Riise, et al., 2001). This is not only economical, but the financial reward does also positively impact QoUL. Other factors that impact QoUL at work include the occupation conditions, and the amount of stress felt at work (Riise, et al., 2001; Weziak-Bialowolska and Mcneely, 2018) Good quality physical and ergonomic working conditions are lacking in many low-income countries, which can expose workers to health hazards (Weziak-Bialowolska and Mcneely, 2018). This limits their satisfaction with work and has negative implications for QoUL. Table 3 displays that resident who are in formal employment are considerably more satisfied with

their life (mean =2.71), than those working in forestry or petty trading (mean =1.0). Notably, the group who are most satisfied with their occupation are those who are retired (mean =3.0). This is in line with the literature, both on age and occupation, that states that those who are retired will not be out working in stressful situations and are likely to be older. The satisfaction with occupation appears relatively even across the neighbourhoods. However, it is noted that Area 36 is the only neighbourhood with some of the lower-satisfaction occupations. This supports the principle that occupation impacts how residents perceive their QoUL, thus personal comparisons and expectations are essential when conducting a QoUL study.

6. QoUL Domains in Lilongwe Neighbourhoods

The following section demonstrates the examination of the four domains of QoUL as elaborated in the conceptual model with a focus on four factors within the QoUL domains: the physical environment domain (building and house quality); the social environment domain (public meeting spaces); the economic domain (tenure and home ownership); and the well-being domain (urban safety).

6.1 The Physical Environment Domain

The physical domain of QoUL focuses on indicators which reflect the physical environment of neighbourhoods that effect residential QoUL. This includes factors such as building and house quality, infrastructure, transport and accessibility and urban density. Each of these indicators are assessed through both objective and subjective questions in the residential attitude survey, to determine how residents of different areas of the city perceive the quality of their neighbourhoods. Subjective reasoning questions are asked to not only understand what aspects of the neighbourhood are good or poor but also engage with interpretational dimensions to further understand why residents perceive them the way they do. This information can be utilised by policymakers and planners to resolve urban issues in the case study neighbourhoods.

The residential attitude survey exposed that 82% of residents in Area 36 believe their home is not a good quality building. When followed up to learn why they feel this way, 77% state that it is to do with the materials their home is made from. A Spearman's correlation was run to determine the statistical relationship between house quality and overall physical quality of the neighbourhood. This reveals that there is a strong positive monotonic correlation between these factors (r_s=.73, n=165, $p<0.01$). Thus, the quality of a residents' home has a significant impact on their satisfaction with the physical aspects of their neighbourhood. As such, this is an important indicator which directly influences residential satisfaction. Therefore, further analysis is conducted to determine if the size of the dwelling is important, or if satisfaction is primarily based on the materiality of the dwelling. Table 4 presents multi-factor analysis which illustrates the aggregate effects of the materiality and the size of the home.

The residential mean satisfaction scores have been calculated to analyse the variance. Table 4 includes the indicators in the left column. This is then compared with the satisfaction felt in each of the three case study neighbourhoods. The analysis is using the mean result for subjective assessment of overall satisfaction on a scale from 1- Definitely not satisfied, to 4- Definitely satisfied. This compares residents overall subjective assessment of their QoUL in Lilongwe dependent on their circumstances, such as type of home. This is not their satisfaction with that indicator, but their overall satisfaction with life, as aggregated by the group. The number in the brackets is the percentage of respondents who are in the classification.

Difference in the mean scores of demographic and socio-economic groups on the satisfaction with overall QoUL and the three neighbourhoods researched in Lilongwe.			
House Characteristics	**Mean score based on a 4-point Likert scale (% of respondents within classification)**		
	Subjective assessment of overall QoUL in **Area 18**	Subjective assessment of overall QoUL in **Area 36**	Subjective assessment of overall QoUL in **Area 49**
Main materials used for walls in home			
Traditional		1.37 (34.6%)	
Combination	2.43 (12.5%)	2.00 (33.8%)	2.00 (33.8%)
Modern	2.82 (87.5%)	2.52 (30.1%)	3.00 (66.2%)
Number of internal rooms in home			
1		1.00 (2.5%)	
2-3	2.79 (41.1%)	1.80 (74.7%)	2.82 (46.1%)
4-5	2.72 (46.4%)	2.42 (17.0%)	2.91 (39.9%)
6+	2.75 (12.5%)	2.75 (5.9%)	2.82 (14.1%)

Table 4. Perceived satisfaction with house quality

Area 36 appears to be the only neighbourhood in the sample that has traditional dwellings. Reviewing their subjective assessment of residents perceived overall satisfaction, compared with the materials their home is made from, it is clear that those who live in modern dwellings are considerably more satisfied than those who live in traditional or combination dwellings. Residents who reside in modern dwellings are the most satisfied across all three neighbourhoods, highlighted in green in Table 4. It is significant to note that all traditional dwellings are between 1-3 room size. In both 18 and 49 areas, the size of the home does not influence residential satisfaction, highlighted in yellow (Table 4). In fact, in Area 18 residents who reside in 2-3 room homes are more satisfied than those who reside in 6+ room houses, and in Area 49 residents in the 4-5 room homes are most satisfied. This conveys that residential satisfaction in Areas 18 and 49 are more strongly influenced by the materiality of the home than the size of the home.

6.2 The Social Environment Domain

The social domain of QoUL is the most difficult to conceptualise as urban societies are heterogenous spaces that are continuously influenced by both tangible and intangible social factors. This domain includes indicators such as place attachment, sense of community, personal relationships, public meeting spaces and local governance.

Figure 5 shows that social spaces in Areas 36 and 49 are not satisfying to their residents. Improving the quality of the public social spaces is essential because these are the areas that residents spend a large portion of their time in this context. Concomitantly, these spaces enhance the liveability of neighbourhoods and thus impact residential QoUL. From the results of the residential attitude survey shown in Figure 5, it is apparent that residents of Area 49 are dissatisfied with the space available to all demographics, while Area 36 is primarily concerned with the spaces for children. The neighbourhood profiles illustrated that Area 18 has excellent access to green and open space, thus it was anticipated that residents feel positively about the quality of their social spaces. Using a Spearman's correlation across the full residential attitude survey sample, it is corroborated that there is a statistical relationship between the ecological quality and the overall quality of the neighbourhood. This shows that there is a strong positive monotonic correlation between these two factors (r_s=.65, n=165, $p<0.01$), thus the ecological quality of a neighbourhood has a substantial impact on residents' overall satisfaction with their neighbourhood. As such, providing green and open space is a significant contributor to the residents' satisfaction with their neighbourhood.

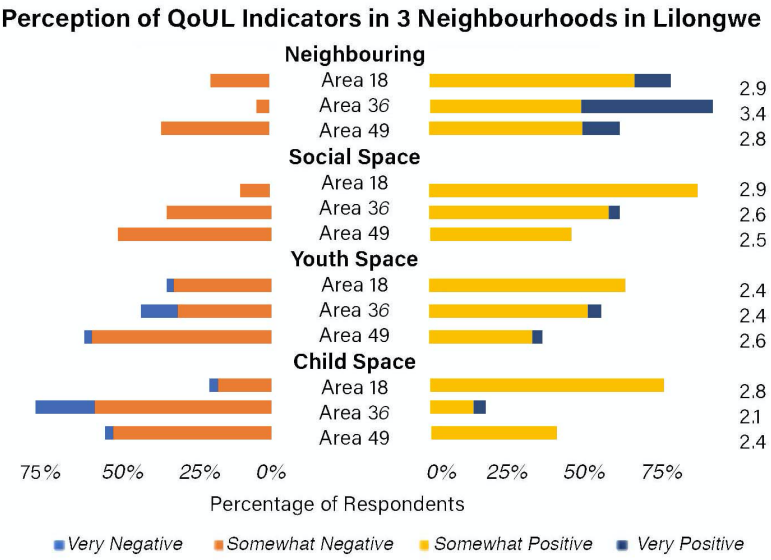

Figure 5. Social QoUL indicators

Due to the statistical importance of this indicator, it is significant to explore why residents feel negative regarding their social spaces in Area 49. Residents were asked why they believe that there are not suitable spaces in the neighbourhood to meet socially on a multiple-choice basis where they could include as many options as they agreed with. Of the negative sample in Area 49, 72% attribute this to the quality of the spaces, 61% state that they believe this is due to the accessibility of the spaces, and only 31% of the sample believe that it is due to the availability of social spaces. It is encouraging to note that 0% attribute this negativity to their gender. This points to improving the quality of the existing spaces as opposed to seeking to erect new urban open spaces, as the majority of residents are satisfied with the number of spaces that they have available.

A further indicator which was deemed unsatisfactory both in Area 36 and 49 is the provision of space for children. 51% of Malawians are under the age of 18 and thus spaces for youth and children affect a large portion of the population. It is meaningful to examine why residents feel negative regarding the spaces for children. 69% of the respondents in Area 36, and 88% of the respondents in Area 49, attribute their dissatisfaction with the number of spaces available for children. As such, the results suggest that it would be desirable to see the introduction of more spaces for children to play in these neighbourhoods. The literature within the discourse of urban design discusses design-oriented elements which can make areas more suitable for play. This includes factors such as reducing traffic flow to make streets more liveable and understanding where children play and respect this when planning spaces for children (Penn, 2005; Kleinschroth and Kowarik, 2020).). Hicks and Hicks (2005) asserts the need for including arrangements of seating and shelter to encourage parents and carers to stay where the children play to increase safety. Ensuring proximity of play sites to children's homes is favourable for ensuring residents use the neighbourhood play space. Being close to the home is advantageous as it allows proximity to refreshments and toilet facilities. Hicks and Hicks (2005) state that the importance of drawing on the natural environment cannot be overstated. Using natural areas as spaces for play is desirable and often form the best exploratory learning experiences for children.

6.3 The Economic Domain

Economic indicators play a fundamental role in a resident's QoUL. A person's financial situation affects where they live, their material possessions and their lifestyle. The residential attitude survey analyses six indicators of economic QoUL; namely, tenure, household income, education, work

status, expenditure, and poverty rates. This follows the same methodology as the previous two domains, where the percentage of satisfied and dissatisfied residents are analysed to prioritise issues that require immediate attention to improve the QoUL of residents.

Tenure is a significant indicator whose impact on QoUL should not be underestimated. 'Security of tenure' is the only 'slum' characteristic put forward by the UN which is not related to the physical urban environment (Pieterse and Parnell, 2014). An overwhelming number of urban dwellers lack legal security of tenure in the form of a deed or title to the property (Myers, 2011). Renters are identified as the most powerless and invisible informal settlement dwellers (Kita, 2017). A lack of secure tenure can cause anxiety and stress for urban residents, and therefore make it difficult for family members to establish a sense of belonging (Ansell and Blerk, 2005). Tenure is thus vital to a person's QoUL as it helps to improve place attachment and belonging and contributes to residents feeling positive and comfortable about where they live (Ansell and Blerk, 2005). It also directly impacts the willingness of residents to invest in their community (Bartlett, 1999).

Figure 6 illustrates residents' satisfaction with their tenure and their tenure type from 1-Definetly not satisfied, to 4- Definitely satisfied. This comparison demonstrates that residents who own their home are satisfied with their tenure 97% of the time, and residents that live with their family are positive 100% of the time. On the other hand, residents who rent their homes are only satisfied with their tenure 39.9% of the time. Residents who state that they live in a home that is free but not authorised are always negative about their tenure. This is significant as it conveys that having ownership over property increases residential satisfaction, thus contributes to improving QoUL. It further shows that having insecure tenure negatively affects residents' perception of their tenure; consequently, this negatively impacts their quality of life. Notably, the survey results demonstrate that residents in Areas 18 and 49 are predominantly satisfied with their tenure, while those in Area 36 are more negative regarding this indicator. This is due to a higher percentage of residents in Area 18 and Area 49 owning their homes.

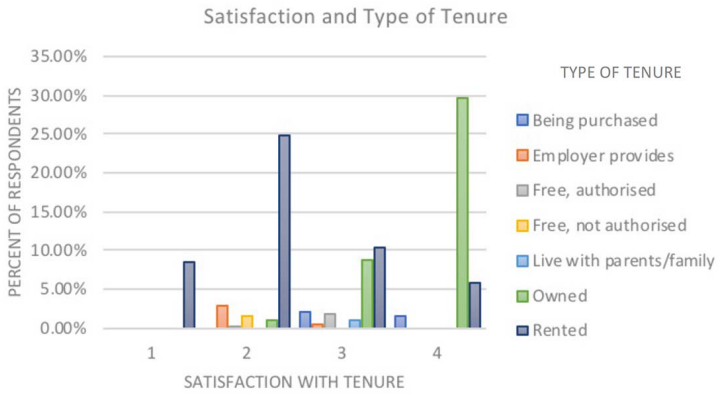

Figure 6. Satisfaction and type of tenure

6.4 The Well-Being Domain

The majority of existing QoUL studies discuss physical, social and economic environments of urban life, however, they do not consider well-being as a domain in its own right. This domain includes attributes such as health, safety, sanitation, and infrastructure. Provision of a healthy urban environment has been of increasing importance in recent months due to the health crisis of Covid-19 (Salama, 2020; Maturana et al, 2021). The urban environment and residential neighbourhoods have substantial impact of the health of their residents. In this respect, it is fundamental that policymakers and planners consider methods to make their urban settings healthy for their residents. Adopting the same approach utilised in examining the three preceding domains,

indicators of satisfaction and dissatisfaction were analysed across the subjective well-being questions.

An important indicator within the well-being domain is safety and security. Feeling safe and secure has social consequences as it has implications for emotional well-being and place attachment. By reviewing the neighbourhood profiles, it was anticipated that residents in Areas 18 and 49 would feel positively about the safety levels in their neighbourhoods. Safety is implied in these neighbourhoods through evidence such as beautifully landscaped gardens, which suggests that residents have a strong sense of attachment. The profiles show that Areas 18 and 49 are both in close proximity to the police station or police headquarters, which are also positive elements of urban safety.

The residential attitude survey reveals that 71% of the respondents from Area 36 believe that their neighbourhood is unsafe. When prompted for reasoning, 96% of them state that they feel there is a high number of crimes in the neighbourhood. 28% of this sample attribute the wrongdoing to a lack of lighting in the neighbourhood. By lacking safe and secure environments, the use of the public realm and thriving urban environments are threatened (Carmona, et al., 2003). Consequently, safe and secure urban environments are fundamental for a positive feeling of QoUL.

The urban layout can impact the feeling of safety in several ways. One is to ensure spaces are of good quality that residents want to visit, as this will increase the activity, which in turn reduces anti-social behaviour (Bartlett, 1999). Other urban elements include laying eyes on streets (Jacobs, 2011) as having neutral proprietors viewing the street makes it feel safer (community watch). This attracts people into the spaces. Providing mixed-use buildings also increases the vibrancy of a neighbourhood, as it gives people a reason to walk on the street and creates extra routes around the neighbourhoods (Jacobs, 2011). At a neighbourhood scale, providing ownership over spaces may improve residents' perception of safety (Newman, 1996). This makes it easier for residents to determine who should be in the spaces, thus making it harder for people to access settings near residents' homes if they should not be there. Together, these factors help to improve urban safety, which can assist in reducing the perception of crime in Area 36.

7. Life as a Whole:

The final section of the residential attitude survey is viewed as a verification mechanism. Residents were asked a series of validating questions, which seek to comprehend their satisfaction with each domain, and with life as a whole. There is discrepancy across the three case study neighbourhoods with regards to their satisfaction with their life (Figure 7). Area 49 has the highest mean overall QoUL score, averaging 3.0 out of 4.0, which represents an extremely satisfactory QoUL level. Area 18 is next with an average score of 2.8 out of 4.0, which portrays a substantially satisfactory QoUL level. Residents of Area 36, however, provided an unsatisfactory score of 1.9 out of 4.0 for their overall QoUL. This demonstrates the discrepancy between the lived-in condition of the various neighbourhoods in Lilongwe, which corroborates the need to investigate QoUL at a neighbourhood scale.

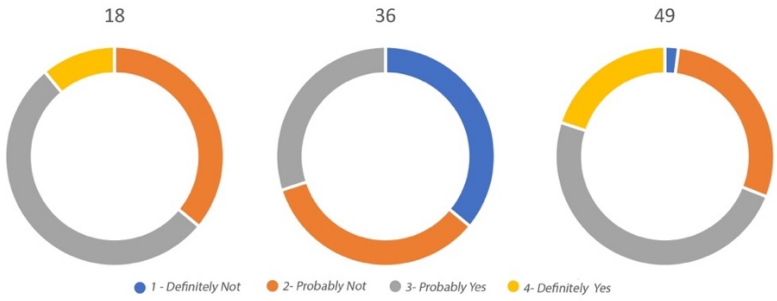

Figure 7. 'All things considered; I feel satisfied with my life?'

To determine the relationship that each of the overall QoUL domains have on resident's satisfaction with life, a Spearman's rank-order correlation was run on the results of the residential attitude survey. Table 5 presents the results of the Spearman's correlation, it's significance value which is 2-tailed (Sig.) and the sample size that completed the questions (N). This analysis is conducted across the full sample of the three neighbourhoods. The results are replicated on the table for ease of use.

Spearman's Correlation		I feel I have all the important things in life	I feel satisfied with my life	Overall Physical QoUL	Overall Social QoUL	Overall Economic QoUL	Overall Well-being QoUL
I feel I have all the important things in life	Spearman's Correlation	1	.89**	.75**	.72**	.73**	.72**
	Sig. (2-tailed)		0.00	0.00	0.00	0.00	0.00
	N	165	165	162	151	156	163
I feel satisfied with my life	Spearman's Correlation	.89**	1	.71**	.66**	.67**	.69**
	Sig. (2-tailed)	0.00		0.00	0.00	0.00	0.00
	N	165	165	162	151	156	163
Overall Physical QoUL	Spearman's Correlation	.76**	.71**	1	.88**	.90**	.79**
	Sig. (2-tailed)	0.00	0.00		0.00	0.00	0.00
	N	162	162	162	150	154	162
Overall Social QoUL	Spearman's Correlation	.72**	.66**	.88**	1	.91**	.82**
	Sig. (2-tailed)	0.00	0.00	0.00		0.00	0.00
	N	151	151	150		144	150
Overall Economic QoUL	Spearman's Correlation	.73**	.67**	.90	.91**	1	.85**
	Sig. (2-tailed)	0.00	0.00	0.00	0.00		0.00
	N	156	156	154	144		155
Overall Well-being QoUL	Spearman's Correlation	.72**	.69**	.79**	.82**	.85**	1
	Sig. (2-tailed)	0.00	0.00	0.00	0.00	0.00	
	N	163	163	161	150	155	163

Table 5. Correlation between domain satisfaction and overall satisfaction with QoUL.
***Correlation is significant at the 0.01 level (2-tailed)*

A Spearman's correlation of 0.6-0.79 is considered strong, and 0.8-1 is considered very strong. Table 5 confirms that every result in this table is over 0.6, thus there is either a strong, or very strong correlation between the four domains and the overall QoUL. Strong correlations have been coloured yellow, and very strong correlations have been coloured green for ease of reading. As well as having strong correlation with overall QoUL, Table 5 shows that each domain also has either a strong, or

very strong correlation with one another. This is significant as it confirms the spill over effects that each domain has on one another, and that the four domains of urban life reciprocal and dynamic. Consequently, this means that if a resident feels a disparity in one domain, it will impact the others in return. Thus, domains and indicators should not be treated as isolated issues. This confirms the important role that the well-being domain plays in QoUL, and thus should be used as one of the four pillars of urban life in future studies. Figure 8 illustrates some of the spill-over effects of the four domains of urban life. Figure 8 and Table 5 combined, recognise and validate the relationship between component parts of urban life, and how they work together to form QoUL. Hence, urban life is formed through the continual interaction between physical, social, economic and well-being dimensions of urban life in Lilongwe. Consequently, QoUL in Lilongwe cannot be studied without a full investigation into the four domains of urban life.

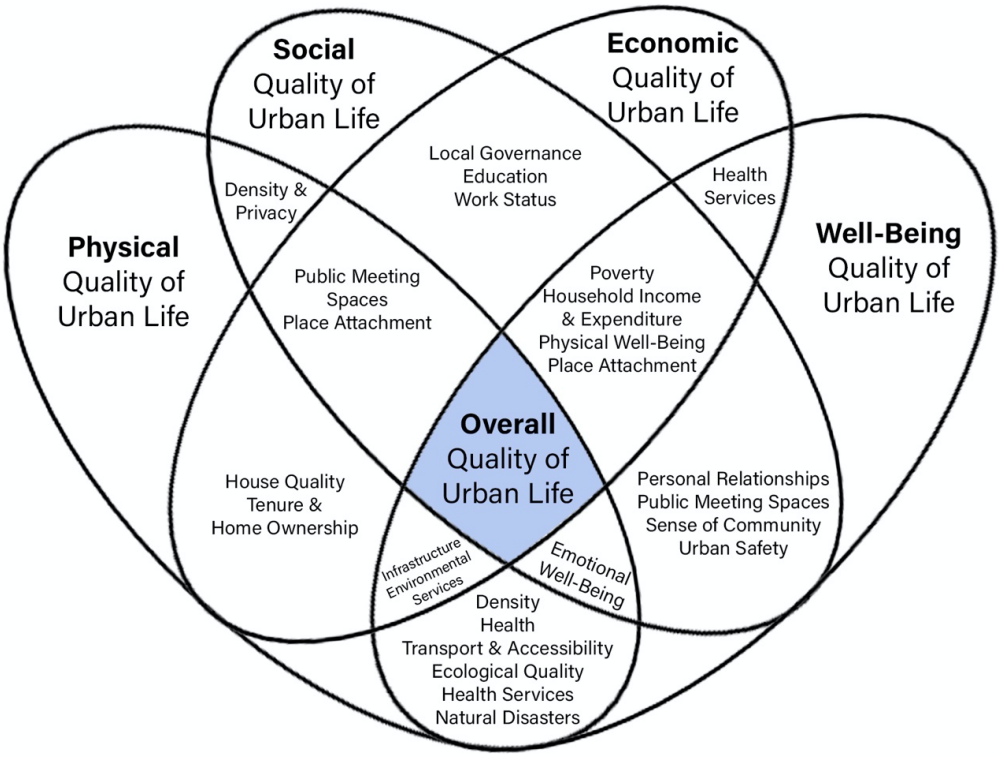

Figure 8. QoUL indicator and domain model following the study

8. Conclusion

The overall aim of this paper was to contribute to the discourse on contemporary urban life and urban qualities in Eastern-Southern African (ESA) cities. The research process involved an investigation of the QoUL of three neighbourhoods in Malawi's capital city, Lilongwe. Utilising a conceptual model tailored to address the specific conditions of the city, the study has tested the model, which was introduced by the authors in an earlier study, through a multi-layered methodology and framework. This has resulted in a refined model that captures the relationship between component parts of urban life, and how they work together to form QoUL. Establishing and implementing an attitude survey, the paper contributes to urban research, decision making, and practice from two angles: a) guiding researchers and practitioners through academic research and evidence-based neighbourhood design and b) to policy makers through the development of

research-informed urban policies and aiding in the resolution of urban issues in the case-study neighbourhoods and eventually to the city at large.

Demonstrating the importance of developing and validating models that are context-specific which guide the investigation of QoUL domains the model tested confirms its practicality, and that it gathers valuable broad range of knowledge on the QoUL of residents specific to their contextual experience. This is materialised by focusing the analysis on four factors within the domains: the physical environment domain (building and house quality); the social environment domain (public meeting spaces); the economic domain (tenure and home ownership); and the well-being domain (urban safety). Yet, the examination of these factors asserts the importance of a renewed focus on assessing the quality of urban life in residential neighbourhoods. Primarily, this refers to the discrepancy of QoUL in the three neighbourhoods and warrants that a consideration of how improvement actions and resources can be allocated, if they are targeted at resolving specific factors which impact QoUL in a particular setting. Accentuating the notion that aspects which require attention in one neighbourhood are possibly already met in other neighbourhoods, the study emphasises that city-wide approach is not always the most effective when examining QoUL of an urban environment or city.

In addressing building and house quality, which is part of the physical environment domain, the study reveals that the materiality of the home influences the lower scores for the dwellings, as 1-3 room houses in Area 36 are made from traditional materials and techniques. This uncovers the importance of construction materials used and that the materiality dramatically impacts the perceived satisfaction with the home environment. It is also apparent that the materiality of the home environment has a more significant impact on residential satisfaction than the size of the home. Hence, building good-quality smaller dwellings is an important consideration for future improvements of the existing neighbourhoods and a priority for designing future neighbourhoods. Encouraging residents would also be a priority through incentives such as long-term loans and accessing government funds to construct their new homes or extending the existing ones using more locality based permanent materials.

Contemporary urban environments are influenced by multiple factors which constantly manipulate the social dynamics of the neighbourhood. Focusing on public meeting spaces the study corroborates the existing body of knowledge where the absence of play spaces in Areas 36 and 49 is unveiled to have an impact on the quality of life within the neighbourhood. Improving the quality of the social spaces in the public realm is essential because these are the areas that residents spend a large portion of their time. Per se, these spaces enhance the liveability of neighbourhoods and thus impact residential QoUL. The need for good quality urban open spaces has been brought to the forefront of urban discourse during the current Covid-19 pandemic, as these are the spaces that support social processes and activities. Nonetheless, improvements need to be coupled with ensuring that spaces are socially inclusive and cater to people of all ages and interests.

The wealth of an individual is thought to provide a first approximation of their QoL. However, this approximation is narrow, and thus does not consider all the aspects which are essential to a person's QoUL. Tenure, as part of the economic domain, is a significant indicator whose impact on QoUL should not be underestimated. The discussion of the survey results conveys that those who rent their home feel much less stable in their tenancy than those who own their home. Poor tenure conditions have negative implications for emotional well-being and stress. If residents are evicted from their rented properties, they may have to relocate to a different neighbourhood, thus they lose many of their local social ties. Children may have to move school, and workers travel a considerable distance to their workplace. Due to the high percentage of dissatisfied residents in Area 36, the subjective reasoning they have provided reveals that a significant majority attributes their

dissatisfaction to the fact that they do not own their plot. 12% also stated that they believe the housing costs in the area are too high, and 7% commented that their landlord is intimidating. Each of these factors negatively contributes to the perception of tenure. Consequently, an approach for making tenure more secure for residents would be desirable and should be reviewed particularly with regards to Area 36 and neighbourhoods that are similar or of the same quality. Policymakers and planners in Lilongwe would need to address tenure and ownership in the city as one of the approaches for improving residential QoUL.

By and large, residents in the three neighbourhoods combined perceive their well-being domain highly, particularly with regards to their physical health, quality of water, and fuel. This implies that these indicators are resolved across diverse neighbourhoods of the city, thus are not priority issues for policymakers and planners to address in Lilongwe. Concomitantly, this allows the focus on resource allocation to go directly on factors which are negatively impacting residential QoUL, such as the perception of safety in Area 36. Notably, the finding go along the literature and argue that the urban layout can impact the feeling of safety in several ways. One is to ensure spaces are accessible and of sufficient quality to attract residents; this will increase the activity, which in turn reduces anti-social behaviour. Providing mixed-use buildings in certain strategic areas of the neighbourhood also increases the vibrancy of its spaces and enhances the publicness. At a neighbourhood scale, providing ownership over spaces may improve resident's perception of safety and makes it easier for residents to determine who should be in the spaces.

By using multi-variate analysis to compare the demographic characteristics by the satisfaction of residents, it can be concluded that there are differences in the felt needs of the various demographic and socio-economic groups in Lilongwe. The analysis confirms the fundamental role that personal experience plays in the discourse of QoUL. This is due to QoUL being a subjective phenomenon thus each resident will have their own experience and perception of any space. This, therefore, confirms the importance of utilising ethnographic methods to understand resident's perception of their QoUL as the residential attitude survey shows how the various socio-economic and demographic groups perceive their neighbourhoods.

The focus of this paper was on the outcomes of the QoUL attitude survey to convey significant findings relevant to building and house quality as a key quality of the physical environment domain; public meeting spaces as a key quality of the social environment domain; tenure and home ownership as a key factor within the economic domain; and urban safety as a key quality of the well-being domain. However, these findings would be enhanced by reporting on other components of the study that have adopted and implemented tools which engage directly with the spaces being used and with the users including systematic observations, behavioural mapping, and walking tour assessment procedures. Therefore, one limitation is that the assessment of the four indicators in the three neighbourhoods through the attitude survey does not engage with knowledge about movement patterns or the actual usability of the spaces and this does not communicate the full assessment undertaken in the overall study. The results of implementing such methods would establish complementary and expanded rationalisations of the findings conveyed in this paper.

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