Residential Segregated Communities and Neighbourhood Conditions in Kumasi, Ghana

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Abstract
Residential segregation defined as the extent to which individuals from different groups occupy and experience different social environments has emerged and progressively gaining patronage globally. Ghana has records of the emergence of residential segregated communities with little research and documentation on same. Accordingly, this study establishes the premise on which segregation of residential settlements has been informed in the city Kumasi, the Ashanti regional capital, and identifies its effects to inform decision-making for effective management of the city. Using mix method approach, the study collected data from the Kumasi Metropolitan Assembly and 108 sample households across nine suburbs in Kumasi. The study found that residential segregation is emerging in the metropolis. Residential segregated communities in Kumasi have relatively better amenities and services compared to non-segregated communities. Also, there is no legislative framework for managing residential segregation. The study therefore recommends the formulation of spatial policies and legislative framework in the form of housing diversification to sustainably manage residential segregation for the benefit of the Kumasi metropolis.

Keywords
Amenities and services, Residential segregation, segregated communities, neighbourhood conditions, housing.

Contents

1. Introduction

1.1 Background

The practice and literature on residential segregation have received extensive attention in development studies and planning literature since the seminal contribution of Chicago School (Bailey, 2012). The concept of segregation has evolved to be reinterpreted as the extent to which individuals from different groups occupy and experience different social environments (Reardon and O'Sullivan, 2004). Residential segregation is driven by the increasing spate of urbanization, more intense in Africa and fueled by migration (Panori et al., 2019; Speringer and Ramon, 2014). According to the United Nations Department of Economic and Social Affairs (UN-DESA) (2013) and United Nations Human Settlement Programme (UN-HABITAT) (2014), Africa is the fastest growing urbanized region with a projected proportion of 64.1% of its population living in cities by 2050. Currently in Ghana, as high as 56.7% of the population live in urban areas (Ghana Statistical Service [GSS], 2021). It is projected that more than six out of ten Ghanaians will live in cities by 2060 (UNDESA, 2013). The United Nations (UN) (2016) asserts that the rapid growth of cities which is as a result of rising populations and increasing migration - has led to a boom in mega-cities, especially in the developing world, and slums/informal neighbourhoods which are often migrant towns, are becoming a more significant feature of urban life. This is therefore expected to increase the trends and processes of residential segregation. Residential segregation exists in several forms. Poku-Boansi and Adarkwa (2016) and Yi and Lee (2014) argue that people choose their neighbourhood mostly in light of their capacity to manage the cost of housing, closeness to work, neighbourhood

amenities and safety. Others factors include ethnicity, family income and cultural belief (see Agyei-Mensah and Owusu, 2010; Asibey et al., 2021). It generally appears as racial segregation or ethnic (Katumba et al., 2019; Robinson, 2016), salary (Anderson et al., 2003), training, occupation and religion (Shuttleworth and Lloyd, 2001). The control approach that complimented the execution of residential segregation led to gender segregation (where women and children were not permitted into the city) and occupational segregation, where sections of the unemployed were limited (K'Akumu and Olima, 2007). These have broadly been categorized into socio-economic status, family status and ethnic status as well as physical features of the urban environment, individual and aggregate socio-economic features, and individual choice for neighbourhood composition (Petrescu-prahova, 2008). As indicated by Hanhörster (2001), segregation is associated with both negative and positive impacts and therefore necessary to recognise its sources to help improve its benefits and reduce its negative impacts. Understanding the causes of residential segregation in a given area is therefore particularly important. With much emphasis of segregation in the developed world, little research has been conducted on trends and processes of residential segregation in African cities (Agyei-Mensah and Owusu, 2012). As highlighted by Asiedu and Arku (2009), most of these studies have been carried out in gated communities in Accra where the quality of the architecture, aesthetic appeal and monetary status of these groups make Accra seem international. However, there are clear expressions of social stratification in the city which these studies do not show. This study therefore makes vital contribution to the segregation works through its focus on Ghana's second largest, Kumasi by creating an understanding of the mechanisms of residential segregation and establishing the premises on which residential segregation is informed in Kumasi. It also identifies the effects of segregation in Kumasi to inform decisions towards the efficient management of the city.

2. Materials and Method

2.1 Study Setting
Greater Kumasi Metropolitan area was selected for the study because: (i) its rapid urban population growth is due to factors such as migration; (ii) there is evidence of diverse cultural and ethnic backgrounds; (iii) of the presence of different ethnic and culturally-shaped urban settlements; (iv) there are urban planning challenges such as haphazard development, depletion of ecologically sensitive resources and congestion; (v) of the availability of background data on the city (see Asibey et al., 2021); (vi) it is Ghana's second populated urban area and the fastest growing city with a population of 1,730,249 (GSS, 2014). Despite its cosmopolitan nature, the main ethnic group is the Ashanti constituting about 50% of the to-

tal population. Approximately 20% of the city's total population belongs to migrant ethnic groups, including Ewe, Ga Adangbe, Fante, Mole-Dagbani, Grusi, Mande and other Northern tribes (GSS, 2014). The rapid population growth coupled with high land values and rents have resulted in the development of squatter settlements (Adarkwa, 2011; Asibey et al., 2021) throughout the city's nine sub-metropolitan areas, now district assemblies on their own. It is against this background that the study selected one community under each sub-metropolitan area (Figure 1) to have an insight into what pertains to residential segregation in all the sub-metropolitan areas.
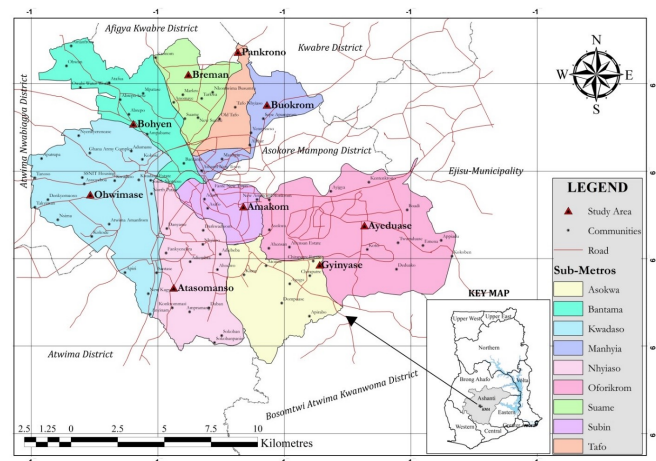

Figure 1. Map of Kumasi Showing the Study Areas

2.2 Research Approach
The study began with a comprehensive review of relevant documents that are related to segregation of residential development. These included research materials, journals, development/local plans and policies and other documents on segregation of residential development. Opined by Asibey et al. (2021), document reviews in such studies are important to understand patterns of residential segregation, characteristics and urban planning and development practices in the study area. It again provides important pathways to understand the dynamics of the study area with opportunities to identify key urban planning and management stakeholders to be involved in the study. Semi-structured interviews were used to collect primary data from relevant and available planning-related agencies in the Kumasi Metropolitan Assembly. These included a staff each from the Development Planning Unit, Works Department, Physical Planning Department, Ghana Statistical Service and the Building Inspectorate. Also, the administrative heads of each of the sub-metropolitan areas were engaged. The interviews were conducted in English and centered mainly on factors influencing residential segregation, facilities and infrastructure situation in segregated communities, role of stakeholders in the planning

and management of segregated areas and availability of security measures in segregated communities and other neighborhoods among others. The interviews averagely lasted 45 minutes. At the household level, a total of 98 homeowners were engaged in the nine study communities. This was calculated using the Slovin's mathematical formula:

$$n = \frac{N}{1 + N(\alpha)^2} \quad (1)$$

Where, 'n' is the sample size, 'N' is the sample frame and α is the margin of error, in this study 0.1. The required sample size 'p' for each study areas (Table 1) was determined by Probability Proportional to Size based on their sampling frames using the formula below (See Appiah et al., 2017; Asante et al., 2021):

$$p = \left(\frac{population\ of\ community}{Total\ population\ of\ all\ 6\ communities}\right) \times n \quad (2)$$

Table 1. Sample Size per Selected Community

Communities	Sub-Metropolitan Area	Sample size
Gyinyase	Asokwa	10
Buokrom	Manhyia	17
Amakom	Subin	10
Breman	Suame	23
Pankrono	Tafo	15
Ayeduase	Oforikrom	8
Atasemanso	Nhyiaso	8
Ohwimase	Kwadaso	8
Bohyen	Bantama	9
Total		**108**

The convenience sampling technique was used to select the study participants. Data was collected using a questionnaire that primarily focused on demographic and socio-economic characteristics of respondents, pattern of residential segregation, factors influencing residential segregation, consequences of the rise of segregated communities, facilities and infrastructure situation in segregated communities, role of stakeholders in the planning and management of segregated areas, availability of security measures in segregated communities and other neighborhoods and perception of outsiders about residents of segregated areas, etc. All interviews were conducted in Twi, the dominant language spoken in the study communities and lasted an hour on the average. The data collected were analyzed both qualitatively and quantitatively. Thematic content analysis (Creswell and Creswell, 2017) was used to analyze the qualitative data, mainly the institutional interviews. The transcripts were manually coded and indexed to identify recurrent and interconnected themes (Krippendorff, 2018). To emphasize issues raised by the study participants, narrative analysis was used to substantiate claims and interconnections between

themes (Bryman, 2012; Ahmed and Kuusaana, 2021). The quantitative data were analyzed using simple descriptive statistics and regression analysis of Statistical Package for Social Sciences (SPSS) version 23. To ensure virtual presentation of the results for easy comparison and comprehension, tables, bar graphs and pie charts were used where applicable.

3. Results and Discussions

3.1 Demographic and Socio-Economic Characteristics of Respondents

Due to the various roles gender play in the urban space management and in promoting sustainable city development (Hassan and Lee, 2015), the study collected data on the sex of respondents. Table 1 affirms the general cultural practice of more male head of households than female head of households as is the case in most Ghanaian cities (Asibey et al., 2021), in this study, 59% and 41% respectively.

Table 2. Demographic and Socio-Economic Characteristics of Respondents (n=108)

Characteristics of Respondents	Frequency	Percentage (%)
Sex of respondents		
Sex		
Male	64	59
Female	44	41
Total	**108**	**100**
Age of respondents		
Age group		
20-29 years	8	8
30-39 years	23	21
40-49 years	43	40
50-59 years	23	21
60+ years	11	10
Total	**108**	**100**
Educational attainment of respondents		
Educational attainment		
No formal education	8	7
Basic education (Primary and Junior High School)	28	26
Senior High School/Vocational/Technical	29	27
Tertiary	43	40
Total	**108**	**100**
Marital status of respondents		
Marital status		
Single	20	19
Married	62	57
Divorced	11	10
Widowed	15	14
Total		
Occupation of respondents		
Occupation		
Unemployed	1	1
Trading	50	46
Government Worker	30	28
Other	27	25
Total	**108**	**100**

Source: Field Data Collection, 2017

In terms of age, majority of respondents were in their active age group (69%) and as such motivated to pursue economic activities (only 1% of respondents were unemployed) and attain various level of education (only 7% of respondents had no formal education). This corroborated Uddin (2009) assertion that age is vital in determining the capacity to perform a job, and people in their active

age can better apply their eagerness, commitment, awareness and inspiration towards understanding and achieving an objective effectively. Active population is said to be relevant for sustainable (city) development to eradicate poverty, ensure healthy lives and well-being at all ages, promote gender equality and full and productive employment and decent work for all, reduce inequalities between and within countries and cities to achieve sustainable city development and to fulfil the goal of the 2030 Agenda to leave no one behind (Asibey et al., 2021; UN, 2017).

Further analysis revealed that an increase in the number of years in education influences where one decides to reside and hence an influential factor of residential segregation. Friedman and Rosenbaum (2001) concluded, people with a higher education choose to locate themselves in places that reflect their position in society. Poor people with little education or choice are forced to live in locations that are less than ideal. It was also found that individuals engaging in fulfilling employment had a background of higher education and income which influence the choice of living in segregated areas in the Kumasi such as Atasemanso and Ohwimase.

3.2 Factors Influencing Residential Segregation in Kumasi

The analysis of the data revealed that residential segregation in Kumasi is as a result of social class differences dependent on education and income levels. This finding is related to the spatial assimilation model that states that segregation is mainly due to social class contrasts among groups. Occupational, educational and income structures of individuals and the observed isolation patterns are a display of dissimilarities which enable their ability to choose places to reside. People with similar social class are therefore less expected to be residentially isolated even though they might belong to different ethnic groups (Balakrishnan et al., 2001). The regression analysis in Table 3 was done to help establish the extent and pattern of spatial segregation in Kumasi. The estimated multiple regression equation does not perform well (R2 = 0.062) in relating to the selected socio-economic variables (education, occupation, and income) with segregation in the Kumasi metropolis.

Table 3. Multiple Regression Results on Residential Segregation (n=108)

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
Income	-0.024	0.031	-0.079	-0.774	0.441
Level of Education	-0.064	0.028	-0.233	-2.307	0.023
Occupation	0.033	0.021	0.159	1.523	0.131
R2 = 0.062					

Nearly 94% of the level of variance in residential segregation levels is not explained by the variables acting together. Failure to account for residential segregation is related to the fact that residents in Kumasi are not strongly segregated from one another. Since there were few differences in residential segregation with most values near zero, the regression equation does not have a significant variation in the dependent variables to associate with variations in the independent values. Educational level is the most influential variable explaining residential segregation in Kumasi, with a beta weight of (0.233). The second most influential variable is occupation of respondents (0.159), which is directly related to residential segregation in Kumasi. The last variable that is associated with segregation is income of the person (0.79). Further analysis confirms the observation made during the field work that respondents living in segregated areas like Atasemanso and Ohwimase had higher educational levels with high paying jobs. This has resulted in higher income people living in such areas. This is because the prices of land in such areas are high which creates barriers for individuals with lower incomes to afford to live there. It was found that communities such as Ohwimase place implicit and explicit confinements on capacity to purchase a plot of land and managers of sale of lands reserve the right to acknowledge or decline a new member. Again, this attraction has resulted in improving the neighbourhoods with better amenities and security and further pushing away low-income earners (see Svampa, 2004). Further descriptive analysis through a three-point Likert scale as detailed in Table 4 was used to establish agreement levels of factors influencing segregation of residential development in Kumasi.

Table 4 establishes significant proportion of respondents expressing strong agreement in relation to the causes of segregation of residential development in Kumasi. As high as 83% of respondents agreed that desire for the search for mutual responsibility and cooperative spirit within communities leads to residential segregation. This reveals that some high-class individuals within the Kumasi metropolis prefer to reside in segregated areas because of their search for a particular community associated with measures that protect children, the environment and the quality of services (see Matthew, 2009). With the likelihood of segregated communities usually offering a better lifestyle that is different from the urban lifestyle regardless of being located in urban areas (Thuillier, 2005), 82% of respondents agreed that availability of better living conditions (search for better lifestyle) leads to residential segregation in high class neighborhoods. The segregated communities as is typical of Atasemanso and Ohwimase are preserve for the rich. As high as 90% of respondents were the homeowners. The buildings found in these areas comprised of detached, semi-detached and flats.

With respect to security, it was found that houses in these segregated areas had electronic security system, barbed wire, walls with security posts and guards to reg-

Table 4. Agreement Levels of Causes of Residential Segregation (n=108)

Statements (Causes)	Level of Agreements (%)		
	Agree	Uncertain	Disagree
Fear of crime	78	2	20
Search for a better lifestyle	82	5	13
Desire for a sense of community	83	4	13
Search for social homogeneity	58	19	23
Aspirations for higher social class and social distinction within groups	55	15	30

Source: Field Data Collection, 2017

ulate the movement of people in and out of the houses. It was also found that there are periodic police patrols in the areas to check and prevent crimes. Again, there is the presence of registered private security companies to support in preventing and handling crimes. Common in these areas were playgrounds, health facilities (Forrester, 2021) and shops. Due to the general unreliable power supply in Ghana, most residents had stand-by generator set. In addition to these areas being served and connected with water supply by the Ghana Water Company Limited, most residents have mechanised boreholes in their homes to ensure constant water supply. Also, residents in such areas have access to private door-to-door waste disposal services at a cost. Refuse containers are also were positioned at vantage points for depositing waste and collection. However, engagements with residents of some segregated neighbors confirmed the assertion by Cabrales and Zamora (2001) that the achievement of a truly better life quality does not always happen as some of the segregated areas do not always possess better lifestyle and are located in dense urban areas. There was more than 50% agreement to all other factors (Fear of crime, search for social homogeneity, aspirations for higher social class and social distinction within groups) causing residential segregation in the metropolis.

3.3 Effects of the Rise of Segregated Communities

Based on extensive literature, the study identified stimulation of social tensions between the inside and outside, elaboration of 'otherness' as dangerous, fragmentation of urban space, restriction and re-allocation of previous public space, radical modification in the use of land for real estate in order to make profitable urban development, and encouragement of urban social segregation as some key effects of residential segregation (see for example Seitles, 2018). The study therefore sought to establish how the respondents agree or disagree to these consequences through a three-point Likert scale as detailed in Table 5.

The analysis revealed a significant agreement in relation to rise of residential segregation leading to widespread negative consequences in the metropolis. Nearly half (45.4%) of the respondents agreed with the assertion that rise in residential segregation is resulting in stimulation of social tensions between residents living in high-class neighbourhoods and those living outside such neighbourhoods. Some residents claimed some residents living in segregated neighbourhoods see those of them living outside of them as poor. This they concluded is always leading to apprehension and tension among them though no conflict has been recorded as yet. Roitman (2008) attributed such social tension to privatisation of space and class differences as was the case in the study communities. This was also captured by Pile et al. (1999) that the visible exclusiveness of low-class neighbourhoods usually increases dislike against them, and against the general population within them.

This is closely to the finding where 41% of respondents agreed with the claim that people living in segregated areas perceive outsiders as dangerous and suspect them for crimes that occur in such neighbourhoods. In line with Matthew (2009), the 'outsiders expressed frustrations that the 'insiders' often underestimate and think of them as potentially dangerous. The rise of urban social segregation is as a result of the construction of physical barriers that prevent or limit the interaction between people living in high and low-class neighbourhoods. This usually constrains social contact and reduce social contact and debilitate the bonds that form social contract (Blakely and Snyder, 1997). Further engagements to found out the perception of 'outsiders' on the 'insiders' are detailed in Table 6.

Furthermore, it was established from respondents that the rise in residential segregation is encouraging urban social segregation, with 90% of respondents endorsing it. The high monetary value of land in some segregated neighbourhoods in the metropolis such as Ohwimase, Atasemanso can only be afforded by wealthy people which usually results in exclusion and inequality. This was endorsed by as high as 90% of respondents who confirmed that the high cost of land is leading to the fragmentation of urban space. As also found by Asibey et al. (2021), the high cost of land and rent in the segregated neighbourhoods is pushing those who cannot afford to settle at the peripheries of the segregated communities. Residents in such periphery neighbourhoods revealed they prefer to stay in such areas to at least enjoy the 'fake prestige' of

Table 5. Agreement Levels of the Consequences of Residential Segregation (n=108)

Statements (Effects)	Level of Agreements (%)		
	Agree	Uncertain	Disagree
Stimulation of social tensions between the inside and outside	45	39	16
Elaboration of 'otherness' as dangerous	41	35	24
Fragmentation of urban space	90	7	3
Restriction and re-allocation of previous public space	68	30	2
Radical modification in the use of land for real estate in order to make profitable urban development	40	51	9
Encouragement of urban social segregation	90	6	4

Source: Field Data Collection, 2017

Table 6. Perception of Outsiders on Segregated Areas (n=108)

Characteristics of Respondents	Frequency	Percentage (%)
Good place to nurture children and high security	12	11
High cost of land	6	6
Gives comfort and high security	17	16
Neat environment and everyone is confined	4	4
Privacy	5	4
Luxurious lifestyle and peaceful place to live	46	42
No response	18	17

Source: Field Data Collection, 2017

saying they leave around such segregated neighbourhoods.

3.4 Role Stakeholders in the Planning and Management of Segregated Areas

The institutional interviews revealed that the emergence of high-class people with high incomes residing in areas such as Atasemanso and Ohwimase has led to residential segregation of these communities. The interviews revealed that the segregation was not planned by the city authorities. Currently, there is no policy regulating and guiding residential segregation. However, the city authorities such as the physical planners, works engineers and building inspectors were found to perform their regulatory functions of enforcing development controls, though not without challenges, mostly, non-compliance with development control protocols. It was also found that the Physical Planning Department does not have a database of residential segregated areas within the Kumasi Metropolis. The Officer was however quick to mention that Atasemanso and Ohwimase are increasing becoming segregated leading to high cost of lands which are affordable by high-income earners and pushing low-income earners away.

4. Conclusion

The study found that residential segregation is emerging in the Kumasi metropolis. People prefer to live in segregated areas for safety and security reasons. Again, people's taste to live in suburbs with better living conditions is typically driving residential segregation in high-class neighbourhoods in Kumasi, primarily driven by high prices of land. High-income earners prefer to live in segregated areas because of their search for the community with measures that protect children and prevent crime and strangers and at the same time control the surroundings and quality of service. It was found that residents in segregated neighbourhoods usually perceived outsiders as potentially dangerous and harmful and suspect them for crimes that happen in segregated areas (see for example Light and Thomas, 2019). This is generally creating uneasiness among the 'insiders' and the 'outsiders', and limiting social contact and aggravating the inside-outsider divide. This is compounded by the lack of legislative frameworks to guide residential segregation and its consequences which could in the long term threaten

management and sustainability of residential segregation.

Due to the multi-dimensional and dynamic nature of residential segregation, it remains significant and needs to be understood and examined in terms of everyday activities, social networks and mobility within the context of broader social and political-economic processes. People do not only experience segregation in their residential neighbourhoods but also in other spaces as their daily lives unfold, including their workplaces and sites for social and recreational activities. Attention to residential segregation is therefore as relevant as ever because of the emergence and diffusion of urban inequalities (Wissink et al., 2016; Kwan, 2013). As residential segregation is emerging in the Kumasi metropolis with its consequences, this paper calls for the housing diversification policies that will ensure more social cohesion, bridging ties between groups, social mobility options for those with a weak socio-economic position, and a better social integration of minorities (see Bolt, 2009). It is therefore important for the city authorities to plan and manage residential segregation. This importance is well captured by Clark (2008, p. 533), "At the very least, we must be cognizant of the strong forces built into choice and selection, processes that daily make and remake our urban fabric. These forces are often more powerful than our limited ability to intervene."

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