

MSc Programme in Urban Management and Development

Rotterdam, the Netherlands

September 2020

Thesis title:

Understanding community willingness to invest in land-use through their property rights and obligations

Name: Fahmida Islam

Supervisor: Ore Fika

Specialisation: Urban Land Governance

Country: Bangladesh

Report number: 1350

UMD 16

Summary

Kumasi, the garden city of Ghana is expanding into the peri-urban areas due to the pressure of urbanization that is ongoing all around the world. The land management of Ghana operates under dual land management, customary and state. In the peri-urban areas, the powerful land administration of the customary authorities and less active state governance is contributing towards unplanned rapid development resulting in the degradation and loss of green areas. In this process community is the most disregarding stakeholder but the most suffered one of the consequences of these unplanned development. Retrospective communal initiatives are common practise in the context of peri-urban Ghana to solve these consequences of unplanned growth. However, there is an existing ambiguity of individual ownership under the complex customary tenure and the objective of this study is to examine, compare and explain the relationship between the perceived and legal property rights and obligations of the community in customary tenure, and based on that, to identify and explain their willingness to invest in their identified balanced peri-urban land development.

The findings highlight how community status (being a settler of indigene) impact the perceived rights and obligations of the community. This study concludes that settlers identifies the need for more green for a balanced land use, while indigenous people prefer built area development and their investment decisions are influenced by their preference. This study recommends to address the perceived property rights and duties of both community and customary authority for land use policy formulation.

Keywords

Perceived property rights and obligations, community investment, customary tenure, balanced land use

Acknowledgements

My gratitude to my supervisor Ore Fika for her positivity and guidance throughout this thesis journey. I would also like to thank my second reader Els Keunen for her valuable insights and comments.

Cheers and thanks to my friends who became an inseparable part of this 'Life in the Netherlands'. To my parents and partner for being the star of my life.

Special thanks to the PBL team, IHS co-ordination team, and the PBL team in Ghana for their continuous support during this project and data collection phase.

And, finally to IHS and ULG for creating this wonderful international platform and bringing us all together!

Abbreviations

BIRD	Buearurea of Integrated Rural Development
DV	Dependent Variable
IV	Independent Variable
IHS	Institute for Housing and Urban Development Studies
KNUST	Kwame Nkrumah University of Science and Technology
PBL	Netherlands Environmental Assessment Agency
R/A	Research Assistant
ULG	Urban Land Governance

Table of Contents

.....	i
Summary	ii
Keywords	ii
Acknowledgements	iii
Abbreviations	iv
List of Charts	vi
Chapter 1: Introduction	1
1.1 Problem Statement.....	1
1.2 Relevance of the research topic	2
1.3 Research objectives	3
1.4 Main research question and research sub-questions	3
Chapter 2: Literature review/theory	5
2.1 Dynamics of Peri-urban land development	5
2.2 Customary Tenure	5
2.2.1 Land Management in Customary Tenure.....	6
2.2.2 Community in Customary Tenure.....	6
2.2.3 Ownership, rights and obligations in Customary Tenure	6
2.2.4 Ambiguity of property rights under customary land tenure:	7
2.2.5 Infrastructure development in peri-urban customary land:	8
2.3 Property rights & obligations and Perceived Property rights and obligations:	8
2.3.1 Perceived Property rights and obligations:.....	9
2.4 Willingness to invest	10
2.4.1 Tragedy of the common	10
2.4.2 Urban Commons	10
2.4.3 Collective management of the urban commons	10
2.4.4 communal investment interest in urban commons management	11
2.4.5 communal investment in natural resource management.....	11
2.4.6 Impact of Commodification of the land on common resource management:	12
2.5 Sustainable balance of land use:	12
2.5.1 perception and knowledge on the sustainable balance of land use:	13
2.5.2 Property right and sustainable land-use management.....	13
2.6 Conceptual framework	14
Conceptual Framework	14
Chapter 3: Research design, methods and limitations	15
3.1 Description of the research design and methods	15
3.1.1 Research Strategy:.....	15
3.1.2 Data Collection & Sampling:.....	15
3.2 Operationalisation: variables, indicators	18
3.3 Data Analysis, Validity and reliability:	22
3.4 Challenges and limitations	23
Chapter 4: Presentation of data and analysis	24
4.1 Characteristics of the respondents.....	24
Chapter 5: Conclusions	68
Bibliography	71
Annex 1: Questionnaire	75

Annex 2: Interview Guide for the Customary Authorities	90
Annex 3: Interview Guide for the Stool Land Officers & Academics	95
Annex 4: Independent Variables analysis.....	97
Annex 5: IHS copyright form	100

List of Charts

Chart 1: categories of respondents	24
Chart 2:.....	24
Chart 3: Ownership Status - All respondents.....	25
Chart 4: Ownership Status - Location wise.....	25
Chart 5.....	26
Chart 6: Community Status - Location wise_ redo this chart.....	26
Chart 7: Community Status - All respondents	26
Chart 8.....	27
Chart 9: Years of Residency - All respondents.....	27
Chart 10: Years of Residency - Location wise redo	27
Chart 12.....	28
Chart 11.....	28
Chart 13.....	28
Chart 14.....	29
Chart 15.....	31
Chart 16.....	31
Chart 17.....	32
Chart 18.....	32
Chart 19.....	32
Chart 20.....	33
Chart 21: redo.....	33
Chart 22: redo.....	34
Chart 23.....	35
Chart 24.....	36
Chart 25.....	36
Chart 26: Payment to the chiefs.....	36
Chart 27.....	36
Chart 28.....	37
Chart 29.....	38
Chart 30.....	38
Chart 31.....	38
Chart 32.....	38
Chart 33.....	39

Chart 34.....	40
Chart 35.....	40
Chart 36.....	41
Chart 37.....	41
Chart 38: Knowledge regulation designated to land use	42
Chart 39.....	42
Chart 40: Knowledge regulation designated to new development control.....	43
Chart 41.....	43
Chart 42: Following regulations- land use & development control.....	44
Chart 43.....	44
Chart 44.....	44
Chart 45.....	46
Chart 46.....	46
Chart 47.....	46
Chart 48.....	46
Chart 49.....	47
Chart 50.....	47
Chart 51.....	48
Chart 52.....	49
Chart 53.....	50
Chart 54.....	51
Chart 55: investment interest type for the new developments	52
Chart 56.....	55
Chart 57.....	55
Chart 58.....	55
Chart 59.....	56
Chart 60.....	56
Chart 61.....	57
Chart 62.....	57
Chart 63.....	58
Chart 64.....	59
Chart 65.....	62
Chart 66.....	63
Chart 67.....	65
Chart 68.....	66
Chart 69.....	66

Chapter 1: Introduction

Cities all over the world are continuously growing and expanding. Ghana has faced rapid urbanisation for the past few decades. Kumasi, the garden city of Ghana, has become the fastest-growing city. It is also the capital of the Ashanti people, which is the largest tribe in Ghana. According to (Justice K. and Kevin B., 2010), which has been discussed in multiple research as well, historically Kumasi has been the centre of attraction for the migrants due to its economic condition and administrative position. The city has been continuously expanding by incorporating multiple villages into the metropolitan area of the greater Kumasi, and in a brief period, has gone through extensive land-use and socio-economic transformation (Justice K. and Kevin B., 2010). Like most cities, the peri-urban areas of Kumasi face unplanned land development due to this rapid growth. The green areas (vacant green fields, agricultural lands) are abruptly turning into housing or industries to accommodate the growing needs, without following the land-use zoning, planning or permission from the authorities. These abrupt changes are creating an imbalance between the green areas and built environment, leading towards the degradation of green, resulting in unsustainable land development. To make things more complicated, the land management of Ghana operates under the dual tenure system, with the dominance of customary tenure alongside the administrative tenure system. According to the customary tenure, the chief owns and manage the land and act as the trusty of the community. The access to land for the community members are ensured through their male lineage. Furthermore, as migration is quite common in the commercial centres, the ‘strangers’/ ‘settlers’ (migrants) access these lands through the acknowledgement of the community holder (the chiefs) and become part of the community (USAID, 2013). With the growing demand for peri-urban land, the conflicts of interest over the land management among the chiefs, municipal authority and the community living in these lands are also increasing. Settlers are trying to get access to the lands, and the local and indigenous people are losing or giving up their access to traditional livelihood due to the conversion of agricultural lands. “Although the new lessees are benefiting from the land conversions, they are also affected by the lack of investment in community facilities, since the areas in which they are building their houses are seldom serviced with electricity, roads, and sewers.” (Ubink, 2008, p.31).

Amidst all the conflicts, the inhabitants are managing their property and investing in land management on their own. At the same time, the municipality refuses to provide services and infrastructures in the unauthorised non-formal developments in these converted lands. This raises questions regarding the rights and obligations of the people living there (for both the indigenous and settlers), and how their investment decisions are contributing to the overall land-use dynamics and land-use balance in the peri-urban areas of the greater Kumasi.

1.1 Problem Statement

Under the customary tenure, the community members or families have usufructuary rights while the chiefs manage or control the lands and are responsible for dividing, ‘selling’ or leasing the lands and converting the land uses (Ubink, Janine Marisca, 2008b). This practice makes the land management dependable on the type of governance the chief practices (Akrofi and Whittal, 2011b). It creates an ambiguity of ownership, rights and obligation of the community.

Regarding the rapid land-use changes in the peri-urban areas of Africa, three things are very important to look at. The first point is the inactive role of the government. Govt intervention is

more limited in the peri-urban areas compared to the cities. So in the case peri-urban Kumasi, Ghana, the authorities are more powerful and has more control over the new development process. The second point is, in most cases, the chiefs are in charge of the rapid subdivision of larger land parcels and land-use conversions, and they don't do that with the conformity of the regional land use plans. As a result, these new developments are done with no land preserved for infrastructures and services. However, according to the research of (Akrofi and Whittal, 2011a) ., under the customary tenure, if the land use is converted from agricultural to urban use, the resulting land sub-parcels should be divided among the chiefs and the community. And, there should be a communal fund for infrastructure development, that will collectively benefit the new landowner and the community. Which in practice is rarely happening. With the Institutional vacuum in the peri-urban areas, powerful customary authorities deny providing for new infrastructures and services as these are the responsibilities of the state. And thirdly, all these situations lead to the requirement of community involvement in communal infrastructure development. Case studies indicate that these infrastructure developments are done in a partnership approach between local government, customary authorities and local community where the community act as the initiator, as they are the most interested stakeholder and also the one who requires these services the most (Akrofi and Whittal, 2011a; Gaisie et al., 2018).

These unplanned growth and conversions of vacant green and agricultural lands are impacting the overall land development and land use balance. Adequate and accessible communal infrastructure is conceptualised and viewed as a tool for sustainable growth. According to the research of Akrofi and Whittal (2011a), infrastructure development can, directly and indirectly, reduce poverty and enhance living quality. Sustainable land development includes the provision of decent housing, decent infrastructure, preservation and easy access to livelihood. The question is whether the people living in these settlements are willing to invest in achieving this on their own, as these services are the responsibility of the government.

This research aims to understand the tenure dynamics, lack of clarity of the rights and obligations of the community, and how those influence the investment decisions in the land use management of the people living in these customary lands of the peri-urban Kumasi.

1.2 Relevance of the research topic

This research is about one of the drivers of land-use change in the peri-urban region, which is the investment decisions of the local community. This research feeds the academic world and the policymakers on how the relationship between property rights and obligations (the state of Ghana acknowledges customary property rights) reshapes what people are willing to do, and how that is important. Unless the community is willing to participate, it will never be possible to ensure balanced development by the successful implementation of the land-use plan. If people are aware of the consequences and aware of their own goal, implementation of the development control mechanism and land use plan becomes conceivable for the authorities. This research will help the policymakers to design inclusive, relevant policies on account of the events happening on the ground, and it helps to improve the traditional authorities engagement in the land-use policies. The study will also help to foster dialogue between the two authorities (state and customary), enable better communication among stakeholders, empower and guide the community into the development process.

This research is also aligned with the research project of the Netherlands Environmental Assessment Agency (PBL) in Ghana. In the case of Kumasi, the interest of PBL is to find the drivers of land-use change and the findings of this research will contribute to understanding

the relationship between the property rights and obligation to land-use change, thereby determining if it is a driver of land-use change.

1.3 Research objectives

To examine, compare and explain the relationship between the perceived and legal property rights and obligations of the indigenous and local community, and based on that, to identify and explain their willingness to invest in sustainable peri-urban land development.

1.4 Main research question and research sub-questions

In the context of peri-urban Kumasi, to what extent does the perceived property rights and obligation of the community affect their willingness to invest in establishing a sustainable balance of the built environment and green open space?

Sub-questions:

1. What are the legal and perceived property rights of the community?

It's essential to understand the legal property right that the community have and also the perceived right in order to answer the main question because it can be a mismatch between what they believe they have and what they actually have.

2. What are the legal and perceived obligations based on the legal and perceived property rights?

For every person who has property rights, there is an obligation. It is also important to understand what is their perceived obligation to their legal obligation. That helps to answer specifically how it affects their investment decision.

3. What is the perception of the community about the sustainable balance between green open space and built environment?

It is important to understand the perception of the local community about their understanding of the sustainable balance of the green open space and the built environment. Often it is discovered that when the local people think of the green landscape, they may actually prefer development. It is about the balance preferred by the community.

4. In what ways are they interested/willing to invest in achieving their identified sustainable balance between green open space and built environment?

After identifying the community perception about sustainable balance, it is essential to recognise the type of investment they are willing to invest in achieving that balance or, whether they are willing to invest.

Chapter 2: Literature review/theory

This chapter discusses the theories and concepts used for the conceptualisation of the study. The primary concepts are customary tenure, property rights and obligation, willingness to invest and sustainable balance of land-use. All of them are directly impacted by the dynamics of Peri-urban land development. The discussion starts with the peri-urban land developments and the subsequent sections will elaborate the other concepts.

2.1 Dynamics of Peri-urban land development

‘Peri-urban’ has been defined as the interface of the urban and rural periphery by multiple authors ((Akrofi and Whittal, 2011a; Woltjer, 2014) where both agricultural and urban ecosystem co-exists (Akrofi and Whittal, 2011a). From the research of Woltjer (2014), three generic attributes of the peri-urban are identified as spatial, functional and drivers of change. The spatial attributes are characterised by urban expansion of the cities, and it is more of a transition (agricultural lands to urban lands) rather than ‘in-between space’.

The functional attributes of the peri-urban, which has been mentioned as ‘peri-urban life’ by Woltjer (2014) is defined through the uses, activities and innovation. The first aspect is the economic change that takes place due to the transformation of activities from agricultural to manufacturing and land conversions. The second aspect is the social functional disintegration due to the rising conflicts and inequalities, unplanned development, agricultural decline, dispersed pattern of occupation and overall environmental degradation. Another prominent aspect that is mentioned in the international literature is spatial innovation like environmentally friendly land uses (eco-industries, urban agriculture).

The third attribute is the ‘peri-urban change’ which explains the drivers and is primarily influenced by the global capital market (Woltjer, 2014). Global capitalisation through foreign direct investment triggers large scale peri-urbanisation in developing countries. And the less strict institutional replies for the peri-urban regions compared to the city centre encourage the multitude land uses from manufacturing to tourism (Akrofi and Whittal, 2011a). The attractiveness of cheap peri-urban agricultural lands and the growing demand for residential land-use also act as drivers for the constant land-use change (Woltjer, 2014).

As indicated in the theory map, the link between peri-urban development and customary tenure will be discussed in the next segment.

2.2 Customary Tenure

In the African context, the “peri-urban life” becomes more complicated due to the complex and dual land management (customary authority and state). The communal land management directly impacts all three functional attributes of the peri-urban life under the customary tenure. The land-use conversion decisions are made by authorities, and people with less bargaining power lose access to the land. It changes the land use dynamic as well as the social functional disintegration and economic condition.

2.2.1 Land Management in Customary Tenure

From the research of Ubink and Quan (2008), customary tenure is considered as a means to achieve equitable land management from the international perspective. Although, there is a controversy around it, and authors like Alden Wily and Hammond specifies that customary land management might give the Chiefs landlord like position and put the minority people in a more vulnerable condition. Land was abundant and had no commercial values prior to the colonisation and formation of modern African states, and customary tenure was an efficient system for delivering secure land tenure to the community. Though with the urbanisation and commercialisation of land, the dynamics of customary tenure has changed, and the efficiency of it has been impacted negatively (Akrofi and Whittal, 2011a).

According to Payne (2002), the land is regarded sacred in the customary tenure and man's part is to play the role of steward. The leader allocates, use and transfer the land among the community through a different form of arrangements and agreements. In most African countries, land administration of customary land is bestowed in the community while the chiefs perform as their custodians and individuals enjoy the usage rights. In the case of good governance, the customary tenure functions perfectly by providing security to the community. But if the leader is oppressive and does not follow the customary rule, the land administration becomes dysfunctional and unsustainable (Akrofi and Whittal, 2011b).

2.2.2 Community in Customary Tenure

People who have access to the customary lands, or belong to the social group that makes up the landholding group are considered part of the community and are supervised by the chief who manage those lands. Usually, access to the land is inheritable under the customary tenure. Outsiders or settlers (migrants) can gain access to lands with the approval of the customary chief. Although all members of the community are supposed to have equal access to land, the land is not equally distributed among community members (Arko-Adjei, 2011; USAID, 2013).

2.2.3 Ownership, rights and obligations in Customary Tenure

Land ownership is an intricate concept in the customary tenure. The land is bestowed in the community, and the 'ownership' of land belongs to a family of ancestors, present and future generations. The ultimate title of stool land lies with the community with usufruct rights for each individual, and as mentioned in the previous sections, the chief is the custodian. He is responsible for the communal urban or peri-urban land delivery and considering the interest of future generation (Akrofi and Whittal, 2011b).

According to The Ghana Law Reform Commission, four categories for land interests under customary tenure have been identified, under Land Title Registration Law, 1986, PNDCL 152. The four categories are: allodial title, freehold title, leasehold title and lesser interests in land (Sarpong, 2006).

Allodial owners are not subject to any restrictions on their user rights or any obligations; the only exception is made for the laws of Ghana if there is any situation. So, they enjoy the full bundle of rights under the customary law. However, allodial title is vested on the stool/skin and this means communal ownership, not ownership under the 'personal fiat of an individual ruler' which basically establish the concept of land ownership for the community and chief's role as a custodian (Sarpong, 2006). According to the research of Akrofi and Whittal (2011b), the

highest form of allowed tenure ship in Ghana is leasehold for both the indigenous and strangers or migrants considering the future generation in this era of land scarcity. Upon the termination of the lease, the land is supposed to revert to the allodial community.

Under a leasehold, the lessee pays for the right to occupy the land with an annual rent and has contracts covering how the land is used. So, under the leasehold, the lessee enjoys all the legal rights as long as he pays the annual lease rent. He also has the right to give lease but does not have the right to inherit the land (Sarpong, 2006).

Under the customary freehold, the owner enjoys usufructuary rights, which is perpetual. “They have the right to inherit, sale, lease, mortgage or pledge, or to grant agricultural tenancies or shareholder agreements. Nonetheless, the recipient must recognise the superior authority of the stool and to perform customary services to the stool/skin. Customary Freehold owners do not have the mineral rights to use the mineral and resources that come with the land because it belongs to the community (Sarpong, 2006).

Owners of allodial titles or customary freeholds can create various lesser interests in lands. This practice exists in multiple forms or arrangements in the farming communities and is gaining importance as a way of gaining access to scarce land.

Under the customary tenure in Africa, women always have cultivation rights to the agricultural lands, which varies according to social status, even though they have been deprived of any other form of land rights. Lastarria-Cornhiel (p.1319, 1998) quoted Carney and watts (1991), “The subtle process by which the classification of land tenure has changed enables senior men to claim women’s labour, unpaid and uncompensated, while the product of nominally collective fields is individually appropriated.”

Access and control to the customary lands are allocated according to family structure, inheritance and marriage and all households have the right to arable land for cultivation (Lastarria-Cornhiel, 1998). The practices under the customary tenure are highly dynamic and evolving with time making it more undependable in the current world of high land value (Akrofi and Whittal, 2011b).

2.2.4 Ambiguity of property rights under customary land tenure:

As the ownership of land is a complex concept in customary tenure, where the chiefs hold the power of a custodian to ensure the usufructuary rights of the community, the whole land management becomes dependable on the type of governance the chief practices (Akrofi and Whittal, 2011b).

In most African context, land buying under customary tenure is prohibited. Members are given a piece of allocation paper as documentation of allocation or lease. From the research of (Ubink, Janine Marisca, 2008a), allocation paper indicates the transfer of land from a Stool or a Chief to another person and often bear the logo or letterhead of the stool or the chief. Although, in most cases, the allocation papers do not have clearly stated allocation name (of the new owner) and valid time period of the lease or allocation. This creates an ambiguity of ownership when it comes to the point where the chiefs convert the land for commercial or residential purpose, without consulting the current landholder. Although ‘selling’ is not allowed, both the authority and community talk about ‘buying’ and ‘selling’. Due to the high demand for peri-urban lands, the rapid conversion of land use is triggered. And the ambiguity of ownership and documentation under customary tenure is helping the customary authority for taking this decision on their own, who conceptualise themselves as owners, not the trustee acting on behalf of the real owners ‘the community’(Ubink, Janine Marisca, 2008a).

However, Akrofi and Whittal (2011b) concluded from their research that the customary leaders are faced with certain obligations to their people and stool alongside the benefits they enjoy as custodians. The community can bring the charge of 'destoolment' to the chief if he betrays the trust of the community. Destoolment is a disgrace for the leaders and their lineages and the highest form of disrespect a community can bring as an act to keep the leader in check.

2.2.5 Infrastructure development in peri-urban customary land:

From the research of Akrofi and Whittal (2011b) it is found that due to the rapid land-use conversion in the peri-urban areas, the new settlements are forming very rapidly. The agricultural lands are being converted to housing and commercial usage to accommodate the surge of migrants into these regions. These newly converted housing areas are lacking proper infrastructures and services because the land-use conversions are done non-formally and are not in accordance with the state land-use zoning. So when converting the land use, prior to the new housing or other development, no land is preserved for public infrastructures and services. Also, due to the non-accordance with state land-use zoning, state refuses to give services in these non-formal developments. So most newly developed areas in peri-urban Ghana is suffering from the lack of necessary infrastructures and services like water, sanitation etc.

In reference to the theory map, the link between peri-urban development, customary tenure and perceived Property rights and obligation will be discussed in the next segment under the concept of property rights and obligations.

2.3 Property rights & obligations and Perceived Property rights and obligations:

According to Feder and Feeny (1991), there are four basic categories of property rights in land, none (or open access), communal property, private property, and state (or crown) property. With the present intense global focus on it, private property is considered to have the potential to deal with the social and economic problems of the current world. And hence become the prime focus among these four typologies (Jacobs, 2016).

The social dimension of property right:

Property as a social institution indicates the scheme of the relationship between individuals involving rights, duties, power and privileges (Feder and Feeny, 1991).

According to Payne (p.05, 2002), property right is "a recognised interest in land or property vested in an individual or group and can apply separately to land or development on it", and tenure practice is the resulting force of cultural and historical connection of people and the land. Although the term 'property' is associated with the economic dimension, people usually exhibit strong emotional attachment towards it, which makes it harder to measure through the legal unit.

The economic dimension of property right:

Krabben (2009) discusses how resource allocations are defined by the impact of property rights over land. He refers to Coase theorem that when there is no transaction cost, the property right is distinct and allocation of resource is efficient. But with a positive transaction cost, the

allocation of resource is dependent on how precisely the property right is demarcated. Moreover, analysis of the relation of land use planning with land markets through the property right approach is gaining popularity in recent years.

From his research, Krabben (2009) confers to the angle of property rights that is connected with the development of common goods. In this respect, he discusses the two typologies of property rights, economic and legal. “Economic property rights (the ability to derive direct or indirect income or welfare from a resource or attribute of a resource) are the end-result, whereas legal rights are the means to achieve the end” (p.2872, Krabben, 2009). When a person owns a resource through property rights, he is called ‘residual claimant’. He holds residual claims on the benefits from that resource, as Parker and Johansson (2011) said ‘commons’ are principally about the rights to use.

Jacobs (2016) argued, “that private property is central to a market economy. When someone owns the land, he or she has something that can return value. The owner has reasons to care for the land and to invest in it (e.g., to make it more productive). Individual actions can provide direct returns to the owner. Besides, individual ownership of property becomes key to a modern banking system.”

Obligations to Property rights:

Obligation is the legal agreement to the duties that comes with the bundle of property rights. Obligations to private property rights are always tied with the relative security that comes with it. As Feder and Feeny (1991) mentioned in their research, people are often willing to pay taxes or user charges to programs and policies that increase the security of land rights. Payne (2004) recommended identifying the responsibilities and obligations tied to particular rights because it affects the relativity of tenure security.

2.3.1 Perceived Property rights and obligations:

Payne (2004) always stress on the perceived dimension of property rights when defining it. He suggests making adequate distinctions between tenure status and property rights. According to Feder and Feeny (1991), if private property rights are not validated and imposed by law firmly, then ‘de jure private property becomes de facto open access’. Robust institutional arrangements are required to recognise the temporal dimensions of property right by including both formal procedures and social customs. He stressed on addressing both the de facto and the de jure property rights, and in developing countries, it is required to recognise the de facto rights rather than de jure.

In the African context, the ambiguity of property rights under the customary tenure allows the perception of reality to be different. In the complex customary land management, the ‘de jure’ vs ‘de facto’ happens due to the lack of clarity of ownership over the land discussed under the Customary tenure section.

The next section discusses the concept ‘willingness to invest’ by connecting the concept to the growing scarcity of the ‘common resources’ in the peri-urban lands (as shown in the theory map).

2.4 Willingness to invest

2.4.1 Tragedy of the common

Garret Hardin popularised the term tragedy of the commons by assigning a definition to it, how Individuals' rational action ends up being irrational from the social perspective. So he explained that the tragedy of the commons happens for the sensible behaviour of the individuals, not for the irrational behaviour (Jacobs, 2016).

The traditional common refers to the shared resources like water bodies, forest, grazing lands and wildlife. "The primary managerial challenge in traditional commons is to regulate who may use a resource, how much, and in what ways so as to avoid overuse and pollution" (Parker and Johansson, 2011, p.3).

2.4.2 Urban Commons

Urban commons are not considered separate from certain aspects of common. They have been characterised as knowledge, culture, infrastructure and neighbourhood commons by Hess (2008). In her study, she discussed how commons had been studied in urban settings in various ways. Recognition of transportation systems, public parks and leisure areas, waste disposal facilities etc. as urban commons is given. Studies related to these urban commons is relatively new, considering the traditional commons.

In his paper Jacobs (2016) explain the situation of 'tragedy of the commons' in the context of peri-urban areas of the growing cities when individual agricultural landowner decides to sell their land for a higher price. This obvious rational decision of each owner results in an extreme degradation of the green landscape of the peri-urban areas.

Like traditional commons, urban commons play a vital role in urban planning decisions alongside private property (Feder and Feeny, 1991). Jacobs (2016) discussed two solutions offered to the tragedy of the commons in his paper when it comes to the land-use and environmental management and planning. One is a change in decision making scale by diminishing the scope and strength of individual property rights and by ensuring public land and natural resource management. The second one is to rethink the meaning of owning land and natural resource, considering the private property ownership as not just as a bundle of rights, but obligations also. However, recent researches propose an intermediate solution like collective management by involving all the stakeholders (Durán Zuazo et al. , 2011; Garnett, 2012; Parker and Johansson, 2011).

2.4.3 Collective management of the urban commons

In an urban setting, open-access commons like public spaces become 'classic sites for tragedy' for being the sites for unrestrained crime spots and low spatial quality due to lack of authoritarian supervision (Garnett, 2012). To enhance responsiveness to local needs and conditions, collective management for common goods is advantageous and can outperform the legal authoritarian control from the government. This has become a rallying point alternative to the privatisation of urban common resources (Parker and Johansson, 2011). Moreover, collective management acts as the solution for 'regulatory slippage'. In their research, Parker and Johansson, (2011) mentioned the example of 'regulatory slippage' given by Sheila Foster, it is the gap created by the responsible authorities for the maintaining and regulating the open-access resources of the cities like parks and streets due to lack of resources. And when this gap

becomes painful enough for the government and other stakeholders, they encourage to organise forms of collective management.

2.4.4 communal investment interest in urban commons management

The benefits derived from collective resource management incentivise individuals to take part in it (Garnett, 2012). Moreover, the benefit derived from public and collective investments encourage resource-constrained households to conserve natural resources like land, and maintain established structures (Hagos and Holden, 2006).

In her research Garnett (2012), has stressed on micro-level stakeholder's engagement in her discussion regarding urban commons management. She mentioned the proposal of economist Robert Nelson for the wide-scale adaption of **residential community associations** to manage urban neighbourhood commons and how this outdoes the effectiveness of government level management. According to Robert Nelson, enabling urban communities to secure these commons will drastically improve the quality of life in urban neighbourhoods.

However, informal management of urban commons through residential community associations requires social networks and trust among the community members (Garnett, 2012). According to Fabricius and Collins (2007), livelihood asset pentagon developed by DFID plays a vital role in community participation on communal resource management, which are the human capital, social capital, natural capital, physical capital and financial capital. As Garnett (2012) said, communities with strong social capital (strong social network and trust) have the ability to organise informal associations or committees to address local problems, including local management of urban commons.

Many factors impact the social capital and collective efficiency of urban communities. Increase in average residential tenure and levels of homeownership positively impact the collective efficacy. It is reasonable that residential stability increase trust among neighbours. Furthermore, as the problems regarding public-space mismanagement affect their daily life activities, longer-term residents and homeowners have more incentives to address these. And have more perceived ownership of these urban-commons than the short-term residents (Garnett, 2012).

2.4.5 communal investment in natural resource management

Acknowledgement of traditional commons as limited resources have ignited the concern for sustainability to enable resource management and the instruments to do so among the governing bodies and policymakers. As discussed under section 2.4.2, collective management is the transitional solution to the intense conflicts between the public and private management when it comes to the land-use, environmental management and planning. In this context, integrated and collective resource management is a practical approach to solve the conflicts of perceptions of the different stakeholders (resource planners, interest groups, and communities) over the resource values and usages (Durán Zuazo et al. , 2011). According to their research, it is a necessary condition to recognise the numerous stakeholders and their intersectoral relations. According to Fabricius and Collins (2007), Community-based Natural Resource Management (CBNRM) is an efficient tool for collective management of ecosystems to promote management in the local (community) level. However, they stressed on the capacity development of the local institutions and governance structures to do so.

2.4.6 Impact of Commodification of the land on common resource management:

The topic of land has been central for Africa since the 1980s because of the growing conflicts and competition around the land. There has been international influence alongside the local and national claims on lands. Over-privileging notions of flexibility and negotiability in the social relations around lands are embedded in the commodification of lands and influencing the exercise of power and social differentiation (Peters, 2009). The commodification of land in the African context has resulted in attempts to redefine land ownership and tenure controversial to the rights to land, and the customary authorities are in the centre of these controversies over the allocation of the rights to the customary lands. As discussed under the customary tenure section, high demand for peri-urban lands is incentivising the land-use conversions from agricultural to residential and commercial uses. Which in terms are impacting the gradually rising cash demand for these highly valued lands and have effectively established a market price for 'purchase of land leases' (Ubink, Janine Marisca, 2008a).

The attractiveness of cheap peri-urban agricultural lands and the growing demand for multipurpose land-uses are acting as drivers for constant land-use change (Woltjer, 2014) which is creating conflicting values regarding these lands and resource management. At one hand, the high demand and high land value for peri-urban land conversion and urbanisation which is being influenced by the individualistic thoughts provoked by the fundamental right to property. In African context which acts as a benefit for the chiefs, who conceptualise themselves as owners, not the trustee acting on behalf of the real owners 'the community' (Ubink, Janine Marisca, 2008a). On the other hand, the increasing concern regarding sustainable land management that requires the management and co-ordination of these finite natural resources in the peri-urban areas. The dual land management (customary and state) and ambiguity of ownership condition of the landholders (the community) induce the organisational conflicts over the resource management. This situation makes the collective management for resource management more challenging in the African context.

2.5 Sustainable balance of land use:

Sustainability and sustainable land use have become the centre of conversation among researchers, planners and policymakers as soon as land gained the attention as a finite resource. In their research, Durán Zuazo et al. (2011) discussed sustainability in relation to land use. The primary concern about sustainability for researchers and policymakers was to discover a solution with the growing conflicts among environment and economy. Being a vital basis of sustainable development, sustainable land use is a crucial topic for the concerned stakeholders. Encouragement to pay for environmental services (service charge for the consumption of land, water, air and related ecosystem) is considered an appropriate approach by the UN to promote sustainable land use as a solution to the conflict. And, the administration and management of the natural environment and the built environment is defined as the sustainable land use by the research of Durán Zuazo et al. (2011).

Green infrastructures are a tool to maintain the sustainable balance of land use by emphasising on the quantity and quality of urban, peri-urban green spaces and natural areas. Green infrastructure also stresses on the versatile role of these green areas and the interconnectedness amongst habitats Semeraro et al (2017). According to the EU, green infrastructure delivers a wide range of ecosystem services for recreation, climate mitigation and adaptation, and it is a planned network of natural and semi-natural areas. Green Infrastructure includes parks and reserves, sporting fields, riparian areas like the stream and river banks, greenways and trails, community gardens, street trees, and nature conservation

areas, as well as less conventional spaces such as green walls, green alleyways, and cemeteries. According to Fuwape and Onyekwelu (2011), green infrastructure is outdoor places with significant amount of vegetation and natural landscape.

2.5.1 perception and knowledge on the sustainable balance of land use:

The landscape is defined as the perceived area by people, which obtains its characteristics through the action and interaction between nature and human (CE, 2000). Degradation of the landscape all around the world is impacting the earth's natural ecosystem to withstand human activity by damaging the environmental security Durán Zuazo et al. (2011). The land carries the ecosystem, and land use is the systematic human intervention with the ecosystem to derive benefit from it. As Durán Zuazo et al. (2011) quoted from the definition given by Dink (1975), Land use is the "permanent or cyclic human intervention" (Durán Zuazo et al., 2011, p.108).

From this perspective on defining land use, sustainable land use means stabilising the resources and environment that supports the current population and will provide for the future generation. The current importance and emphasising on sustainability is also the recognition of land and the resources that comes with it by society as a finite resource. Furthermore, socio-economic developments are well dependent on these resources.

Durán Zuazo et al. (2011): also stress on the importance and requirement of gaining knowledge and skills of the relevant stakeholders (researchers, policymakers and public) to achieve the capacity to identify possibilities for sustainable and equitable development. Furthermore, understanding the environmental, historical, and social context of the land-use practices is necessary for establishing a sustainable management approach.

2.5.2 Property right and sustainable land-use management

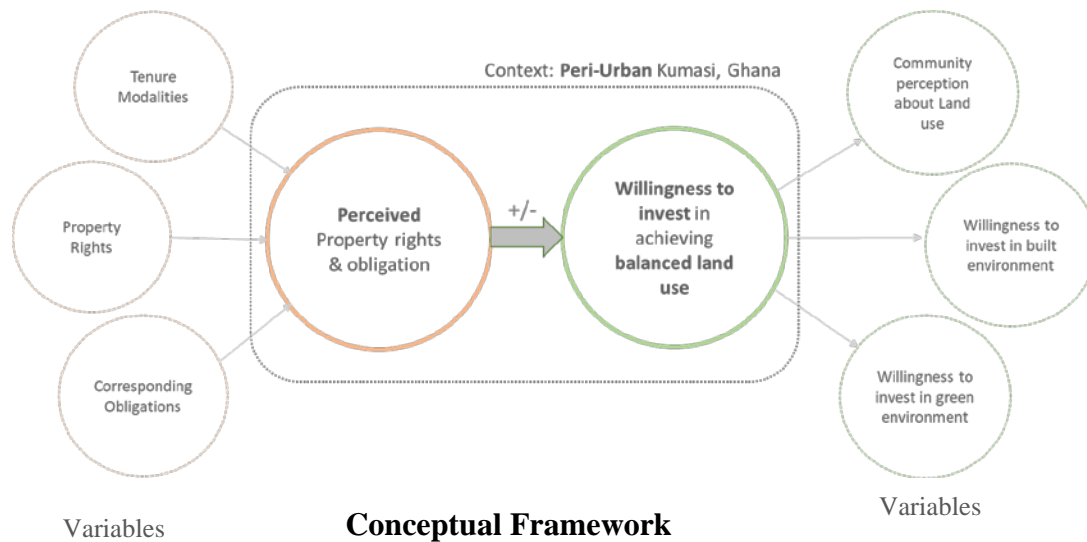
Being a finite resource, the criticality of land management in a sustainable way is imperative. The consequences of natural resources above and below the land control the food supply, air, quality of the living environment and even the recreation of earth's inhabitants. However, the problem lies with resource management is in the level of management (individual or social) (Williams and Shaw, 2009). As discussed in section 2.4, the rational decision for individuals to approach the common resource management is not the rational decision for the social group (Jacobs, 2016).

The age-old debate regarding the best form of ownership for natural resource management or open-access resource management is based on the spectrum of property rights. Many recommended private property rights over land and natural resources as the best way to manage natural resources in a sustainable manner. This is assumed on the basis of the concept that without property right, the prevailing open-access conditions encourage the users or frequent reaping from that resource that leads to environmental destruction. At the same time, public or government ownership is inspired by others to preserve or protect these resources. Some very creative common property managements have a higher success rate in sustainable resource management over the privately managed property (Cole and Ostrom, 2010, p.44).

Without property rights, open-access conditions prevail, which frequently do lead to environmental destruction when users are located near a resource and are interested in harvesting from it.

2.6 Conceptual framework

The conceptual framework demonstrates the relationships of the concepts discussed in theoretical review in this chapter. The relationship between property rights and obligations and investment decisions are connected. However, this research aims to examine and explain the perceived property rights and obligations (independent variable) through tenure modality, bundle of rights and obligations, and, establishing the connection with the community willingness to invest in achieving balanced land (dependent variable).



Chapter 3: Research design, methods and limitations

This chapter transforms the research from the theoretical framework to the empirical situation by explaining the detail research design.

3.1 Description of the research design and methods

This section presents the overall research strategy, data collection method and sampling, and re-presents the research questions in view of research method and instruments.

3.1.1 Research Strategy:

The objective of this research is to identify and explain people's willingness to invest in their perceived sustainable balance of land use, and to measure it through their perceived property rights and obligations in the specific context of peri-urban Kumasi, Ghana. The study requires to learn individuals' perception on a particular topic; therefore, the research has been conducted by the interpretative research. As mentioned by Van Theil (2014), in the interpretative approach, researchers assume that individuals or groups of people have their own understanding of reality. And to understand that, they study how people experience specific events by categorising the interpretation assigned to these events. The study focus on one event or situation. Then different elements/situations of the event are taken into consideration as the units of study. The final note made on the interpretative approach by Van Theil (2014) is the importance of context, which is inspected by the qualitative methods. Which, in terms, makes the case study approach the perfect strategy for this by allowing the researcher to analyse data on non-numeric variables like perceptions. Furthermore, the subject of the study is set in a real-life context requiring in-depth investigation. Therefore, considering the focus and requirement of the research, the case study strategy has been selected as the research strategy for this study.

The independent variable of this research is perceived property rights and obligations of the community. From the literature review, it is evident that the customary land management system largely impacts this ownership, property rights and obligations in the context of Ghana. And, the property and land management differ under the custody of different chiefs (Lastarria-Cornhiel, 1998). Hence, the different cases for this study have been selected as different communities under the chieftaincy of different chiefs. Three cases are chosen considering the Feasibility of the data collection process considering the time and workforce, whereas two cases would be too small sample size for comparison. Van Theil (2014) and Yin (2003) both mentioned that the study results from multiple case studies are more compelling. In addition to that, the arguments in favour of multiple heterogeneous case studies are more related to this research. As Van Theil (2014) suggested, the heterogeneous design enables the researcher to determine the effect of the variation in the independent variable on the dependent variable by comparing several cases.

3.1.2 Data Collection & Sampling:

Data Collection sites

Aforementioned in chapter one, this research is a part of the research project of PBL that studies the dynamics of the land-use change of the peri-urban Kumasi, and the data collection process is done in collaboration with the team. Three districts within peri-urban Kumasi have been selected for data collection by the six researchers who all are conducting their research in Ghana as part of that project. The site selections have been made after consulting with local researchers of the team, PBL team, IHS_PBL project coordinators and the local partners

(BIRD-KNUST) of PBL in Ghana. All three districts have been broadly selected considering both the common and individual needs of the researchers. For this research on community perception, Afigya-kwabre district has been selected for the primary data collection. The primary selection point considered is that this district is less urbanised and still have more green areas compared to the other two districts. This study needs to identify community perception on a balance between green and the built environment. Existing green areas in the neighbourhood would help the people to comment on their perception of balanced land-use. For the specific heterogeneous cases for this study, Kodie, Buoho & Ntribuoho, these three neighbourhoods are selected as each of them is governed by different customary authorities.

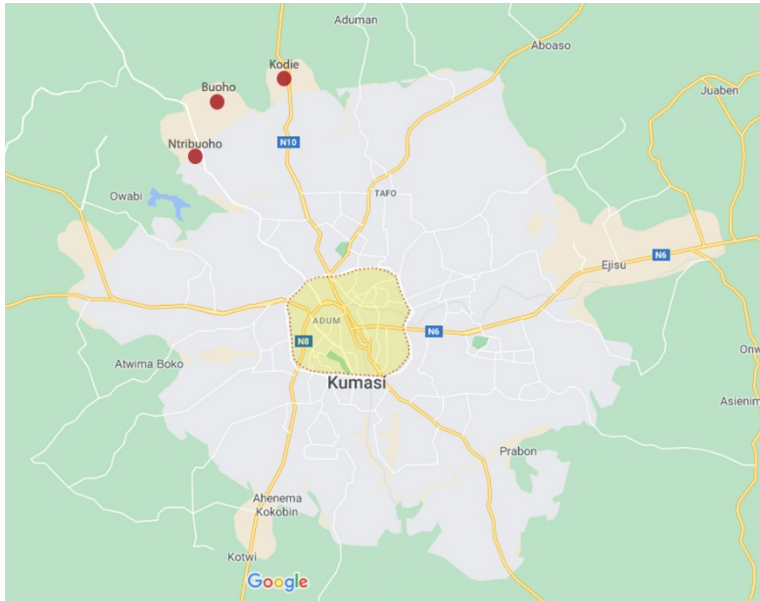


Figure 1: Site location map
 source: author (2020)
 Note: Three locations are shown in red dots

Data Collection Method & Sampling:

For data collection during this Covid-19 world pandemic, a local team has been formulated considering the restricted mobility condition of the researchers (all residing in the Netherlands during the period of data collection) which didn't allow them to go to Ghana in person. The field works (primary data collection) have been conducted by three research assistants under the direct supervision of academics from BIRD-KNUST (Local partners of PBL in Ghana).

Mixed data collection method has been used to collect and triangulate data.

Questionnaire survey is used as the key data collection tool for the primary data collection to collect data from the people of the selected neighbourhoods. This data collection method has been chosen considering the possibility of reaching out to more respondents within a limited period of data collection and restricted social interaction condition due to Covid-19. Data have been collected from 62 respondents (see chart 3.1) in total from Kodie, Buoho & Ntribuoho. The quota sampling method is used to ensure equal participation from all respondent categories: male, female, owners, renters, indigene, settler, family heads and members. However, this sample size is limited for quantitative analysis. It is a good number considering the COVID 19 situation, although this number is not representative. This has been addressed by triangulating with information collected through other methods (semi-structured interviews with respondents and experts, observations of the R/As,

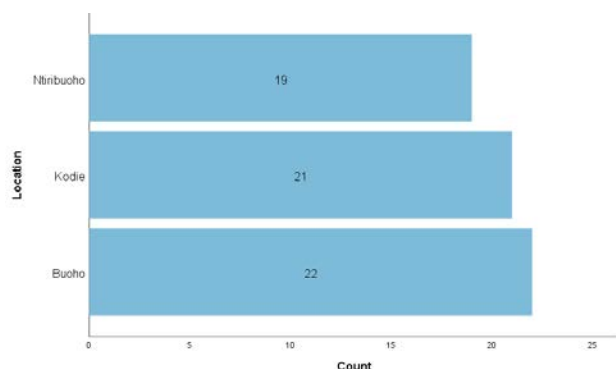


Chart 1: Sample size per Location

Semi-structured interviews are used to collect data from the sub-chiefs (customary authorities) and stool land officers (they are working for Ghanaian government, so are considered as state authorities). These respondents are selected through purposive sampling, considering the criteria for data collection (see table 3.1). The semi-structure interview has been chosen as a data collection tool for these categories of respondents considering the limited sample size. Furthermore, these data are used to triangulate the data collected through the household survey. Semi-structured interview gives the opportunity to generate follow-up discussions during data collection. Which is another reason for selecting this tool.

Observations from the research assistants are also noted during the debriefing meetings with the local team and has been treated as primary data for triangulation during data analysis.

SAMPLING METHOD	DATA COLLECTION TOOL	RESPONDENT	SAMPLE SIZE	CRITERIA
Quota sampling (male, female, owners, renters, indigene, settler)	Questionnaire survey	Family Heads & Family members	62	- 3 communities/neighbourhoods under three different chiefs
Purposive	Semi-structured Interviews	Sub-Chiefs (customary authorities)	3	Manage different neighbourhoods
Purposive	Semi-structured Interviews	Stool Land Officers (State authorities)	3	Knowledge, expertise, work experience and availability
Purposive	Semi-structured Interviews	Academics	1	Knowledge, expertise and work experience
N/A	Photo Documentation	Research Assistant	N/A	Site condition

Table 3.1: Data collection tool and sampling
Source: Author (2020)

3.1.3 Research Questions:

Main Research question:

In the context of peri-urban Kumasi, to what extent does the perceived property rights and obligation of the community affect their willing to invest in establishing a sustainable balance of the built environment and green open space?

Sub-questions:

5. **What are the legal and perceived property rights of the indigenous community?**
6. **What are the legal and perceived obligations based on the legal and perceived property rights?**

To answer these questions, both primary data (questionnaire survey, observations from the research assistants on field, notes from the debriefing meetings with the R/A) and secondary data (reports and literatures) were used.

Primary data collected through interviews were used to triangulate the findings from these sources.

7. **What is the perception of the local community about the sustainable balance between green open space and built environment?**
8. **In what ways are they interested/willing to invest in achieving their identified sustainable balance between green open space and built environment?**

To answer these questions, primary data from questionnaire survey, observations from the research assistants on field, notes from the debriefing meetings with the R/A were used.

Primary data through interviews and secondary data (reports and literatures) were used to triangulate the findings from these sources.

3.2 Operationalisation: variables, indicators

As presented in the conceptual framework in Chapter 2, this study measures the concept of “Investment decisions in achieving balanced land use” which is dependent on the concept of “Perceived Property rights & obligations”. From the literature review variables and indicators are derived and operationalised as follows.

3.2.1 Operational Definitions:

Tenure Modalities: spectrum of ownership typologies under customary tenure.

Property Rights: the rights of the landholders of the property

Corresponding Obligations: the duties and obligations that comes with the ownership pf land and properties.

Perceived balance land-use: Community understanding on the balance of land-use, the balance between green and built environment.

Community Willingness to invest: Community investment interest and type of investment they are willing to contribute.

3.2.2 Operationalisation table:

In the operationalisation table, the concepts are broken down to variables, sub-variables and then into measurable indicators.

CONCEPT	VARIABLES	SUB-VARIABLES	INDICATORS	DATA TYPE AND SOURCE
Perceived Property rights & obligations	Tenure Modalities	Type of Tenure	01. Ownership status: - Customary: - Allodial - Freehold - Leasehold - tenant	Data Type: Nominal Data source: primary
			02. Community status: - indigene - settler - temporary settler - transit settler	Data Type: Nominal (binary) Data source: primary
		Years of Residency	Years of Residency	Data Type: Nominal Data source: Primary
	Property right	Legal property rights:	01. Legal bundle of rights: - Right to use - Right to sell - Right to exclude - Right to lease - Right to Cultivate - Right to inherit - Right to generate income - Right to use public services	Data Type: N/A Data source: Secondary
			02. Documentation for property - Document for land - Document for house/property	Data Type: Nominal Data source: Primary
		Perceived property rights:	01. Resident's understanding about their bundle of property rights: - Right to use - Right to sell - Right to exclude - Right to Cultivate - Right to inherit - Right to generate income - Right to use public services	Data Type: Nominal Data source: Primary
	Corresponding Obligations	Legal Obligations:	01. Legal Obligations to pay for the property: To the government To the chief To other	Data Type: N/A Data source: Secondary

			02. Resident's understanding about their legal Obligations to pay for the property: To the government To the chief To other	Data Type: Nominal Data source: Primary
		Perceived Obligations	01. Resident's understanding about their obligation for owning property	Data Type: Nominal Data source: Primary
			02. Ownership of more property within same neighbourhood	Data Type: Ordinal Data source: Primary
			03. Social connection with neighbours (community members)	Data Type: Nominal Data source: Primary

Table 3.1: Operationalisation table for independent variable
Source: Author (2020)

CONCEPT	VARIABLES	SUB-VARIABLES	INDICATORS	DATA TYPE AND SOURCE
Willingness to invest in achieving balanced land use	Community perception about Land use	01. Residents' opinion about existing land use	- existing proportion of built and green environment in the neighbourhood	Data Type: Ordinal Data source: Primary
		02. Resident's knowledge about the legal regulations:	- Regulation designated to their land & property - Regulation designated for development control mechanism for new developments in vacant/green lands	Data Type: Nominal (binary) Data source: primary
		03. Resident's Understanding about following the regulations:	- importance of following_ regulations	Data Type: Ordinal Data source: Primary
	Willingness to invest in built environment	01. Willingness to invest in developing built-environment	(i) New development preference in the existing vacant land (ii) Interest to contribute in increase in - housing development - commercial development (shops) - industrial development - Others	Data Type: Nominal Data source: Primary
		02. Willingness to invest in communal facilities:	(i) Investment Interest in increase in communal infrastructure and services: - Electricity connection - Water connection - Sanitation service - Road construction	Data Type: Nominal Data source: Primary

		(ii) Investment Interest in increase in communal amenities: <ul style="list-style-type: none"> - schools - hospitals - clinics - markets - Shops 	
	03. Type of investment interest in built environment	<ul style="list-style-type: none"> - Financial contribution - Knowledge contribution - Skill contribution - Providing labor and man-power - Suggesting/Requesting to the authority (chief/assembly) - Offering co-operation & partnership - Other contribution - Not interested to contribute 	Data Type: Nominal Data source: Primary
Willingness to invest in green environment	01. Willingness to invest in Developing green areas	<p>(i) New development preference in the existing vacant land</p> <p>(ii) Interest to contribute in developing:</p> <ul style="list-style-type: none"> - new green parks - new playing fields - new plantation/agricultural fields <ul style="list-style-type: none"> - Investment interest in new tree plantation 	Data Type: Nominal Data source: Primary
	02. Willingness to invest in preserving green environment	<p>(i) Residents' understanding/ about existing green areas</p> <p>(ii) Investment interest in:</p> <ul style="list-style-type: none"> - preserving open green field - protection of existing trees - agricultural land - plantation in open green land - Preservation of the forest - Investment interest in Animal protection in green (Wild life) <p>(iii) Interest to contribute in preserving green</p>	Data Type: Nominal Data source: Primary
	03. Type of investment interest in green environment	<ul style="list-style-type: none"> - Financial contribution - Knowledge contribution - Skill contribution - Providing labor and man-power - Suggesting/Requesting to the authority (chief/assembly) - Offering co-operation & partnership - Other contribution - Not interested to contribute 	Data Type: Nominal Data source: Primary
	04. Residents' contribution in green infrastructure	<p>Investment decisions made in provision of green services:</p> <ul style="list-style-type: none"> - Renewable energy - Waste Management - Rain water harvesting, - Green housing <ul style="list-style-type: none"> - Environmentally friendly building materials - Recycled building materials <p>Sustainable energy sources such as solar</p>	Data Type: Nominal Data source: Primary

Table 3.2: Operationalisation table for dependent variable
Source: Author (2020)

3.3 Data Analysis, Validity and reliability:

3.3.1 Data Analysis:

Although the questionnaire survey (Annex:1) has been used to collect qualitative data on perception, to analyse the data from the questionnaire survey, the qualitative data is quantified and coded to numeric values (see operationalisation table 3.2.2). Coded data is analysed through SPSS. Due to the nature of this research, most of the collected data are in nominal scale. So, the data analysis tests are selected accordingly. Cross-tabulation among categorical variables is run to explore the relationship among categorical variables. Pearson's chi² (χ^2) statistical test is used to test the association between variables and indicators. The Chi-square statistic is a non-parametric tool designed to analyse group differences when the variable is measured at a nominal level (IBM SPSS software Webpage,). Ordinal logistic regression is also used to establish if the independent variables have a statistically significant effect on the dependent variables (ordinal regression allows to run test among variables in ordinal and nominal scale).

The primary qualitative data sources are the semi-structured interviews. Observations from the research assistants, information collected during the debriefing meetings with the research assistants and the local team, respondents' comments and opinions on survey forms are also considered as primary qualitative data. The secondary qualitative data sources are reports and literatures. All the qualitative data have been structured, managed and coded based on the variables, sub-variables, and indicators developed through the operationalisation table. The qualitative data have been used to triangulate the data collected through the Questionnaire survey.

3.3.2 Validity and reliability:

In the heterogenous multiple case study research, the measured effects are conditioned by the context of the studied cases, that enhance the internal validity of the research (van Thiel, 2014). To enhance the validity of the research further, the indicators for data measurement and analysis in the operationalisation have been derived from adequate theoretical construct. The questionnaire survey (primary data collection tool) has been designed to collect data precisely on each indicator. Some questions were asked repetitively from different viewpoints to get a valid answer by replication logic. Respondents were also given options to add further comments on the indicator (if any).

Reliability of the case study research method largely depend on the triangulation of the study (van Thiel, 2014). Semi-structured interviews have been introduced as the data collection tool to collect required data for triangulation the data collected from the key informants (household respondents). Observations from the research assistants on several indicators of measurement have been taken into consideration for the triangulation of the survey data. The knowledge of the local language and context of the research assistants contributed to the enhanced reliability of the research. Another important factor for this study was the available consultancy from the fellow researchers from Ghana. Although each researcher have different topic of study, the group discussion regarding peri-urban context of Kumasi and multiple meeting with the team gave this researcher the opportunity to compare and triangulate the collected data and enhance inter-researcher reliability.

3.4 Challenges and limitations

As a researcher from a different context, not being able to visit the site physically creates a blind spot. This thesis deals with people's perception which is very much contextual. Familiar context gives the researcher the benefit of the 'unknown known' knowledge. This limitation could have been overcome by the physical site visit of the researcher during the data collection period in June, which didn't happen due to the Covid-19 situation. This also limits the possibility for the researcher to collect information from the context through direct observation. Researcher made an effort to address this by getting familiarised through the photo documentation of the sites and continuously consulting with local colleagues and research assistants.

To understand perception, an interview is a preferred instrument than a questionnaire survey. An interview gives the option to make people feel comfortable and give an honest opinion, even though the answer might not be the socially desired one, which is different than filling out a questionnaire. Sometimes people can easily give a dishonest socially desirable answer in a written format. Moreover, with an interview, more information is revealed than the structured questionnaire. Although, this choice has been made to overcome the difficulties that might arise during data collection through the semi-structured interviews for the household respondents by a research assistant. For example, difficult social interaction situation due to Covid-19, misinterpretation of the interviewed data, translation error of the interviews done in a local language, and the limitation in sample size (interview requires more time or manpower). With a questionnaire survey, it is possible to increase the sample size. Correspondingly, semi-structured interviews with chiefs and municipal officers has been used to triangulate the data from the questionnaire.

However, the final sample size of the questionnaire survey turned out to be too small to be representative for quantitative analysis. Also, the purpose of the semi-structured interviews was not achieved fully. In some cases, the interviews were very short and brief without the opportunity of asking follow up questions due to the discomfort of the respondents during Covid-19 pandemic. Furthermore, the limited data collection period and the weather condition of the data collection sites restricted the possibility of conducting daily debriefing meeting with the research assistants. So the collected data through the semi-structured interview was not enough for triangulate the survey data. These limitations were tried to overcome by collecting information from the field research assistants, from their observations during data collection process, also by collecting data from relevant secondary sources (reports and research papers) and consulting with the academics and experts of the BIRD-KNUST.

Chapter 4: Presentation of data and analysis

4.1 Characteristics of the respondents

Household survey is done by collecting data from 62 respondents from the three neighbourhoods Kodie, Buoho and Ntribuoho. Chart 1 shows that the primary respondents (90%) of this study are from the households. Their demographic characteristics are presented in the following section (4.2.1).

Three sub-chiefs are the acting customary authorities and carry out the of land-management issues in the three data collection sites (Kodie, Buoho, Nitribuoho)

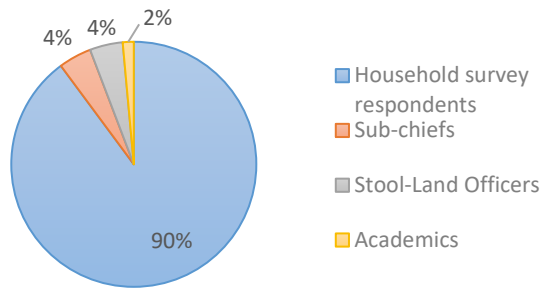


Chart 2: categories of respondents

Source: Author (2020)

4.2 Demographic characteristics of the household respondents:

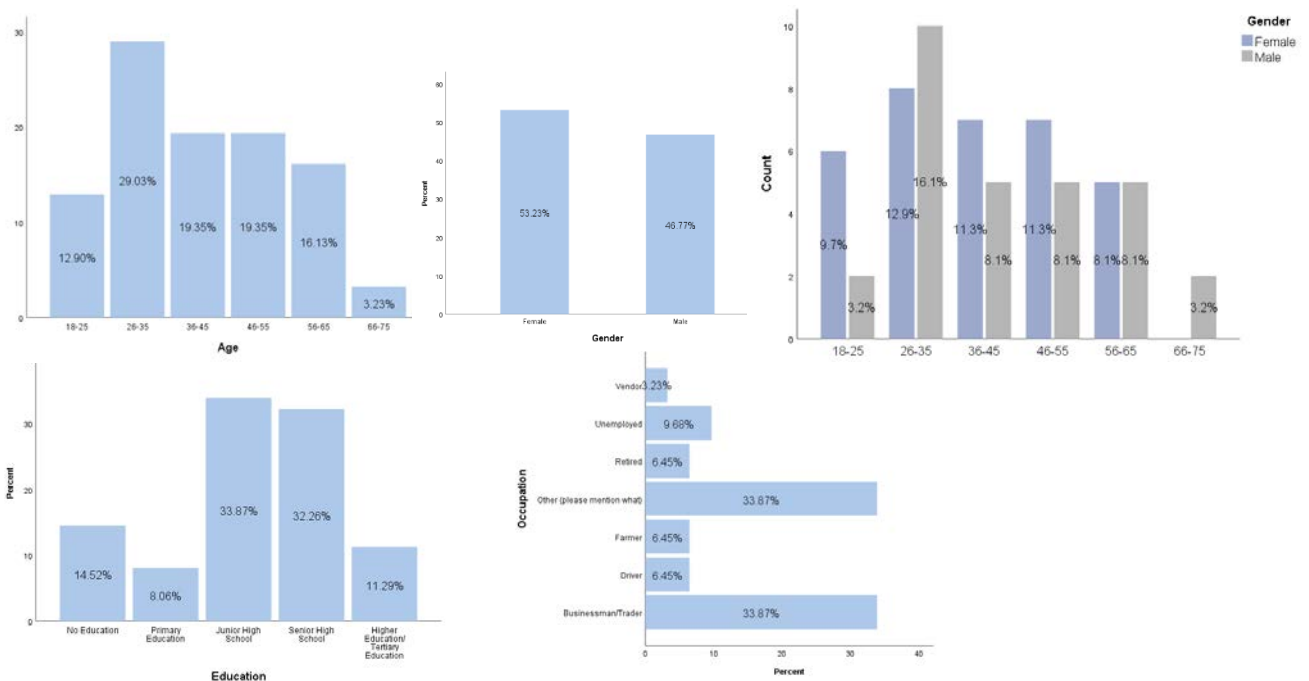


Chart 3:

Source: Author (2020)

Note 01: for charts showing the counts and percentages of respondents, the counts of respondents are presented above the percentages in the charts.

4.3 Perceived property rights and obligation of the community:

Analysing this concept through variables and indicators will answer the first two sub-research questions of this study. The concept is unpacked into three variables Tenure modalities, Property rights and Corresponding obligations. These variables were measured through the sub-variables and indicators sub-divided in the operationalization table. In this section, findings per indicator, the summary of the findings per sub-variable, variable and a general finding on this concept (independent variable) is presented.

4.3.1 Tenure Modalities:

To identify the tenure modality of the Household Respondents, they were asked about their ownership status, community status (if they are indigenous or settler), and years of residency.

a) Type of Tenure:

From the data collected through household survey, chart 3 demonstrates the counts and percentages of the respondents according to the ownership categories. It shows that 45% of the respondents are tenants, whereas allodial owners with the highest property rights are 32%. Freehold and leasehold owners are 15% and 8%. Location wise, Kodie and Buoho have higher number of tenants than other categories (see chart 4).

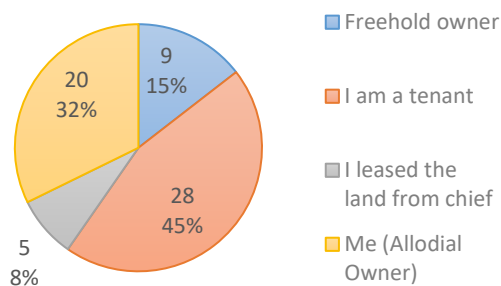


Chart 4: Ownership Status - All respondents

Source: Author (2020)

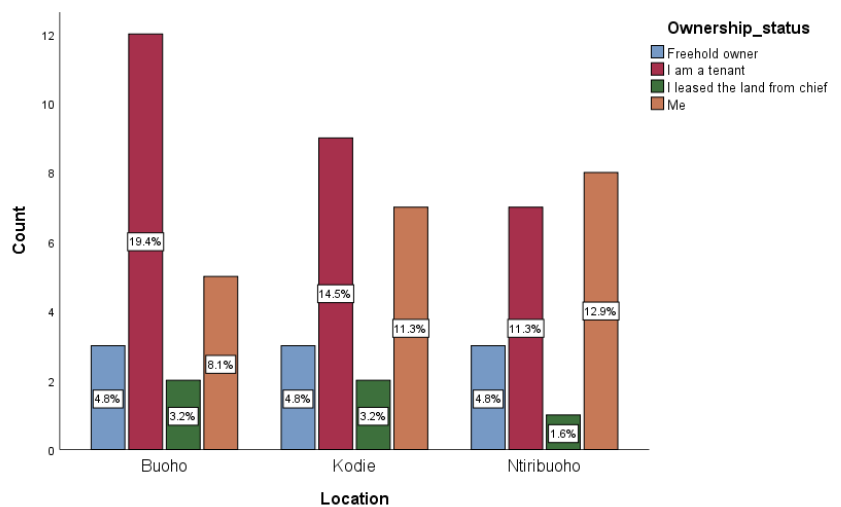


Chart 5: Ownership Status - Location wise

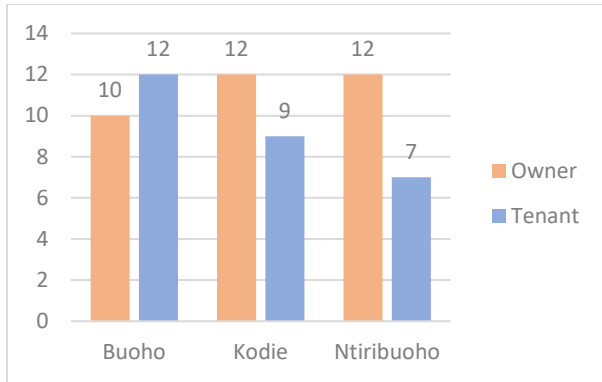


Chart 6

Source: Author (2020)

The respondents were asked if they were indigene or settler (moved here from other part of the country). For the settlers, they were given the option to select transit settler (staying in the location for a certain period of time before moving to another location). Chart 6 depicts that majority of the respondents (70.97%) are settlers, 27.42% are indigene and only 1.61% are transit settler. For the insignificant sample size, transit settler will be considered as settler (73%) for further data presentation and analysis. Chart 7 shows the location wise community status of the respondents. Kodie has more indigenous respondents (12.90%) than other two locations. Buoho has highest settlers (27.42%) among the respondents.

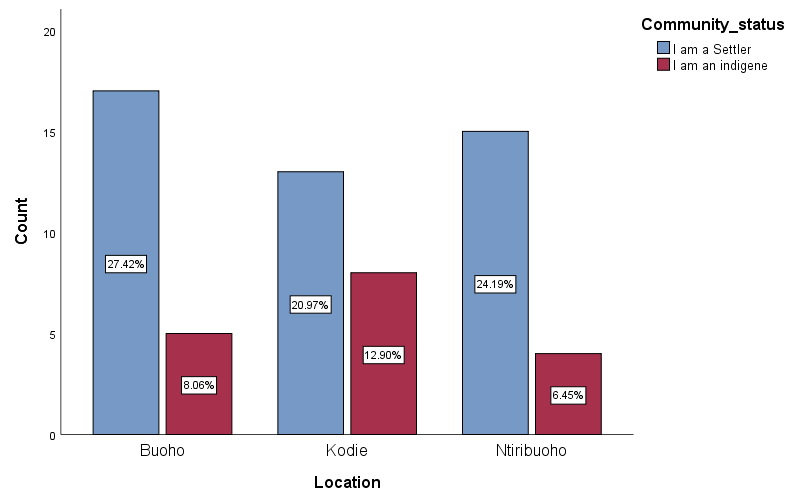
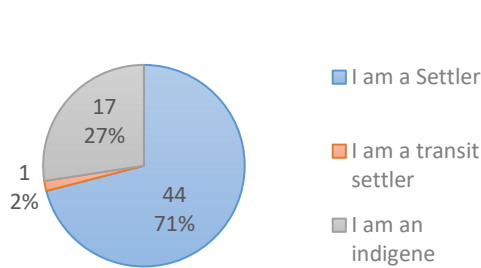


Chart 8: Community Status - All respondents

Source: Author (2020)

Chart 7: Community Status - Location wise

Cross-tabulation among ownership status and community status was run in SPSS to present the relationship between these two indicators (see chart 8). Among 72.58% settlers more than half (40.3%) are in tenant category. Whereas, only 4.8% among 27.47% of Indigenous people are in tenant category. The second highest number (21.0%) of settlers are in Allodial owner category. This category (allodial owners) has the highest number of Indigenous respondents (11.3%).

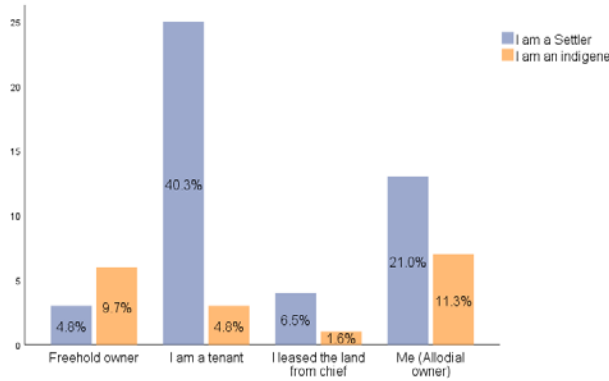


Chart 9

Source: Author (2020)

b) years of residency:

From the household survey respondents, majority (38.71%) have been living at the sites for over 15 years (see chart 9). the second big chunk is 0-4 years (30.65%). Among the three neighbourhoods, Buoho and Kodie have more respondents who have lived there over 15 years, whereas Ntiribuoho has more respondents from ‘0-4 years’ category (see chart 10).

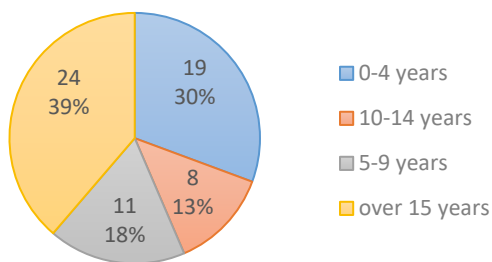


Chart 10: Years of Residency - All respondents

Source: Author (2020)

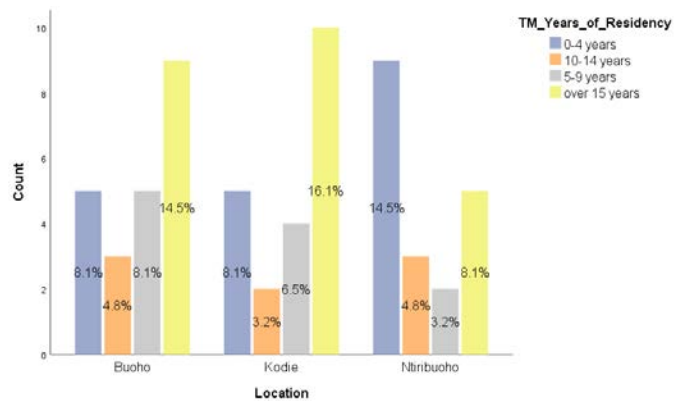


Chart 11: Years of Residency

Form/type of tenure is connected with the duration of residency (Payne, 2004). Cross-tabulations among Years of residency, ownership status and community status were run in SPSS to present the relationship (see chart 4.6 & 4.7).

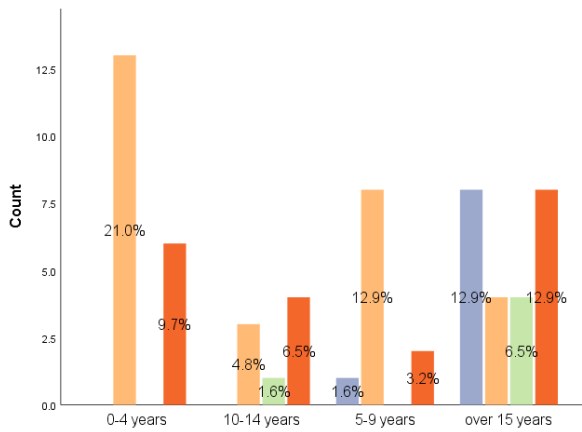


Chart 12

Source: Author (2020)

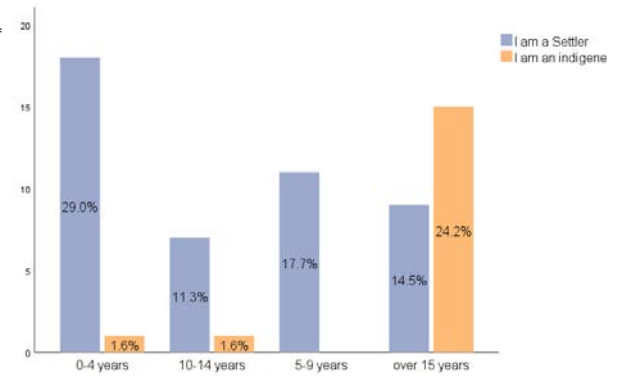


Chart 13

Chart 11 & 12 shows all types of tenure holders (both owners and renters) and settlers are spread over the residency years categories. Although Most (21.0%) tenants and most settlers (29%) are in 0-4 years category. Although, 9.7% of allodial owners are also in the 0-4 years category. Which can be explained by the pivot chart 13. It shows that the allodial owners in 0-4 years category are settlers. Chart 12 depicts that furthestmost indigenous people (24.2%) are living in the sites for over 15 years.

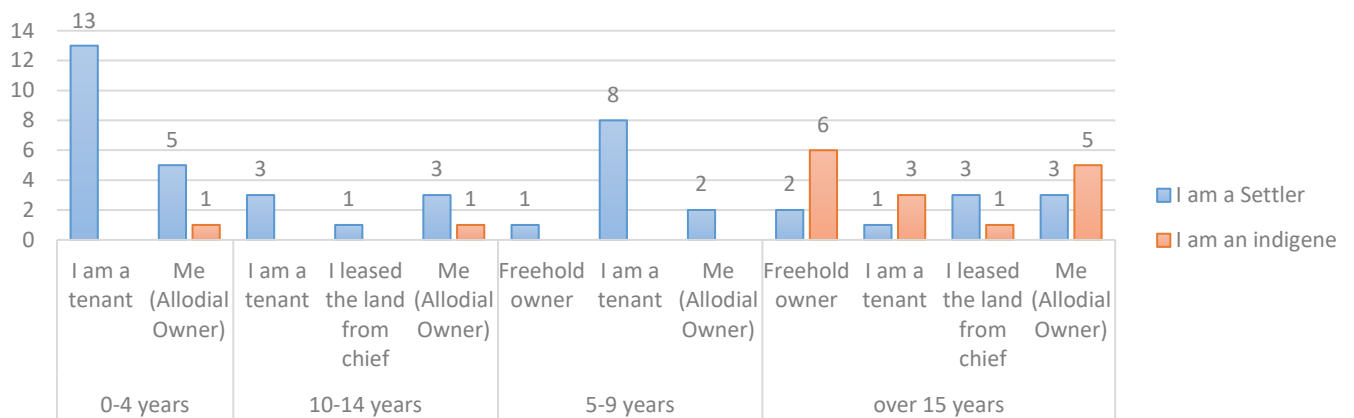


Chart 14

Source: Author (2020)

Discussed in the literature review, from the research of Arko-Adjei (2011) it is found that, access to the land is inheritable under the customary tenure for indigenous people. Outsiders or settlers (migrants) can gain access with the approval of the customary chief.

Variable summary:

Finding from the collected data shows higher number of settlers among respondents, which confirms the continuous migration happening in the peri urban Kumasi discussed in the literature review. More than half of the settlers are tenants. and that explains the highest number of tenancies among the other form of ownership status.

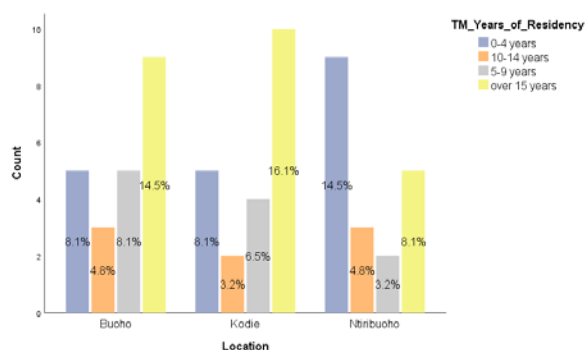
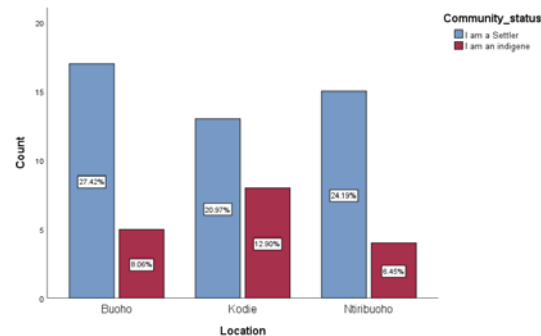
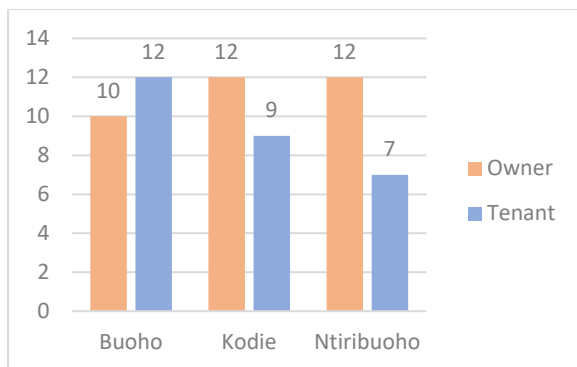


Chart 15

Source: Author (2020)

Location wise, Buoho and Ntribuoho have more settlers and Kodie has more indigenous respondents. Buoho has more tenants, however, Ntribuoho has more owners and has highest number of respondents with residency year 0-4. It shows that new settlers are gaining ownership over lands. In addition to that, all forms of land ownership holders are spread over all four categories of residency years. In the time frame 0 to 14 years, most of them are settlers. Whereas almost all indigenous owners have residency of more than 15 years chart 14.

Findings from the literature and collected data, it is concluded that for settlers gaining land ownership is important to gain access in the community. So, all settlers residing in the places over the years (from new to old) are concerned for gaining any form of land ownership.

4.3.2 Property Right:

The variable property right is measured through Legal and perceived property rights. This research considered the land law and policy of Ghana to establish the legal rights of the owners or users. Then, the comparison is being made by distinguishing between the community perception about property right and what they have legally.

a) Legal property rights

(i) Legal bundle of rights:

According to The Ghana Law Reform Commission, four categories for land interests under customary tenure have been identified, under Land Title Registration Law, 1986, PNDCL 152. The four categories are: allodial title, freehold title, leasehold title and lesser interests in land.

“Allodial owners hold their interest under customary law and are not subject to any restrictions on their user rights or any obligations except for those made obligatory by the laws of Ghana”. (Sarpong, 2006). So, **they enjoy the full bundle of rights.**

Under the customary freehold, **the owner enjoys usufructuary rights**, which is perpetual. **“They have right to inherit, sale, lease, mortgage or pledge, or to grant agricultural tenancies or shareholder agreements.** Nonetheless, the recipient has the obligation to recognize the superior authority of the stool and to perform customary services to the stool/skin.” (Sarpong, 2006)

Under a leasehold, the lessee pays for the right to occupy the land with an annual rent, and has contracts covering the manner in which the land is used. So, under the leasehold, **the owner enjoys all the legal rights as long as he pays the annual lease rent.** He also has the right to give lease but **do not have the right to inherit the land.**

Various **lesser interests in land** can be created by owners of allodial titles or customary freeholds. This practice exists in various forms or arrangements in the farming communities and is gaining importance as a way of gaining access to scarce land. **None of the respondents of this study fall into this category.**

The sub-chiefs were asked about the legal rights of the land holders and owners under their jurisdiction. During the semi-structured interview, all three respondents stated that allodial owners enjoys full form of ownership. For instance, one of the sub-chiefs said, “Based on the purpose upon which a parcel of land is purchased, individuals have rights to use that land for its intended purposes”. Although, about the other form of ownership, freehold and leasehold, none of the respondents has any acquaintance. As quoted from one’s response regarding freehold ownership, “the chiefs do not give out parcels of land for any individuals for free, unless a land is to be used for infrastructural development for the community such as schools, clinics, and the rest”. Another response regarding leasehold, “our lands aren’t intended to be used for this regard, in the sense that there’s no definite lease policy on our lands”

Data collected from the interviews shows that customary authorities of all three locations do not have the knowledge about the tenure ship and the difference of rights the tenure holders have.

(ii) To measure the indicator “documentation for property” the household respondents were asked if they have documents for their land and property (house).

Documents for land:

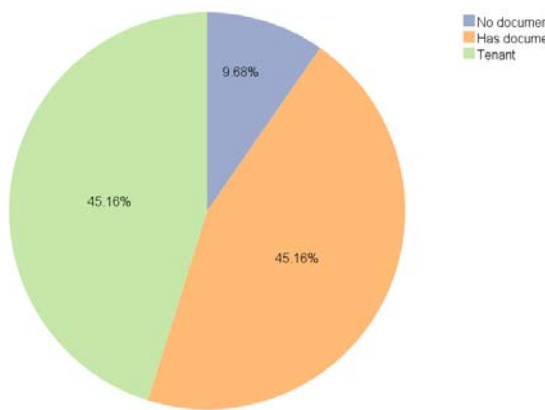


Chart 16

Source: Author (2020)

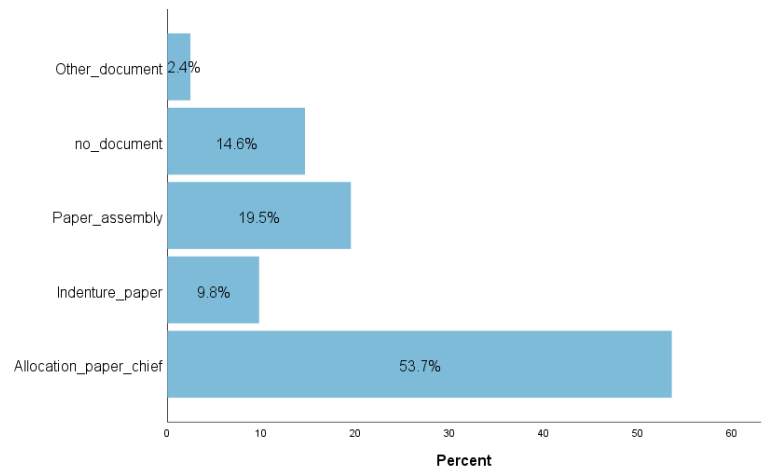


Chart 17

Chart 15 shows among the 54.84% land owners (allodial, freehold, leasehold), majority has documents (45%) for their lands, only 10% don't have any documents. Chart 16 shows the type of documents or no documents the land owners have. More than half of the owners have Allocation paper from chief (53.7%) as a proof of legal documentation for their land ownership.

According to the research of (Ubink, Janine Marisca, 2008a), allocation paper indicates the transfer of land from a Stool or a Chief to another person and often bear the logo or letterhead of the Stool or the chief. Although, the samples of the allocation papers he came across during his research, allocation name (of the new owner) and valid time period of lease or allocation was never stated clearly.

Interview data shows that all customary authorities of all three locations were ensuring about the community having documentation for their land and confirmed that the chiefs are in charge of issuing those papers. However, data collected from the interviews show that land 'buying' is a common practice for the chiefs in all three locations, although the customary law prohibits this. For instance, one sub-chief responded, "in term of this, buyers own their lands for whatever the purpose they seek to do with the land, and majority who come to buy lands from us mainly use it for residential purposes". Frequent times, the sub-chiefs mentioned the customary land holders as buyers.

Documents for property (House):

Chart 17 shows among all respondents (land owners and renters), 31.43% has building permission paper from assembly, 17.14% has permission paper from chief, 14.29% of the respondents do not have any document for their house and 35.71% have rent contract.

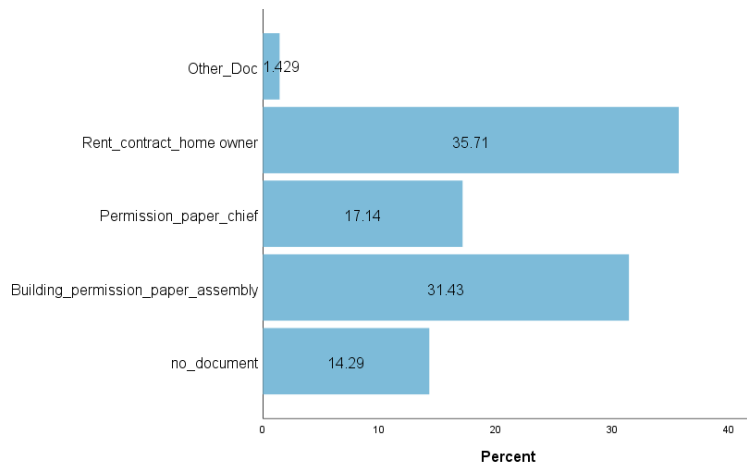


Chart 18

Source: Author (2020)

Cross-tabulation among the ownership status and Land & house document were run to find the house documentations condition among land owners (allodial, freehold, leasehold) and tenants (see chart 18 & 19).

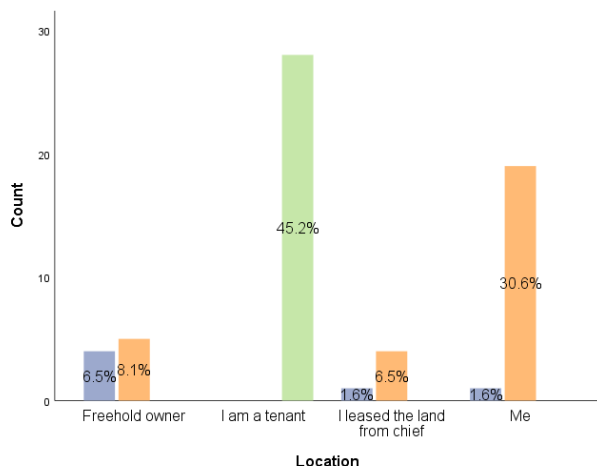


Chart 19

Source: Author (2020)

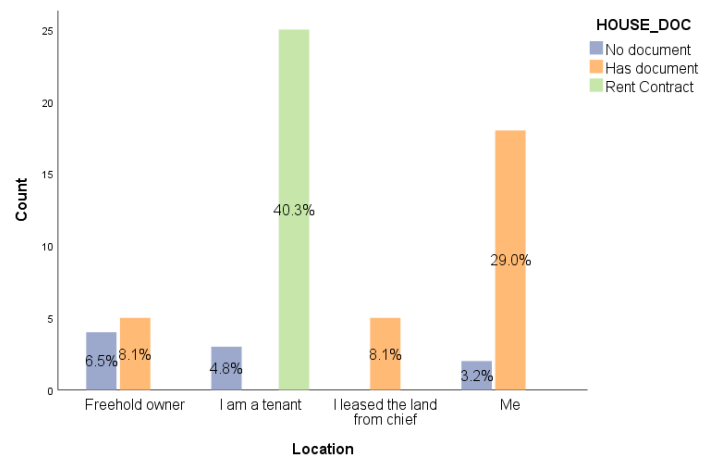


Chart 20

The cross-tabulation chart 18 shows only 1.6% allodial owners and leaseholders do not have land document, almost half of the freehold owners (6.5% among the total 14.52% freehold owners) do not have documents for land.

All allodial owners have paper for their house except 3.2%, all the leaseholders have documents for their house. All tenants have rent contracts except 4.8%. Same amount of respondents among freehold owners (6.5%) don't have docs for their house as well.

Interview data from all three location shows that, the customary authorities have less knowledge regarding the requirement of building permission paper from assembly (government). For example, one respondent answered during interview, about people getting permission from the state authority for building house, that as people have full rights over land, they don't need permission from government.

b) Perceived property rights:

(i) Resident’s understanding about their bundle of property rights:

To measure the resident’s understanding about their bundle of property rights, respondents were asked to select all that applies from the given options of bundle of rights. Chart 20 shows the percent of the bundle of rights that were selected by the respondents from all three locations.

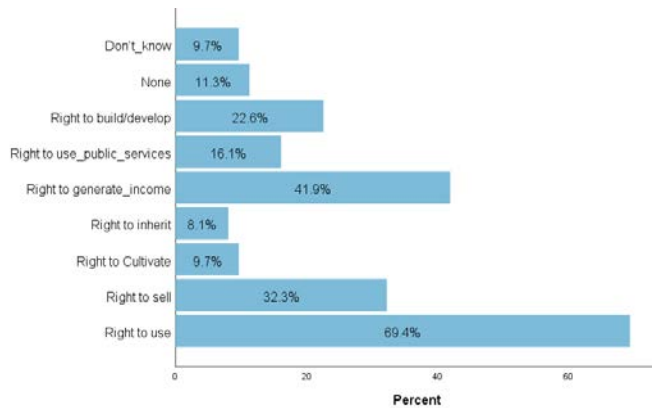


Chart 21

Source: Author (2020)

Chart 21 presents cross-tabulation between perceived bundle of rights and ownership status. The chart presents the percentage of responses among different owner groups.

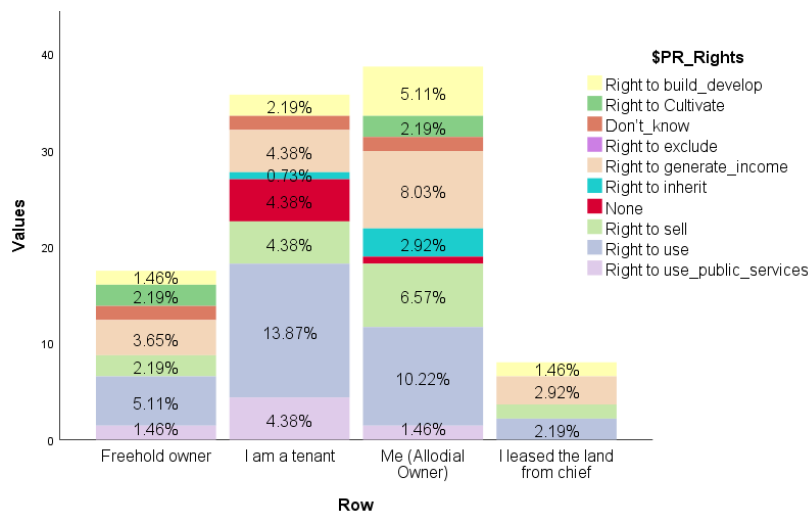


Chart 22:

Source: Author (2020)

Chart 22 presents cross-tabulation between perceived bundle of rights and three locations and no significant difference according to location is found.

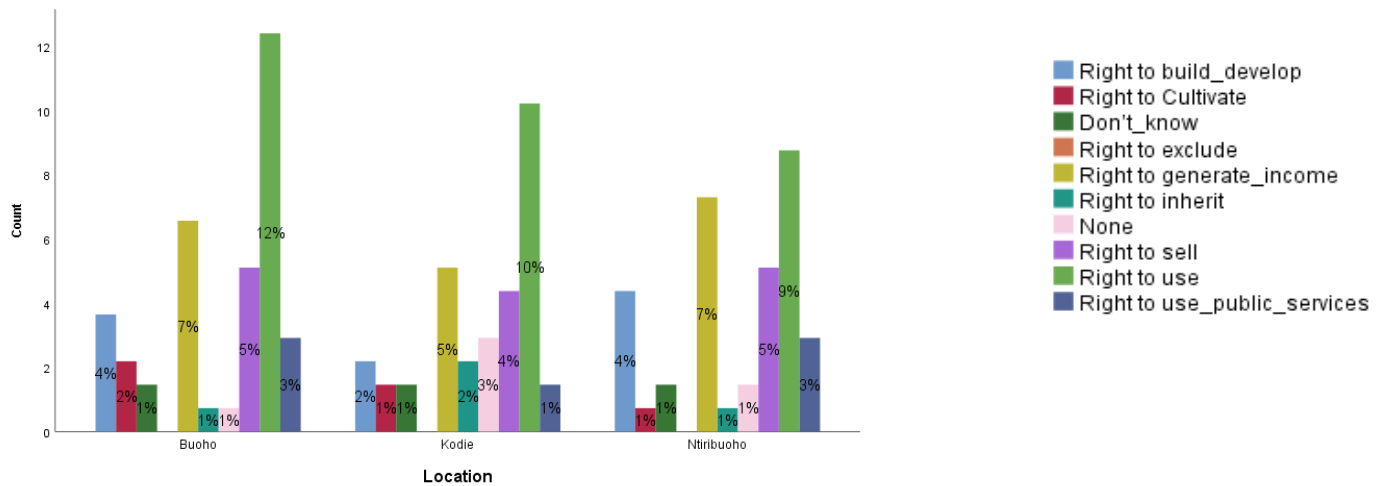


Chart 23: redo

Source: Author (2020)

Variable summary:

From the findings of literature, it is evident that land buying under customary tenure is prohibited. However, the findings from all sources confirms that both community and customary authority are not aware of this fact and buying and selling lands have been a common practice.

Chart 21 demonstrates the unclarity of knowledge of the survey respondents about their bundle of rights. Even all the respondents who are allodial owners did not select all the bundles of rights that comes with their ownership. No respondents selected 'right to exclude' or 'right to lease' even though the allodial owners, freehold or even the leaseholder have the right to lease and exclude. Data from interviews show that the authorities also do not have clear understanding of the bundle of rights of the owners.

Almost all land holders have some form of documentation regarding their land, most have allocation papers from the chief. Findings from the literature states that allocation papers do not have clearly stated owner name or time period for allocation, which creates ambiguity of ownership when it comes to the point of using the bundle of rights (sell, develop, cultivate etc).it is also found from the literatures and interview data that because the customary authorities are the decision holder for land use change decision, they can and they practice this to sell the land and convert the land use. Which is the part of the bundle of right of the land holder legally. However, their lack of knowledge and the ambiguity of the allocation paper works in favour of the chiefs in these scenarios.

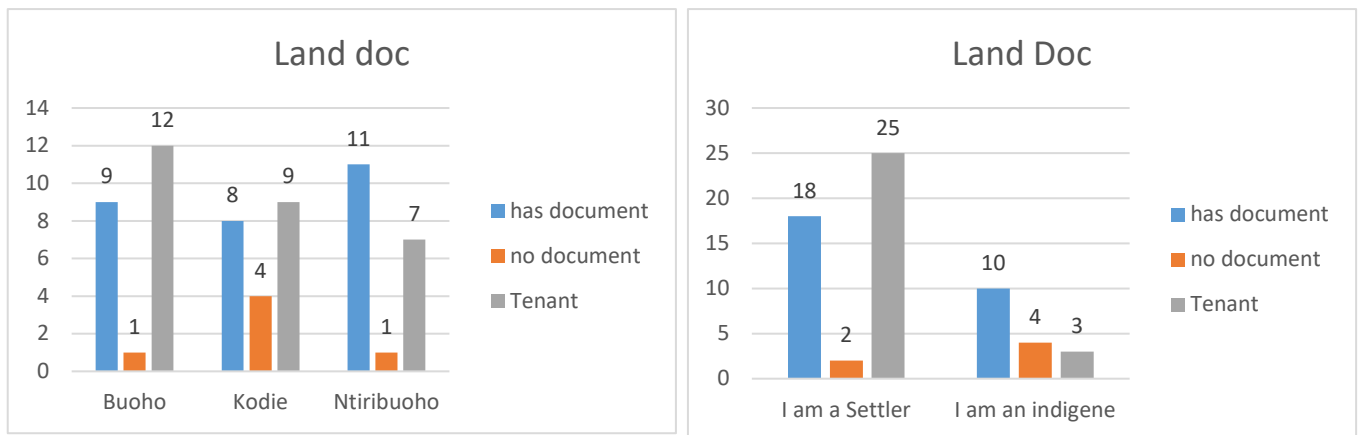


Chart 24

Source: Author (2020)

In case wise comparison, Buoho and Ntribuoho has more doc for land, which is because these two sites have more settlers than Kodie. Chart 23 confirms this that more settlers have documents than the indigene people. From the findings it is concluded that Although the non-clarity of the legal document fails to provide sense of security, having documents contribute to the perceived property right for the settlers by giving a sense of ownership and belongingness to the community. As discussed in the literature review and in the previous section, for settlers some form of ownership of land is a means to be accepted in the community.

Despite the failure of the documents to provide sufficient legal tenure security, almost all respondents have some form of documentation for their property. Documentation adds to their perceived security.

Customary authorities are not concerned regarding the building permission requirement from government in the customary lands. Their illiteracy and negligence about the required permission from state is resulting in unplanned growth because these developments are being done without permissions from state.

4.3.3 Corresponding Obligations:

a) Legal obligations:

(i) Legal Obligations to pay for the property:

Property right always comes with obligations. The most basic legal obligation that come with owning property is to pay tax to the govt and in the context of Ghana, for the customary land sometimes payment to the customary authority.

According to the report and Ghana land policy (USAID, 2013), the owners of the land are required to register and pay annual tax, whereas the leaseholders are required to pay to their customary authorities for the lease of the land.

And, the customary authorities have the duty to the community to manage the lands and resources trustfully as the custodian (Akrofi and Whittal, 2011b).

(ii) Resident’s understanding about their legal Obligations to pay for the property:

Chart 24 depicts that 34.7% people pay property tax to the government. A cross tabulation with the ownership status was done to find the payment condition ownership wise (chart 25). It is found that among the 31.9% respondents who do not pay, 22% are tenants.

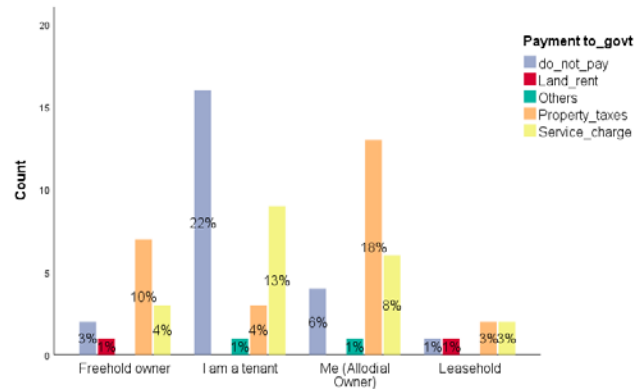
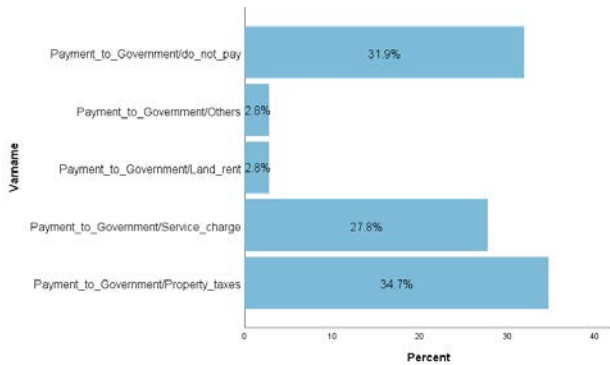


Chart 25

Chart 26

Source: Author (2020)

From the cross-tabulation, it is also found that owners and tenants both pay service charge and property tax to govt. this data was cross-checked from the observations of R/A and the information collected during debriefing meetings. It was found that people pay service charge for communal toilet cleaning and garbage collection. The assembly members are in charge of this money collection. So, during survey people opted for this option because they assumed that they are paying to the assembly members means they are paying to the government. 31% among the 45% land holders pay property tax.

Chart 26 and 27 presents the payment condition to the chiefs and Neighbourhood management committee (if any). From the response it can be said that the respondents are not clear about for what they are paying for. For example, 12.1% people said they are property taxes to the chief among which 8% are the allodial owners.

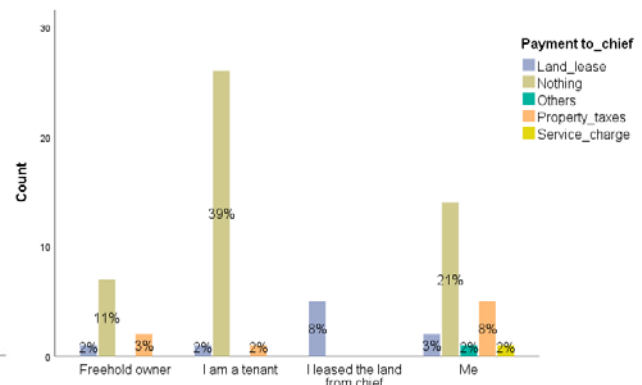
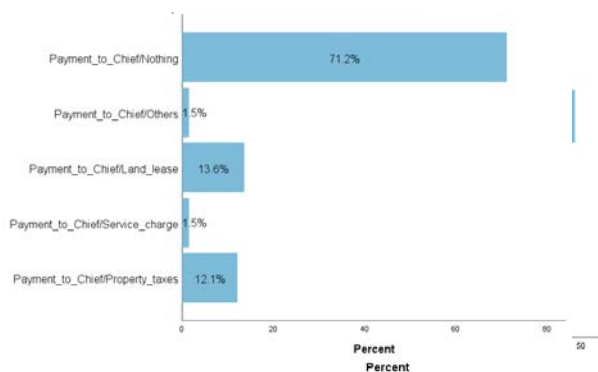


Chart 27: Payment to the chiefs

Chart 28

Source: Author (2020)

According to the data collected from the semi-structured interviews, customary authorities were very assuring about the land owners’ payment of tax to the government. As for example,

one sub-chief said, “Yes, buyers pay tax to state authorities for holding right to their lands and properties as well, and I think that’s mandatory of everyone”. Although when they were asked about the community paying lease money to the customary authority, the response was indistinct. For instance, one responded, “No, chiefs don’t collect taxes/money from their community members, but the state”.

b) Perceived obligations:

(i) Resident’s understanding about their obligation for owning property

Chart 28 presents that 70.97% respondents do not feel any obligation for owning their property.

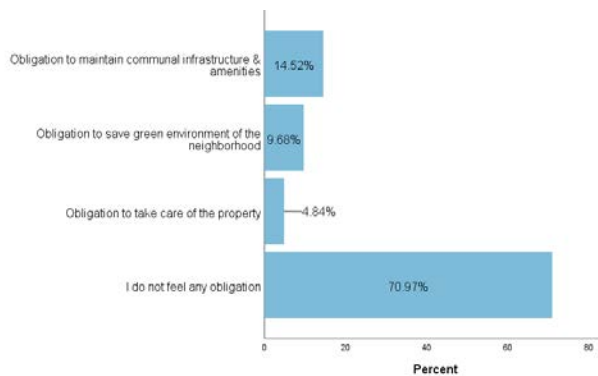


Chart 29

Source: Author (2020)

(ii) Ownership of more property within same neighbourhood

Household respondents were asked if they own any other property in the neighbourhood (chart 29). Owning more property might induce the feeling of obligation. Cross-tabulation is done with ownership of more property and feeling of obligation. No statistically significant association is found in chi square test ($p=0.087$, which is $p>0.05$) (see Annex 4). However, from chart 30 it is found that people with more property feels more obligation to maintain communal infrastructure and amenities.

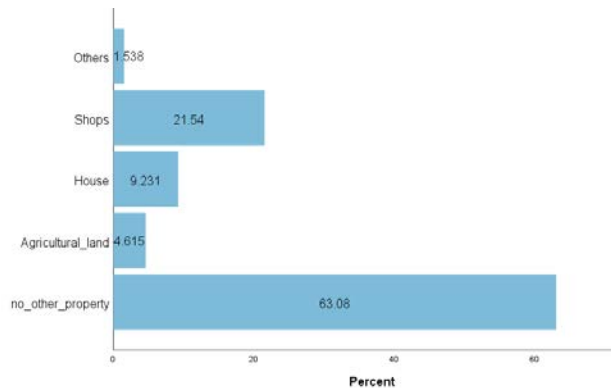


Chart 30

Source: Author (2020)

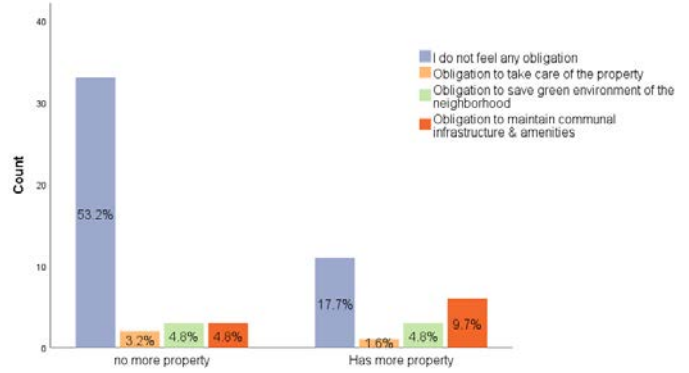


Chart 31

(iii) Social connection with neighbours

Property as a social institution indicates the scheme of relationship between individuals involving rights, duties, power and privileges (*feder*). **Nicole Stelle Garnett** said social networks and trust among the community members increase with the years of residency.

Respondents were asked about their Social connection with neighbours (community members). Chart 31 shows that all respondents opted for average, good and very good, although they were given options to select bad and very bad. To find the impact of social connection on the perceived obligation a cross tabulation with chi2 test is done (chart 32). No significance was found.

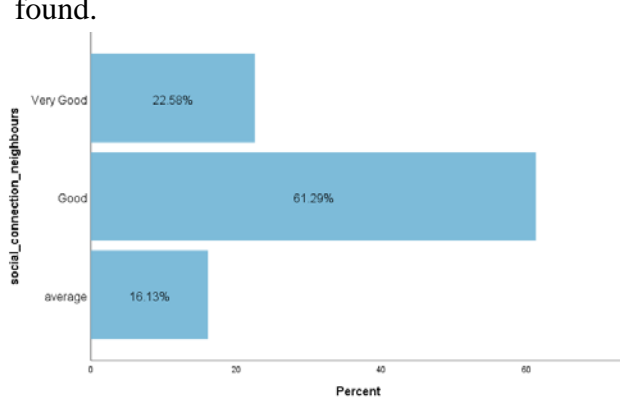


Chart 32

Source: Author (2020)

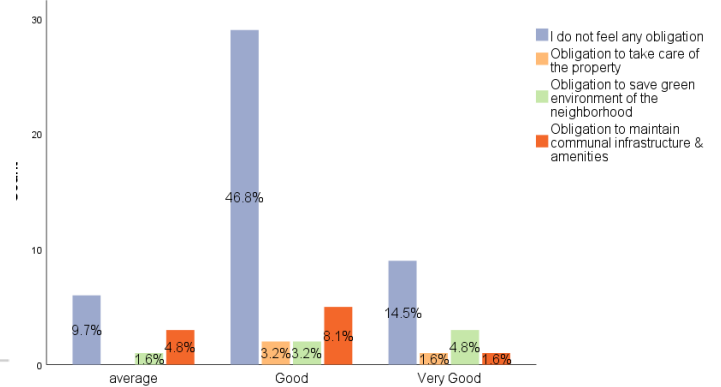


Chart 33

Variable Summary:

Informal cash flow between the customary authorities and new lessee for land ownership or leasing is very evidently found in the literature. However, the interview respondents were ambiguous about this when question was asked regarding land tax and land lease.

From the collected data, it is concluded that, like the legal rights, both community and authorities have very vague idea about their legal duties and obligations. However, most people pay for their land and property without having proper knowledge about to whom and what for they are paying. And, most respondents said they do not feel any obligation for owning their property.

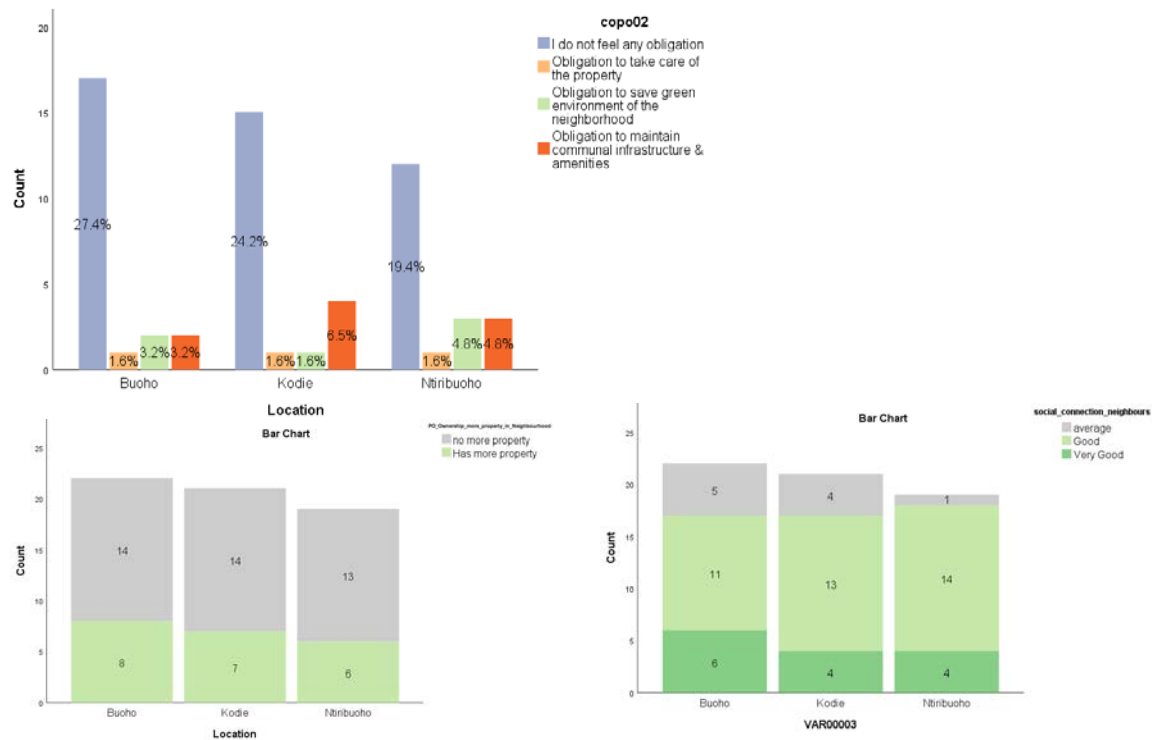


Chart 34

Source: Author (2020)

In the case wise comparison, it is found that most respondents of Buoho said they do not feel obligation for owning property, however, they have highest count to have 'very good' relationship with neighbours. Almost all respondents from Ntribuoho has responded good or very good even though the year of residency is less in there compared to the other two locations.

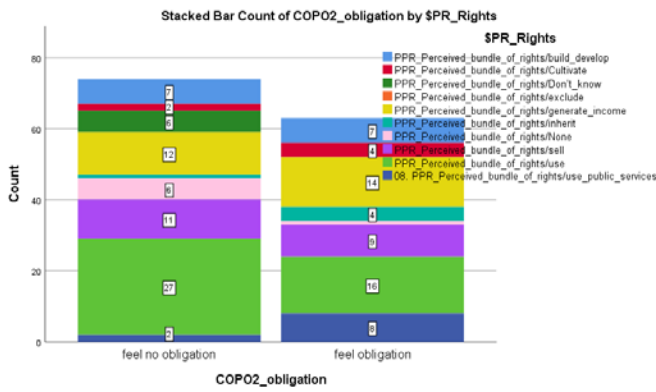


Chart 35

Source: Author (2020)

A cross tabulation has been done to compare the bundle of rights between people who feels obligated and who don't for owning property. Although the differences are very minor, it is mentionable that, it is found, the respondents who feel obligation for owning property opted for higher counts on right to use public services. Higher count on "none" rights who do not feel any obligation.

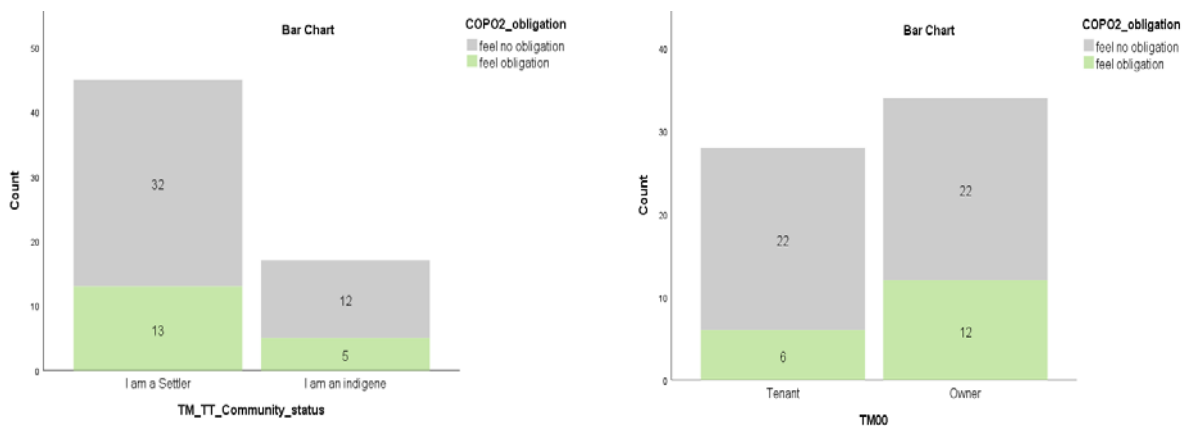


Chart 36

Source: Author (2020)

From the crosstabulation between the feeling obligation and community status it is found that both settlers and indigenous people have similar response ratio regarding feeling no obligation. However, it is found that more owners feel obligation than tenants.

4.4 Community willingness to invest in achieving balanced land use:

To understand and estimate community willingness to invest in achieving balanced land use (dependent variable) this concept has been dismantled into three variables: Community perception about Land use, community willingness to invest in built environment and community willingness to invest in green environment. These variables are measured through the sub-variables and indicators sub-divided into in the operationalization table. In this section, findings per indicator, the summary of the findings per sub-variable, variable is presented.

4.4.1 Community perception about land use:

Community perception about land use is measured through the residents’ opinion about existing land-use, their knowledge about the land use regulation and inclination towards following those regulations.

a) Residents’ opinion about existing land use:

Respondents were asked to give their opinion about the existing proportion of built and green environment in the neighbourhood. The data collected per location is shown in chart 37, which shows, in Buoho, more respondents (16.1%) preferred green over the 14.5% people preferring buildings. In Kodie and Ntiribuoho 16.1% respondents prefer buildings over the 11.3% people who think there should be more green space. Chart 36 shows the overall response. 46.77% respondents think there should be more building and infrastructure over 36.71% who think there should be more green space.

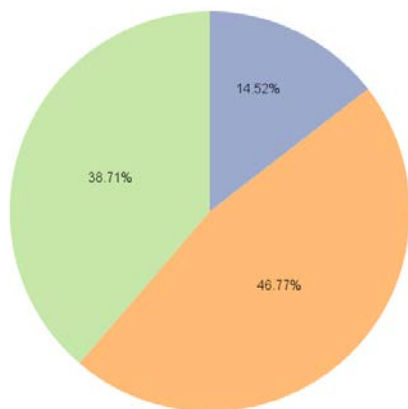


Chart 37

Source: Author (2020)

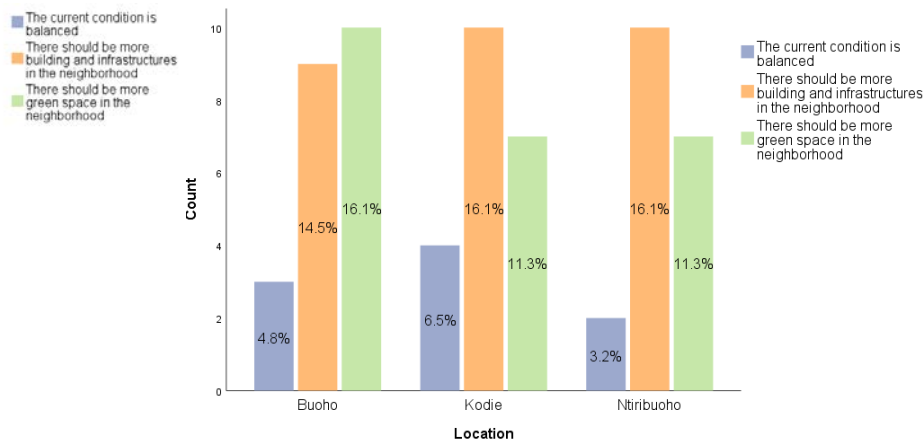


Chart 38

The semi-structured interview respondents (sub-chiefs and stool land officers) were asked about their conception about the current land use. Finding from all three locations is same regarding this. The answers from the customary authorities were very distinct to this question, for example, one said, “No, there has been no form of balance of the two, and I think there should be more buildings and infrastructures because of urbanization”. Also, the customary authorities were asked about the community opinion regarding the land use. Findings from Kodie and Ntiribuoho is that authorities think community opinion might vary according to individuals’ personal interest. Although, in Buoho the findings show that the authority stress

on the demand of urbanization rather than community opinion. Interview with the land academic confirms this information as well.

Similar findings have been confirmed by studies in Ghana (Ubink, Janine Marisca, 2008a) and in Kumasi (Akrofi and Whittal, 2011b) which says the chiefs are rapidly converting the green lands to other land uses like residential, commercial and industrial specially in the peri-urban areas due to the high demand and land values. Sometimes the land holders are also giving away their farming lands for a higher price and moving to other areas (Sarpong, 2006) .

In all three location, the state authorities expressed their concern regarding the degradation of green space due to urbanization pressure.

b) Residents’ knowledge about the legal regulations:

Data collected from three locations regarding residents’ knowledge about the legal regulations (chart 24b) shows fewer respondents from Buoho (5%) have knowledge on regulation designated to land use than the other two communities (7%). However, for regulation designated to new development control (Chart 41), more respondents from Buoho (5%) have knowledge that the other two locations (2%).

Chart 38 shows among total respondents, most respondents, 82.26% and 91.94% answered that they have no idea about regulations designated to land-use and development control mechanism for new developments in vacant/green lands (see chart 38 and 40).

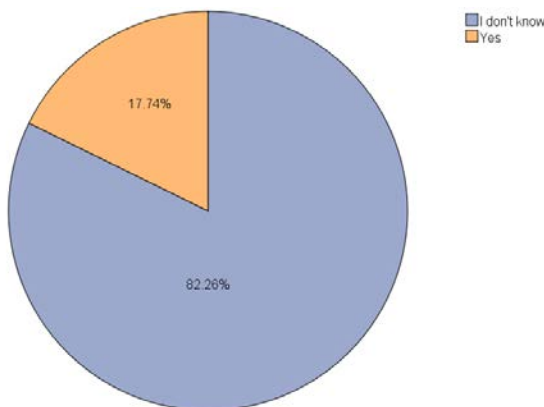


Chart 39: Knowledge regulation designated to land use

Source: Author (2020)

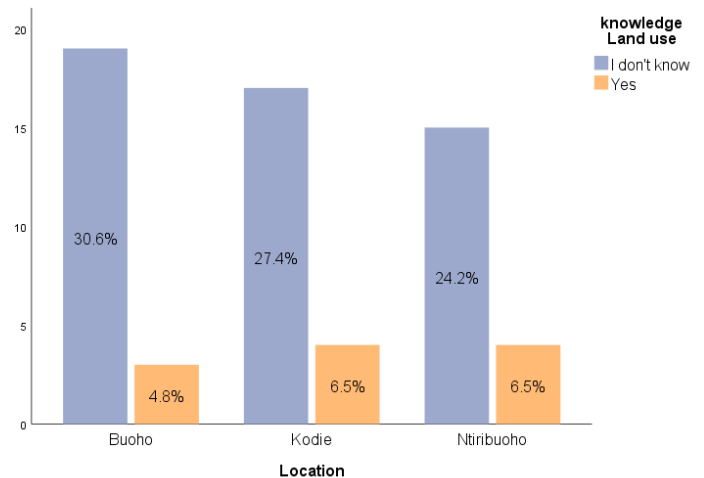


Chart 40

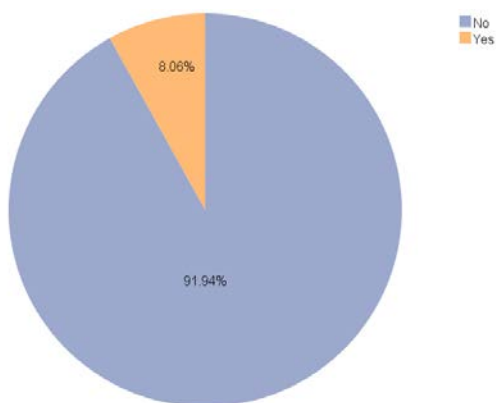


Chart 41: Knowledge regulation designated to new development control

Source: Author (2020)

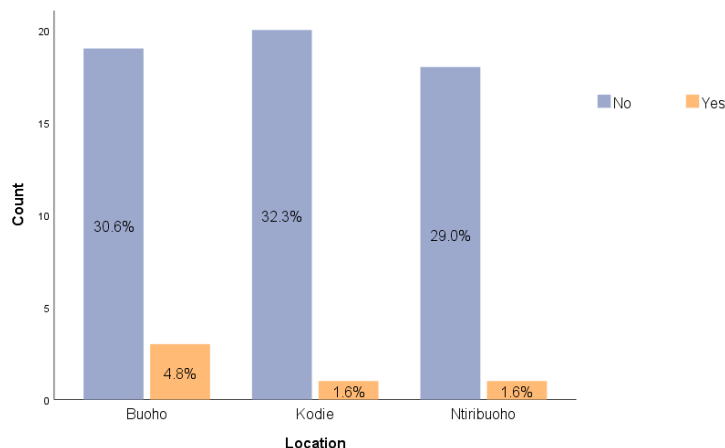


Chart 42

The few respondents who knew about the rules, were asked about the source of their knowledge. They mentioned the chiefs and assembly officers as their source of knowledge.

Findings from the semi-structured interview with the customary authorities show that, in Buoho and Ntribuoho, the customary authorities have no idea about the state /government regulation regarding land use and new development. For example, the reply from one respondent was, “It’s only the chiefs or land custodians who own full rights to the use of such areas and not the state authorities”. However, according to the stool land officers decision-making process for new developments are often the collaborative decision between chiefs and the state authorities.

c) Resident’s Understanding about following the regulations:

Data collected from three locations regarding residents’ Understanding about following the regulations (chart 39), shows more respondents from Buoho (15%) stated that following rules are very important to them compared to the other two communities (Kodie 8%, Ntribuoho 7%).

The response regarding following rules were same for land use and development control regulations. For overall respondents, 29.03% responded that following rules are very important to them (see chart 42).

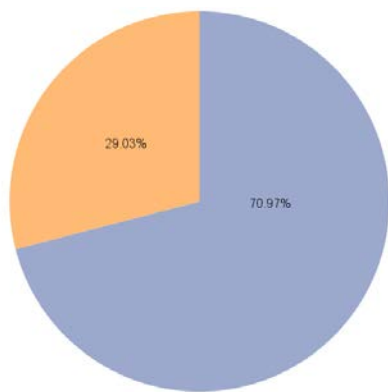


Chart 43: Following regulations- land use & development control

Source: Author (2020)

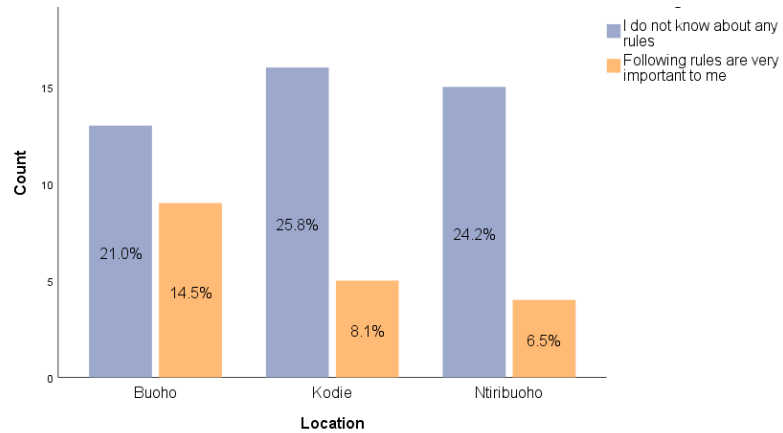
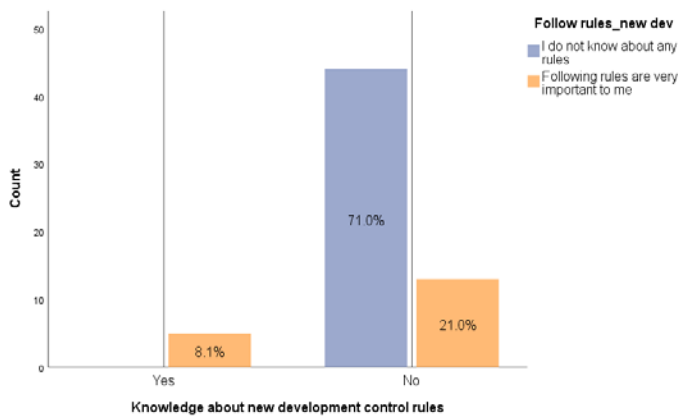


Chart 44

Customary authorities from all three locations stated that community inclination towards following rules is from average to good.

A Crosstabulation is done among the knowledge of respondents and their understanding about following regulation. Pearson Chi2 test is run to test the statistical association. The p value is 0.00 which is less than 0.05 (if p value is less than 0.05 then the two variables have statistically significant association) (See annex 4). Chart 44 also depicts that association. all respondents with regulation knowledge (8%) thinks following rules are very important. Even 21% respondents who don't have the knowledge opted for the importance of following regulations.



ChaChart 45

Source: Author (2020)

Variable summary:

To summarize the comparisons between three sites, it is found that in Buoho the community (household respondents) want more green land use for their neighbourhood than Kodie and Ntribuoho. They are also more inclined to following regulations than the other two locations. However, based on above findings from the interviews and literatures, it is noticeable that

community preference regarding land use plays non-significant roles for customary authorities in their decision-making process.

Considering the data collected through all respondents of the survey, interviews and observations of the R/A s, it is concluded that overall community and authorities both think there should be more buildings and infrastructures than the current land-use they have in their neighbourhoods. They (both authority and community) have very little knowledge about the land use regulations.

Lack of knowledge impacts the community inclination to follow regulation. As most respondents do not have knowledge, it is more likely that they do not consider following regulation important.

From the literature and collected data, it is also found that customary authorities think the chiefs holds the decision-making role for new developments over the state authorities because they are unaware of the state regulation, and they hold the power over customary lands. As they hold the power for new developments, customary authorities exhibited their lack of knowledge and negligence regarding involvement of government or state in the new development matter.

However, it is concluded from the findings that the **state authorities are concerned regarding the degradation of green space due to high urbanization but holds diminutive power to control developments in the customary lands**. The response from state authorities about decision-making process for new developments stated that it is a collaborative decision-making process between the chiefs and the state authorities, which demonstrates the state dependency on the customary authorities regarding this matter. **State authorities are more concerned about community members involvement** and mentioned the necessity of grand durbars (central gatherings /meetings of community with the chief) while the customary authorities are very negligence regarding community involvement regarding this matter.

4.4.2 Willingness to invest in built environment:

Willingness to invest in built environment is assessed by the respondents' willingness to develop buildings and infrastructures and the type of investments they are willing to provide for those developments.

a) Willingness to invest in developing built-environment

This sub-variable is measured through two indicators, new development preference of the community in the existing vacant land and their interest to invest for developing buildings and infrastructures.

(i) New development preference

Data collected from three locations regarding New development preference (Chart x) shows that, respondents from Buoho prefers less built environment development (10%) among three locations. The upper labels in **chart 45** shows the count of responses per location. Among three locations, Kodie has most respondents (18%) preferring buildings development. labels in **chart 46** also shows the count of responses per choice per location, it was a multiple response question, so respondents could select as many options as possible.

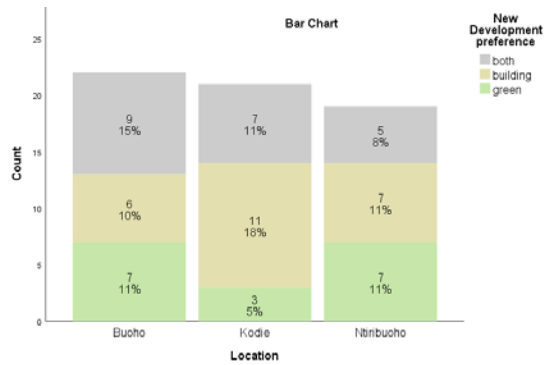


Chart 47

Source: Author (2020)

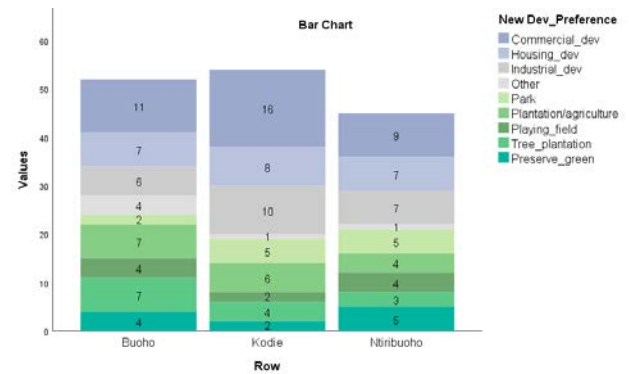


Chart 46

From overall respondents, 38.71% prefer buildings and infrastructures as new development and 33.07% preferred both buildings and green (see chart 47). The respondents were asked to specify their development preferences through multiple selection options. Chart 48 present the percentages of responses for each category. Commercial development has the highest preference (23.8%) among the 57.6% response for development of buildings and infrastructure. For other developments (4%), respondents mentioned community centre, police station and health facilities.

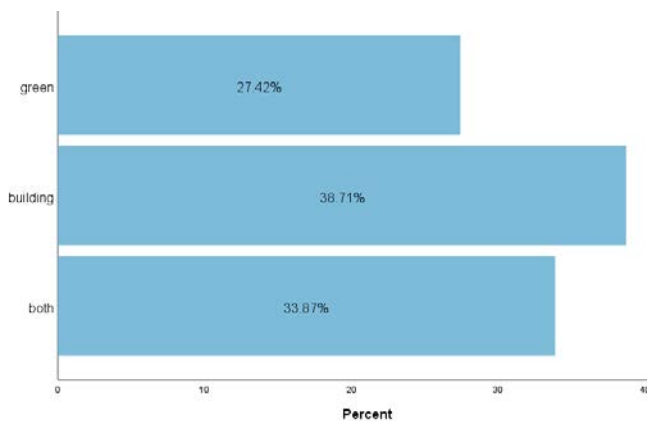


Chart 48

Source: Author (2020)

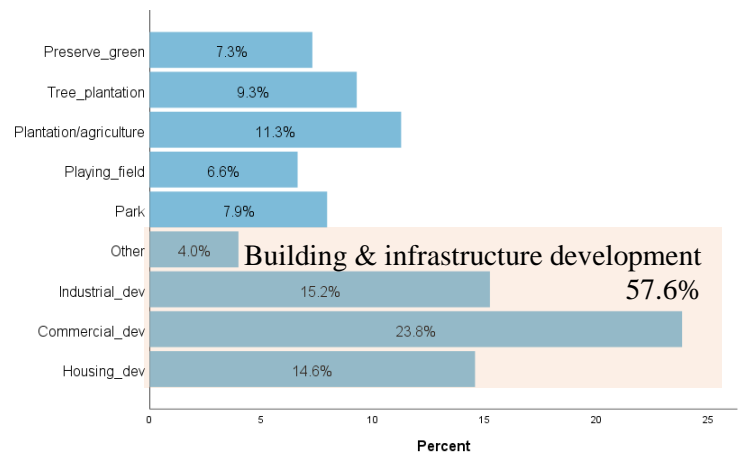


Chart 49

V

(ii) Interest to contribute in increasing buildings and infrastructure

All household Respondents were asked about their interest investment in housing, commercial and industrial developments. Chart 49 demonstrates that commercial development got highest interested respondents ratio (60% interested, 40% not interested), while for housing and industrial development the ratio is 37% interested and 63% not interested.

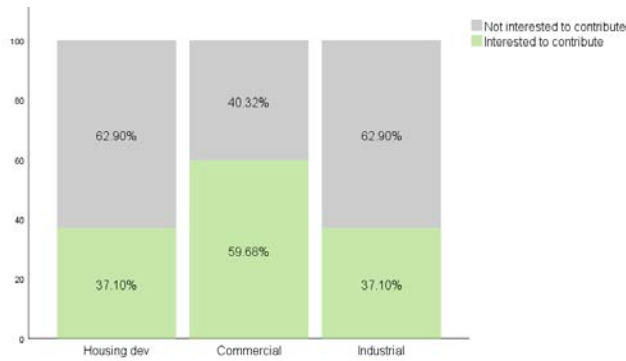


Chart 50

Source: Author (2020)

Among three locations, Kodie has the highest count from respondents who are interested to invest in built environment developments (chart 50). Asking for the investment interest was also a multiple selection question, so respondents could express investment interest for multiple options.

Location	\$built		
	Commercial Count	Housing dev Count	Industrial Count
Buoho	12	8	7
Kodie	16	7	8
Ntiri buoho	9	8	8



Chart 51

Source: Author (2020)

Findings from interviews show that state authorities acknowledged the community involvement in the decision-making process for infrastructure development is very minimal, however, they expressed their concern regarding the necessity of forming committee to strengthen the community input.

b) Willingness to invest in communal facilities:

This sub-variable is measured through two indicators, Investment Interest in increase in communal infrastructure and services and Investment Interest in increase in communal amenities.

(i) Investment Interest in increase in communal infrastructure and services:

Chart 51 presents the condition of communal infrastructure and services in all three locations, percentage of contribution all respondents already made for each infrastructure and/or service, percentage of respondents' willingness to invest for the increase in these infrastructures and services. Chart shows that condition of road is bad in general among the four services and that explains the highest willingness to invest ratio for roads (77% interested to contribute, 23% not interested). Other services have high willingness to invest ratio as well.

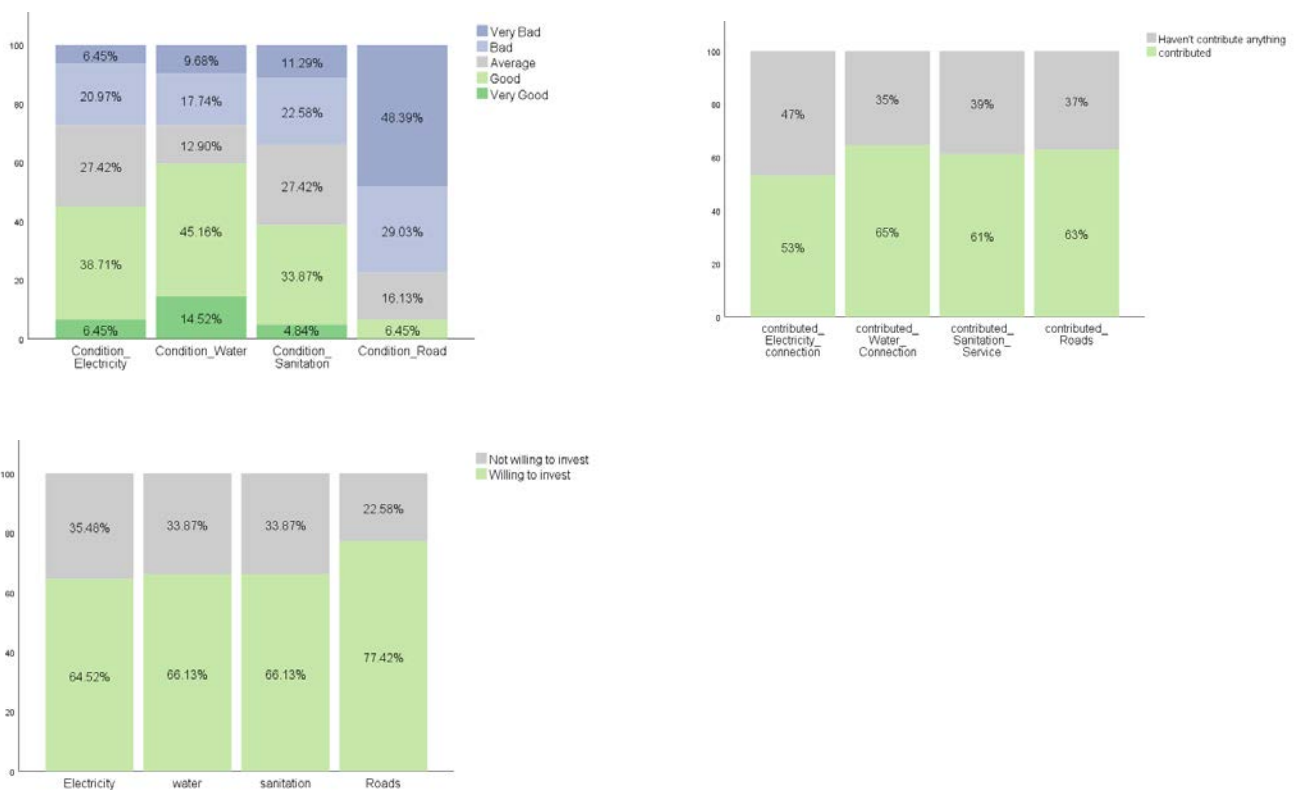


Chart 52

Source: Author (2020)

Among three locations, Buoho has the highest count from respondents who are willing to invest in communal infrastructure and services (chart 52). This was also a multiple selection question, so respondents could express their investment interest for multiple options. Although according to the condition per location, it was found that Buoho has comparatively good infrastructure condition among three sites.

Location	Electricity	Roads	sanitation	water	Total
	Count	Count	Count	Count	Count
Buoho	17	15	15	15	62
Kodie	12	17	13	14	56
Ntribuoho	11	16	13	12	52

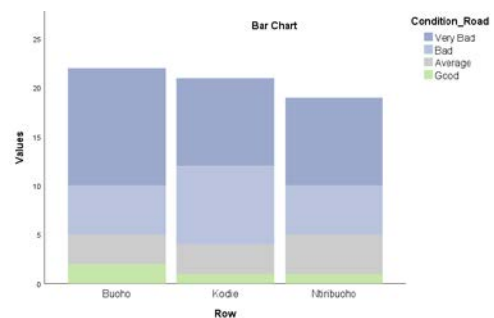
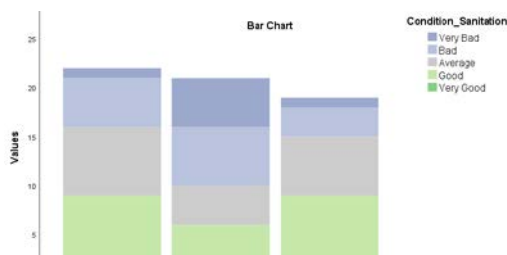
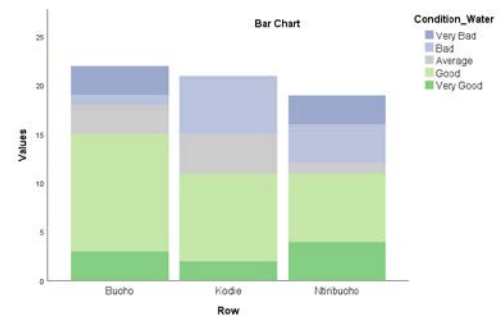
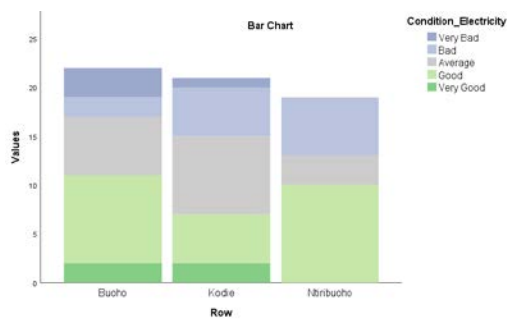
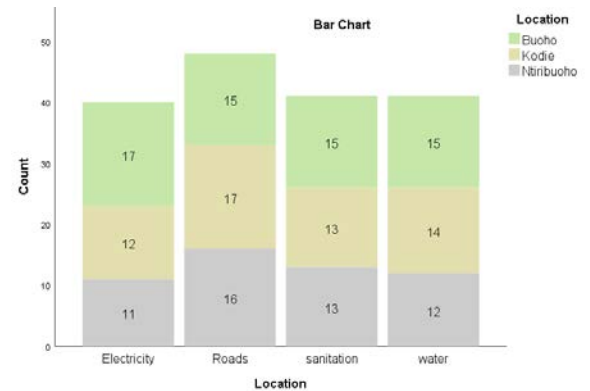


Chart 53

Source: Author (2020)

The Customary authorities were asked about the condition of their neighbourhoods' infrastructures. Finding from Buoho and Kodie is that the condition is good to average. However, findings from Ntribuoho stated that condition of electricity connection and road condition is very bad.

(ii) Investment Interest in increase in amenities:

Chart 53 (a-d) presents the condition of communal amenities in all three locations, percentage of contribution all respondents already made for each amenities, percentage of respondents' willingness to invest for the increase in these amenities.

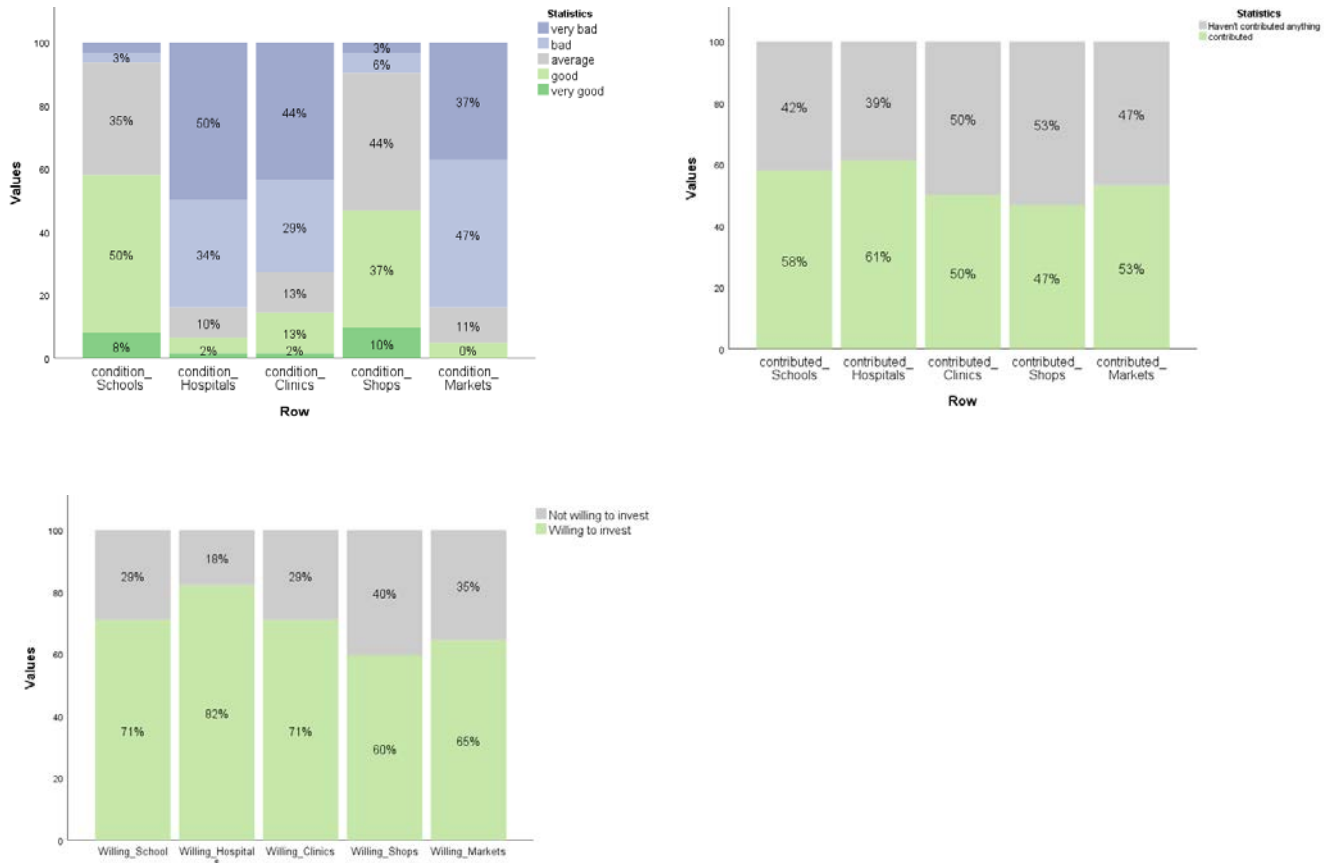


Chart 54

Source: Author (2020)

Among three locations, Kodie and Buoho has the highest count from respondents who are willing to invest in communal amenities (chart 54). This was also a multiple selection question, so respondents could express their investment interest for multiple options.

Location	Willing_ amenities					Total Count
	Willing_School Count	Willing_Hospitals Count	Willing_Clinics Count	Willing_Shops Count	Willing_Markets Count	
Buoho	17	19	16	12	13	77
Kodie	14	17	15	15	17	78
Ntribuoho	13	15	13	10	10	61

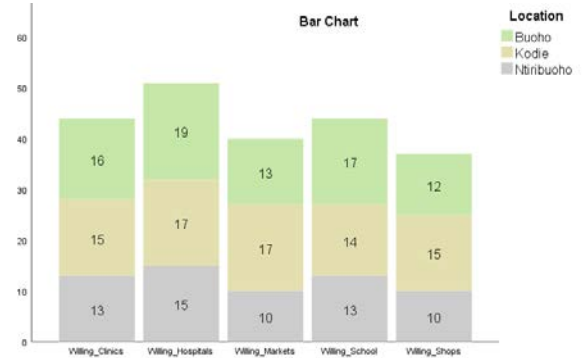


Chart 55

Source: Author (2020)

The condition of health amenities in Buoho and Ntribuoho is very bad, authorities and communities of these locations said that. However, even with bad amenity condition, Ntribuoho has the least response count among the three sites.

c) Type of investment interest in built environment

Chart 55 shows that people are most willing to invest different type of contributions to commercial developments (17.74% financial, 19.35% knowledge, 9.68% skill and labour). Although for housing development, respondents voted for highest financial contribution (30.65%).

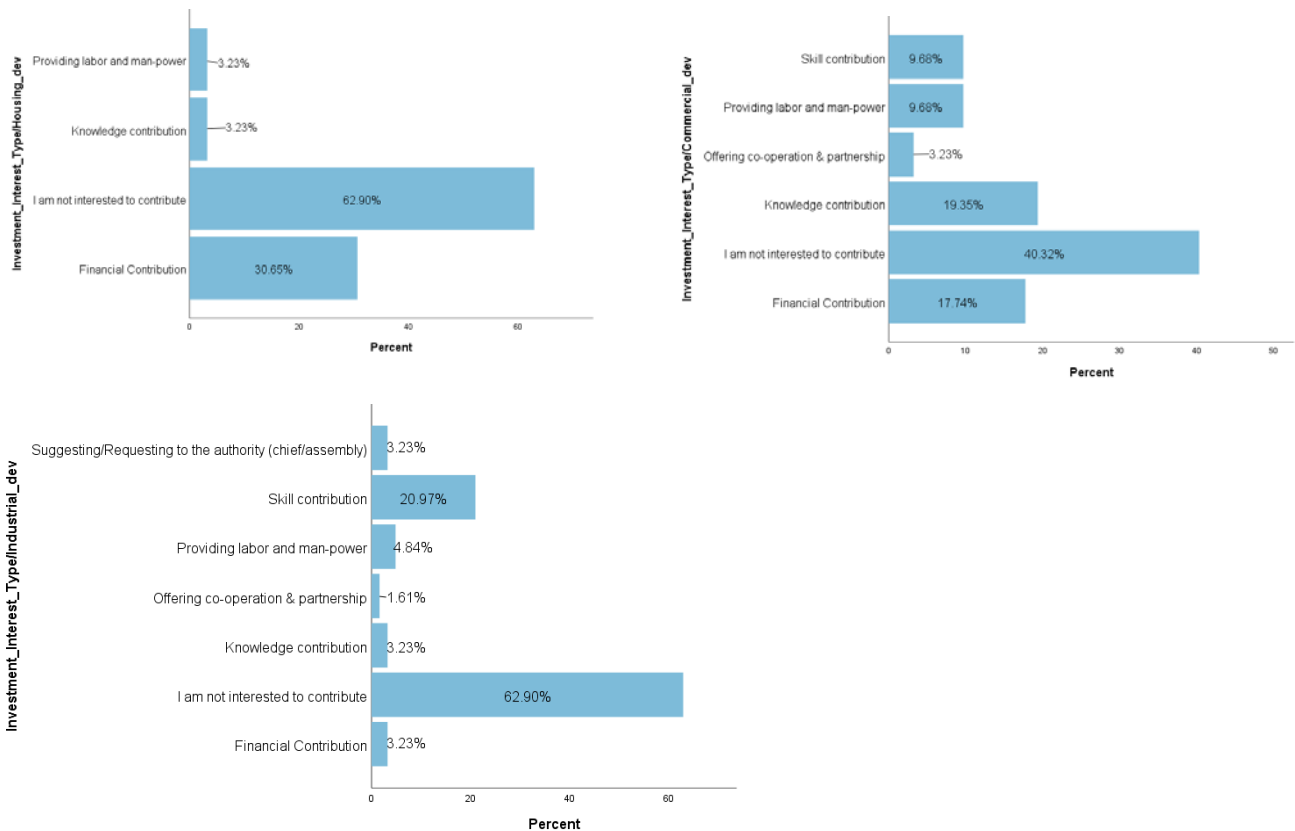


Chart 56: investment interest type for the new developments

Source: Author (2020)

The higher number of contribution interest supports the highest preference for commercial development as new development preference by the respondents (see chart 4.x and 4.x). Findings from variable “Willingness to invest in built environment” supports findings from “Community perception about Land use” which presents 46.77% respondents has voted there should be more building and infrastructure.

From the data collected through the interview, Sub-chiefs were asked about the responsible authorities for communal facilities. All respondents said it is state's responsibility, but the chiefs are involved in the decision-making process. They were asked about the supervision process of communal facilities and if community is involved. From the collected data, it is found that assembly members of the community usually do the supervision of these services. Each community has representative in the assembly to co-ordinate decision making issues with state authority and customary authority. Stool-land officers are considered assembly members. (refer from Land administration project Ghana). Regarding community involvement, conflicting responses among the sub-chiefs and stool land officers. While the sub-chiefs claimed good community involvement in the decision making process, stool land officers said community has minimum involvement due to the absence of a formal community committee to represent communal spirit. Observations of R/As confirmed communal initiatives are common for solving communal service issues.

Variable summary:

From the data presented above, it is found that overall Community and authorities prefer built environment development in the vacant lands. This finding reflects the findings from 'community perception about land use'. As the perceived land use balance for them is more building, their preference for new built environment development is higher. Although, the invest interest for such development is not high. Highest preference for commercial development and highest investment interest for that because new developments are also economy oriented. Peri-urban areas are becoming the commercial centers of the newly developed industries there (akrofi 2011a). commodification of land encourage this land use conversion decisions found in multiple literature and discussed in literature review while developing conceptual framework.

From overall responses in all three locations, it is concluded that community has more investment interest in communal infrastructures, services and amenities compared to their investment interest for new built environment development. This is because of the requirement of services, as these neighbourhoods lack proper infra which is a result of rapid land use conversion. As discussed in chapter 2, poor infrastructure condition is a result of the rapid peri urban development. Several literatures conferred that the poor infrastructure conditions of the per-urban converted lands. Rapid urbanization and high demand for land influence the customary authorities to convert lands without proper service provision (Ubink, Janine Marisca, 2008a). New developments bring economic prosperity and development in the neighbourhood, but the daily life is not directly linked with it (**Garnett, 2012**). However, communal services are the basic needs and part of daily life. And due to the issues discussed in literature review (section: infrastructure development in the customary land), also the long process of authorization issues, communal involvement is quite common scenario. More investment interest for hospital because the health amenities are poor.

To summarize the case wise comparison, among the three locations, respondents of Kodie prefer more built has most willingness to contribute for built environment development.

Buoho community have highest investment interest rate for communal infrastructure increase among three sites. Although the infrastructure condition at Buoho is found better than the other

two sites according to the survey and interview data. So, it is concluded that infrastructure condition is not the motivation for the buho community for their willingness to invest in increasing these communal services. According to (Garnett, 2012), social networks and trust among the community members influence the informal management of urban commons through residential community associations. State authority said in bouho, community members are involved and welcome new projects warmly. the findings Ntribuoho, state authorities expressed their concern regarding less community involvement due to absence of strong communal tie and regular community meeting.

It has been found and discussed under the variable summary of property right and community perception on land use that customary authorities hold the power for any new development in the customary lands. However, from the findings of land use regulation it is concluded that when it comes to the infrastructures and service development, Customary authorities refuses their involvement and refer this as a “responsibility of the state”.

Investment interest type also varies according to type of development. It is found that For developments that can create more personal ownership, people offer financial, for housing development it is the highest one among all option for investment. For commercial or industrial, knowledge and skill is offered. This is same for infra and amenities, people are willing to contribute financially for electricity and school. For services like water and sanitation, they are found to be communal in the context of peri-urban Kumasi. Use of communal toilets, and communal source for fresh drinking water is a common practice (akrofi 2011b).

4.4.3 Willingness to invest in green environment:

Willingness to invest in green environment has been assessed by the respondents’ willingness to develop green areas, preserving green environment, the type of investment they are willing to provide for those developments and their contribution to green infrastructure.

a) Willingness to invest in developing green areas

This sub-variable is measured through two indicators, new development preference of the community in the existing vacant land and their interest to invest for developing green areas.

(i) New development preference

From overall respondents, 27.42% prefer green area development (see chart 56). For specific development preference, plantation/agriculture has the highest preference (11.3%) among 42.4% preference for green area development (see chart 57).

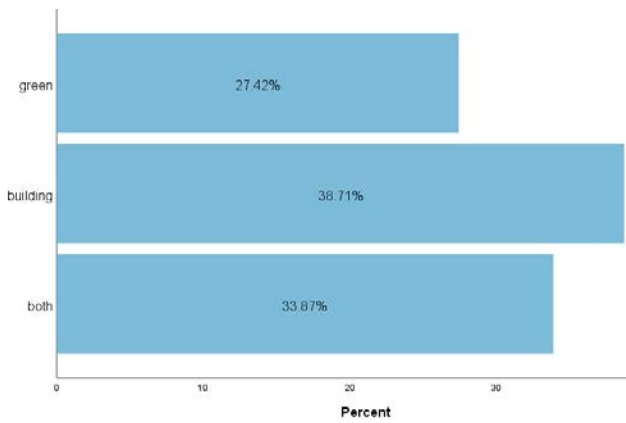


Chart 57

Source: Author (2020)

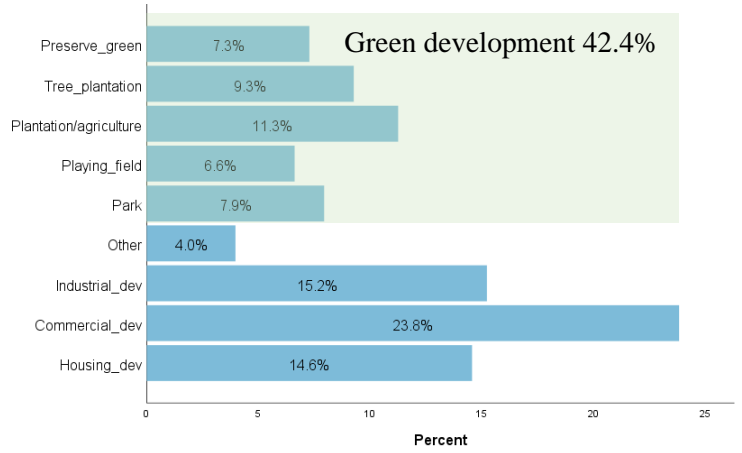


Chart 58

(ii) Interest to contribute in developing green areas:

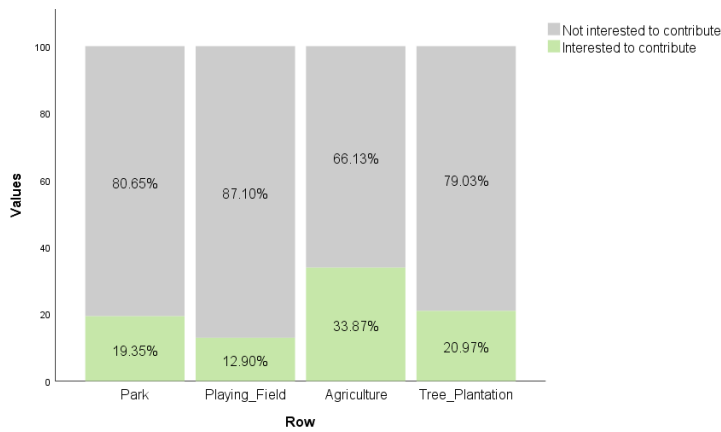


Chart 59

Source: Author (2020)

b) Willingness to invest in preserving green environment

(i) Residents’ understanding about existing green areas:

Char 59 shows respondents’ understanding about the importance of having existing green fields in their neighbourhood.

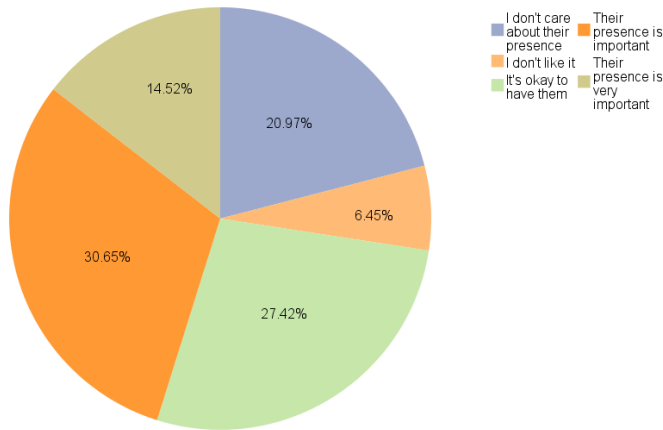


Chart 60

Source: Author (2020)

These responses were grouped in two values “having green areas are important” other group “having green areas are not important” for location wise analysis (see chart 60). Buoho respondents shows comparatively higher response rate (29%) in importance. Chi2 test shows no significance according to location.

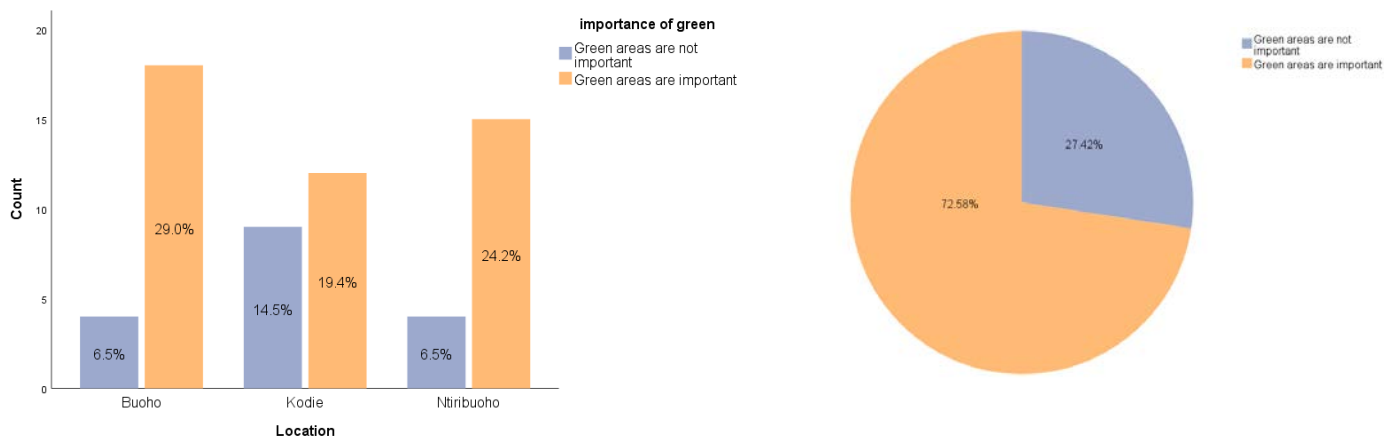


Chart 61

Source: Author (2020)

(ii) Investment interest in preserving green & (iii) Interest to contribute in preserving green environment:

Chart 61 shows that 46.2% respondents voted to preserve existing trees (highest preference) and 30.1% voted for preserving existing agricultural lands. Only 18.8% respondents voted not interested to contribute in preserving green environment while knowledge (24.8%) and Finance (15.6%) are the first two preferred contribution for preservation of existing green (chart 62). they were asked what type of green they want to preserve (preservation preference).

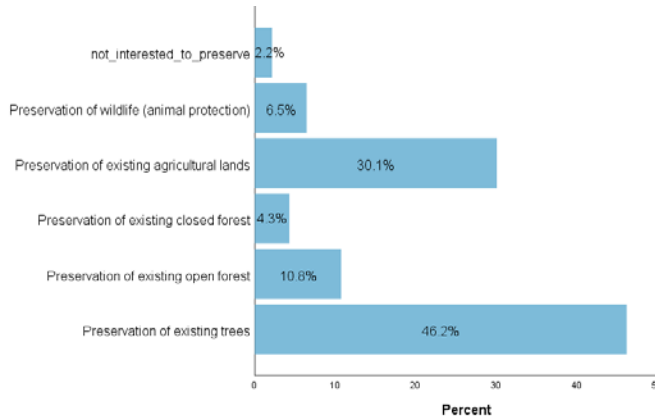


Chart 62

Source: Author (2020)

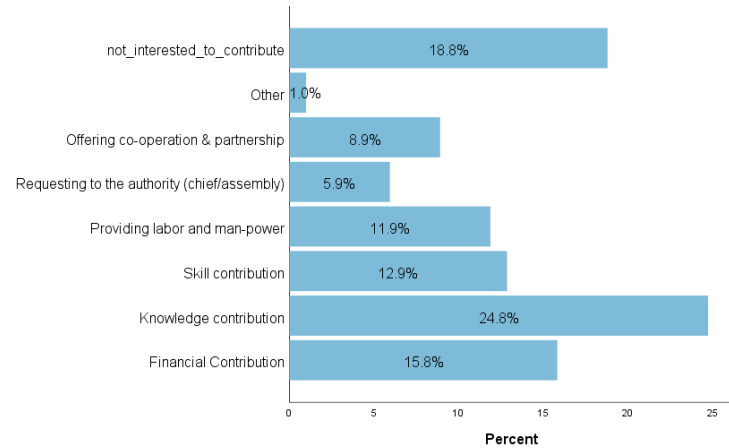


Chart 63

From the data collected through interviews, it came into the researcher’s attention that there are very few or almost no area to preserve within these neighbourhoods (study area). And the few existing ones are very valuable peri-urban land to preserve for green in the perspective of the decision making customary and state authorities. One respondent said during interview, “the community already lack such green areas, besides decisions regarding it’s preservation isn’t feasible”

c) Type of investment interest in Green environment

Chart 63 shows that people are most willing to invest different type of contributions for agricultural developments (13.6% suggestion to authority, 9.2% co-operation and partnership, 6.2 % labour, 3.1% skill and finance). Chart 4.x also presents type of investment respondents are willing to contribute for tree plantation and developing park & playing fields.

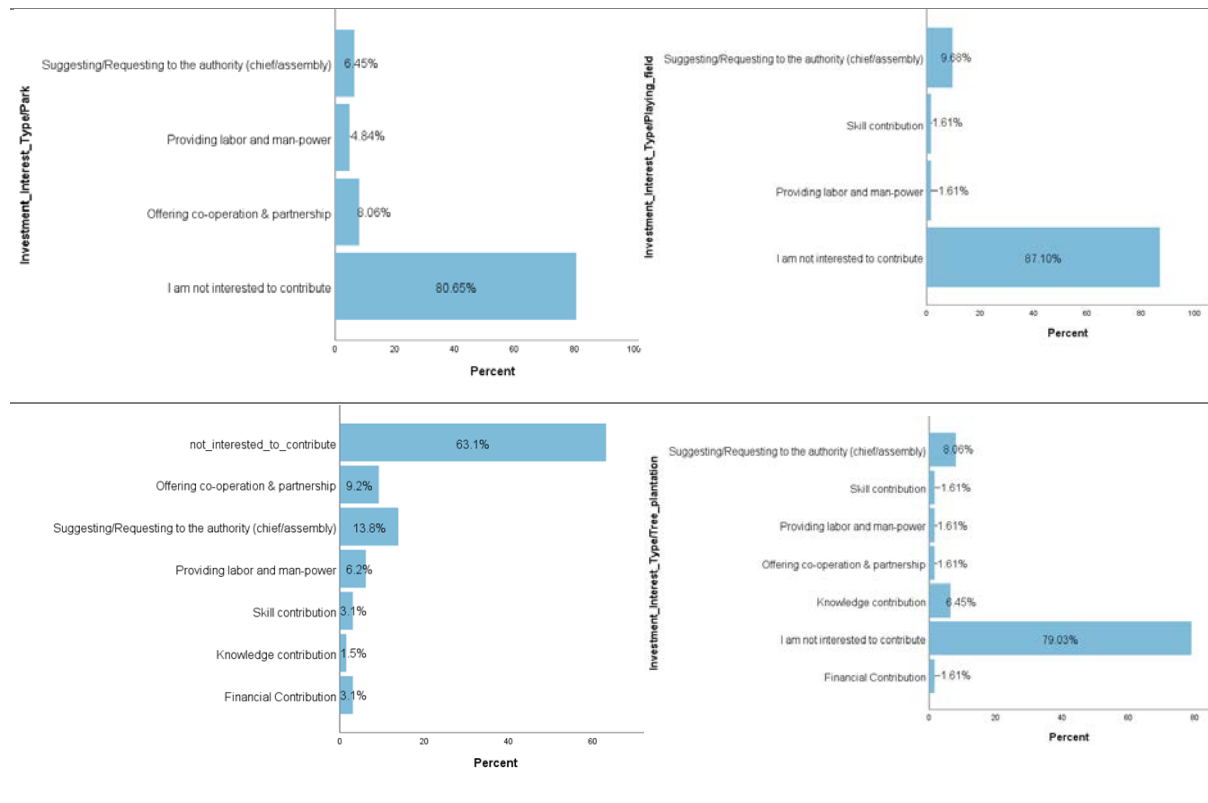


Chart 64

Source: Author (2020)

d) Residents' contribution in green infrastructure:

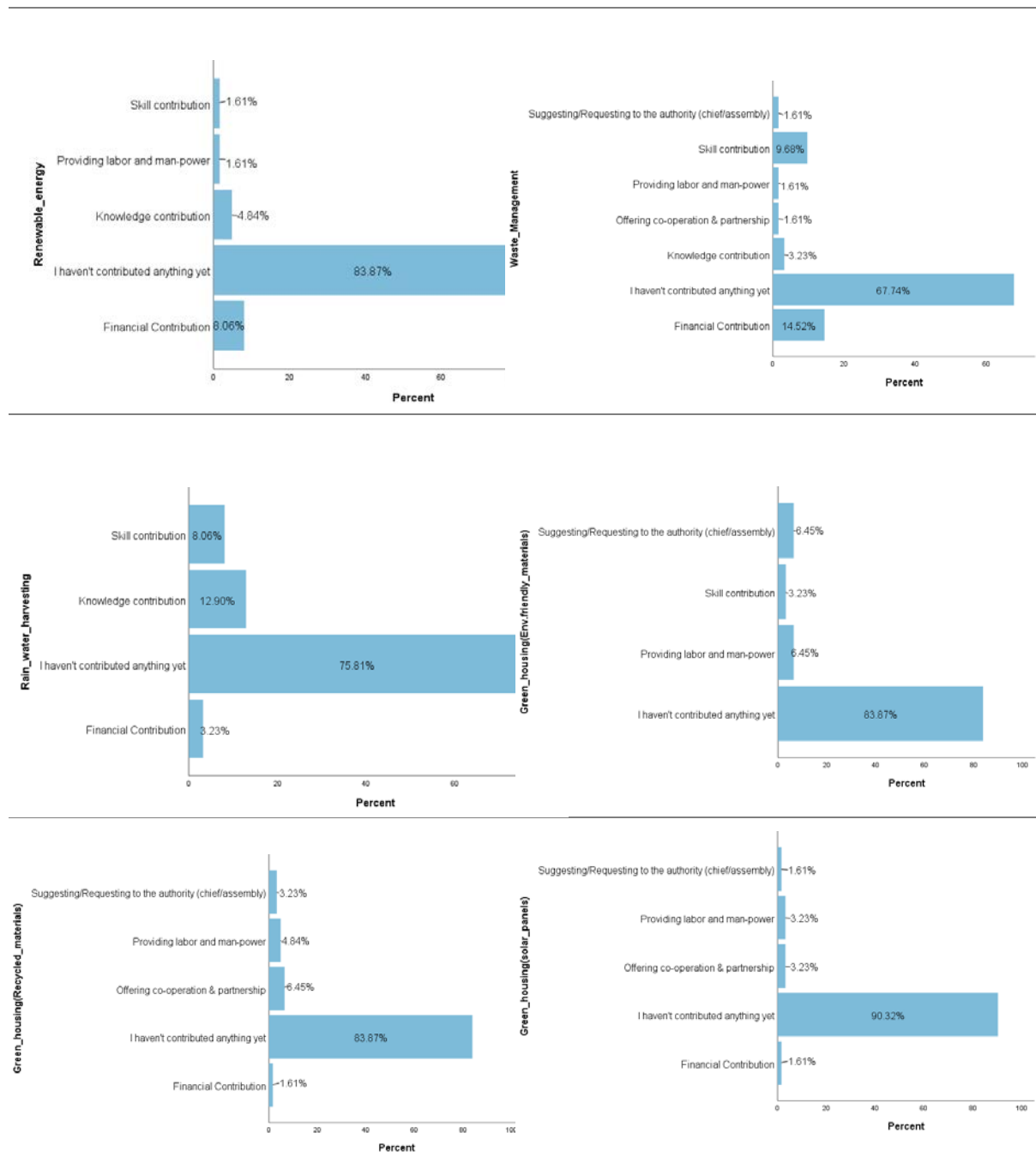


Chart 65

Source: Author (2020)

Variable summary:

Findings from this variable confirms the finding from the last two variables, overall community and authority prefer less green environment development to built env. Among the few respondents interested to invest green environment development in vacant land, agriculture is the most preferred.

After their reluctance for new green development, the findings about importance of existing green, is that majority thinks it is important to have them. Community investment interest is higher for preserving green rather than green development preference is because of the difference in type of investment they are offering? Also, the investment interest in preservation is focused on forest and trees. Information with one authority revealed People has an idea that planting tree is enough for ensuring green he said “there aren’t any green, unless people decide to plant some trees in their own land”. also, people are interested to contribute for agricultural land and tree plantation, not for park or playing fields that will take away a chunk of their valuable land.

Buoho has highest response rate regarding importance of existing green in the neighbourhood. Although the authorities claimed there are very few green lefts in the neighbourhood. Buoho community prefer more green area development compared to the other two sites, but in general preference rate is still higher for mixed (both built and green) development.

4.5 Association of perceived property rights and obligations (IV) with community willingness to invest in achieving balanced land use (DV):

This section first elaborates the Statistical Association between the independent variable and dependent variable. Following section presents the association found through the qualitative data collected through interviews, observations of the R/As and literatures and reports.

4.5.1 Statistical Association:

First the association of perceived property rights and obligations (IV) with community perception on existing land use is described, then with the willingness to invest in built and green environment.

Association of perceived property rights and obligations with community perception on existing land use:

community perception on existing land use is measured through three sub variables. Residents' opinion about existing land use, (ii) Resident's knowledge about the legal regulations, Resident's Understanding about following the regulations

Ordinal regression analysis is done to test the effect of independent variables on the dependent variable: Residents' opinion about existing land use (ordinal data). As a model it doesn't have direct impact on Residents' opinion about existing land use. No significant association was found.

Pearson's chi2 (χ^2) statistical test is used to test the association between Individual variables (Table 4.x). Cross-tabulation bars in table 4.x shows that for the sub-variable community status, more indigenous people are in favor of development of building and infrastructure, which is found in the years of residency as well. As most indigenous people are living there for over 15 years, highest preference for buildings is found in that year group.

Residents' opinion about existing land use

	Should be more green areas	Should be more buildings	balanced
--	----------------------------	--------------------------	----------

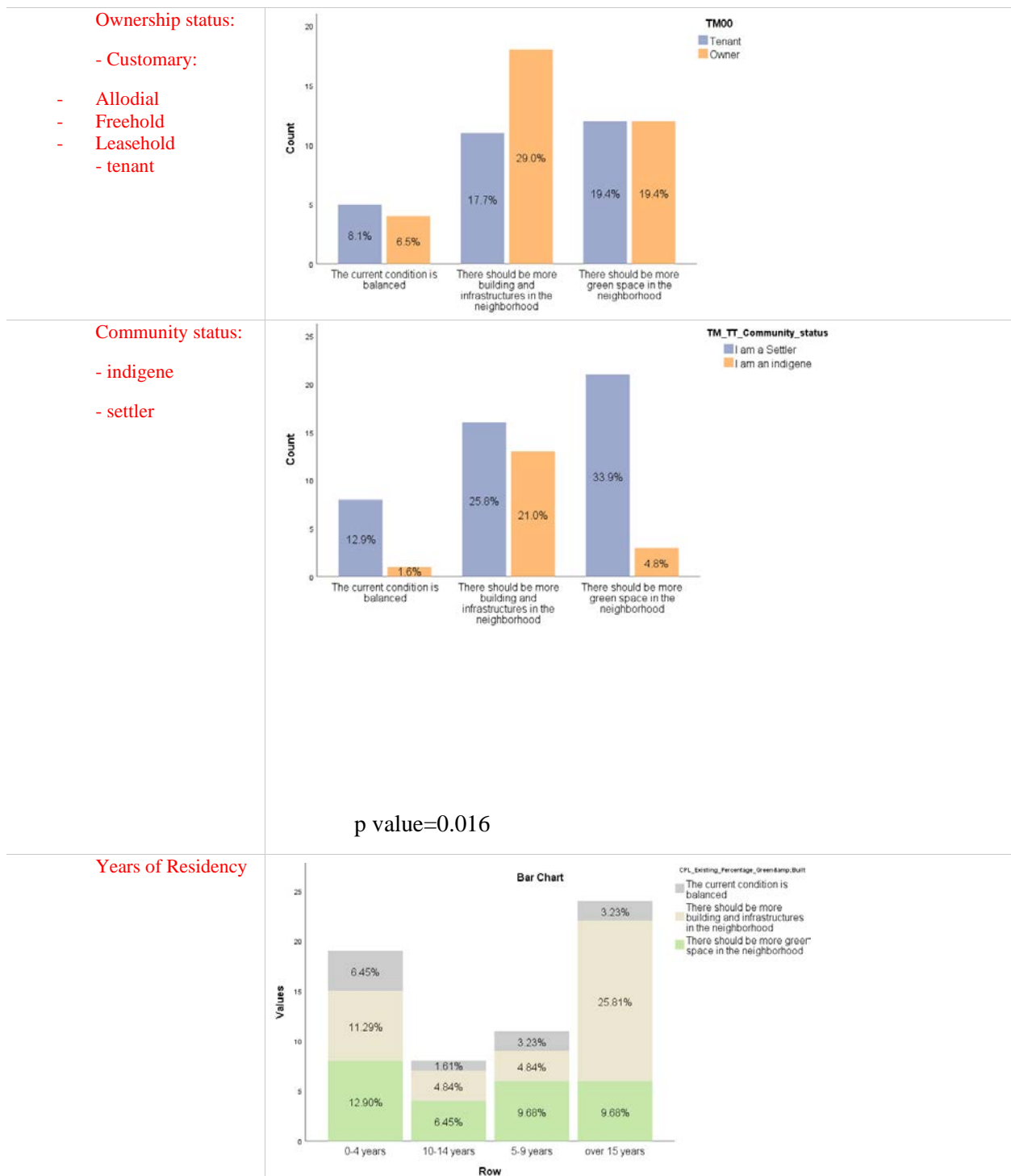


Chart 66

Source: Author (2020)

Cross-tabulation with the documentation of property (IV: Property rights) and knowledge of regulation shows significant association. The respondents who have knowledge about regulations, have documents for their land and house.

Independent variables	Resident's knowledge about the legal regulations:					P value																													
Documents for land	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2"></th> <th colspan="3">PR02_Land_doc</th> <th></th> </tr> <tr> <th colspan="2"></th> <th>No document</th> <th>Has document</th> <th>Tenant</th> <th>Total</th> </tr> </thead> <tbody> <tr> <th rowspan="2">CPL3An</th> <th>No</th> <td>10.5%</td> <td>40.4%</td> <td>49.1%</td> <td>100.0%</td> </tr> <tr> <th>Yes</th> <td></td> <td>100.0%</td> <td></td> <td>100.0%</td> </tr> <tr> <th colspan="2">Total</th> <td>9.7%</td> <td>45.2%</td> <td>45.2%</td> <td>100.0%</td> </tr> </tbody> </table>							PR02_Land_doc						No document	Has document	Tenant	Total	CPL3An	No	10.5%	40.4%	49.1%	100.0%	Yes		100.0%		100.0%	Total		9.7%	45.2%	45.2%	100.0%	0.037 *
		PR02_Land_doc																																	
		No document	Has document	Tenant	Total																														
CPL3An	No	10.5%	40.4%	49.1%	100.0%																														
	Yes		100.0%		100.0%																														
Total		9.7%	45.2%	45.2%	100.0%																														

Chart 67

Source: Author (2020)

summary, significant association between knowledge and following rules was found for development control regulation.

Association of perceived property rights and obligations with community willingness to invest in built and green environment:

- (i) Association with development preference

Ordinal regression model shows significant effect of years of residency on the opinion about development. Although the increase in number of years don't show consistency in preference, maybe due to limited sample size in those two categories (4-9 years and 10-14 years). Cross-tabulation bars in table 4.x shows that for the sub-variable community status, more indigenous people are in favor of development of building and infrastructure, which explains the association of years of residency as well. As most indigenous people are living there for over 15 years.

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	88.464			
Final	70.251	18.214	8	.020

Link function: Logit.

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	52.116	42	.136
Deviance	47.504	42	.258

Link function: Logit.

Pseudo R-Square

Cox and Snell	.255
Nagelkerke	.287
McFadden	.135

Link function: Logit.

(model fitting value is less than 0.05 that means significant difference between baseline model and final model, and goodness of fit is more than 0.05)

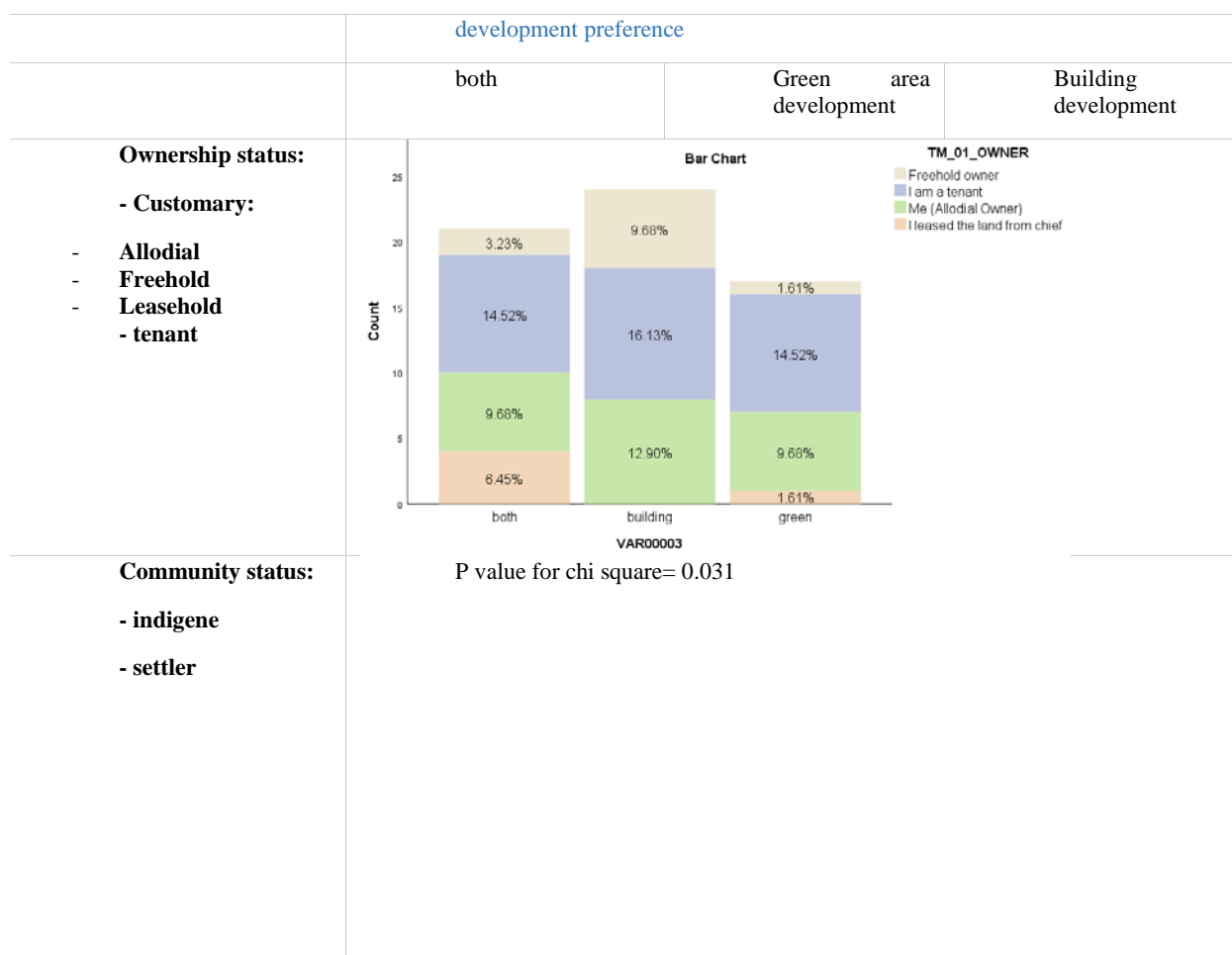
Parameter Estimates

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	[VAR00003 = 1]	3.308	1.761	3.529	1	.060	-.144	6.760
	[VAR00003 = 2]	5.325	1.822	8.541	1	.003	1.754	8.896
Location	TM_02_COMMUNITY	1.203	.852	1.991	1	.158	-.468	2.873
	COPO2_obligation	-.223	.575	.150	1	.699	-1.351	.905
	[TM_01_OWNER=1.00]	1.891	1.383	1.869	1	.172	-.820	4.603
	[TM_01_OWNER=2.00]	1.045	1.305	.642	1	.423	-1.512	3.602
	[TM_01_OWNER=3.00]	1.304	1.291	1.020	1	.312	-1.226	3.834
	[TM_01_OWNER=4.00]	0 ^a	.	.	0	.	.	.
	[TM_03_YEARS=1]	1.931	.934	4.275	1	.039	.101	3.762
	[TM_03_YEARS=2]	3.837	1.127	11.598	1	.001	1.629	6.045
	[TM_03_YEARS=3]	2.478	1.028	5.816	1	.016	.464	4.493
	[TM_03_YEARS=4]	0 ^a	.	.	0	.	.	.

Link function: Logit.

a. This parameter is set to zero because it is redundant.

Separate chi2 test is also run to test individual association of community status and new development preference and is found significant.



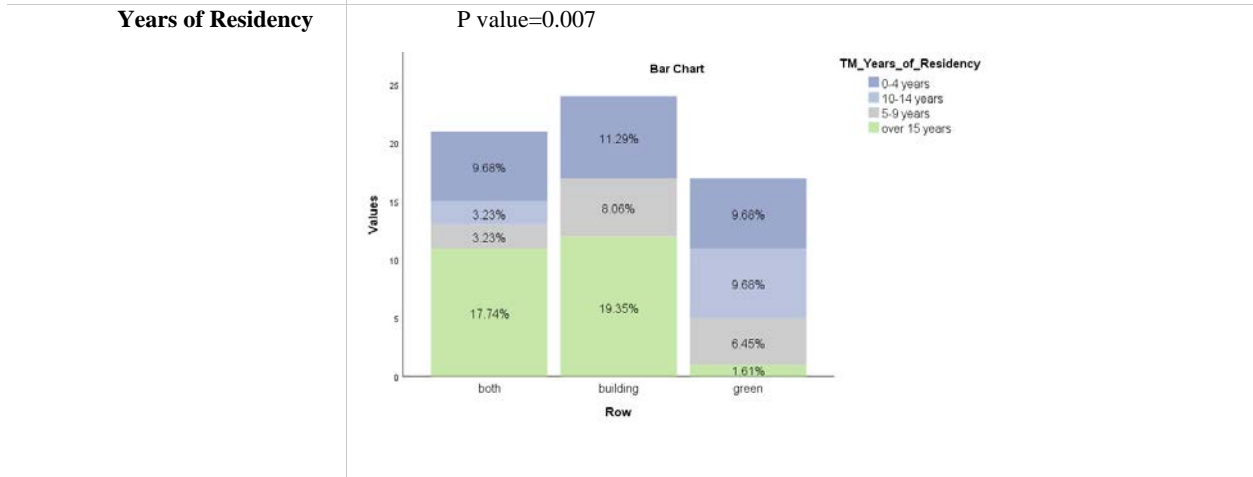
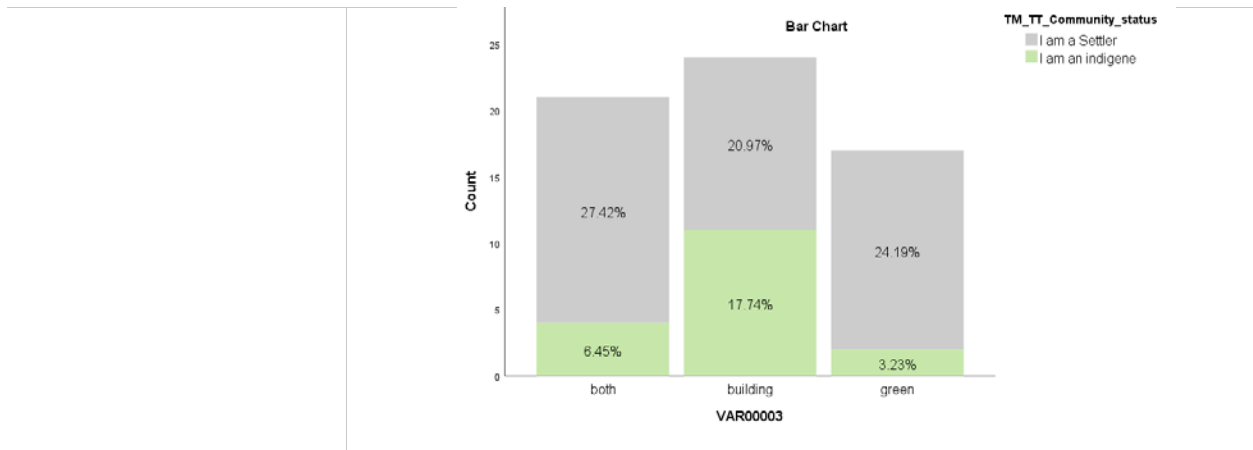
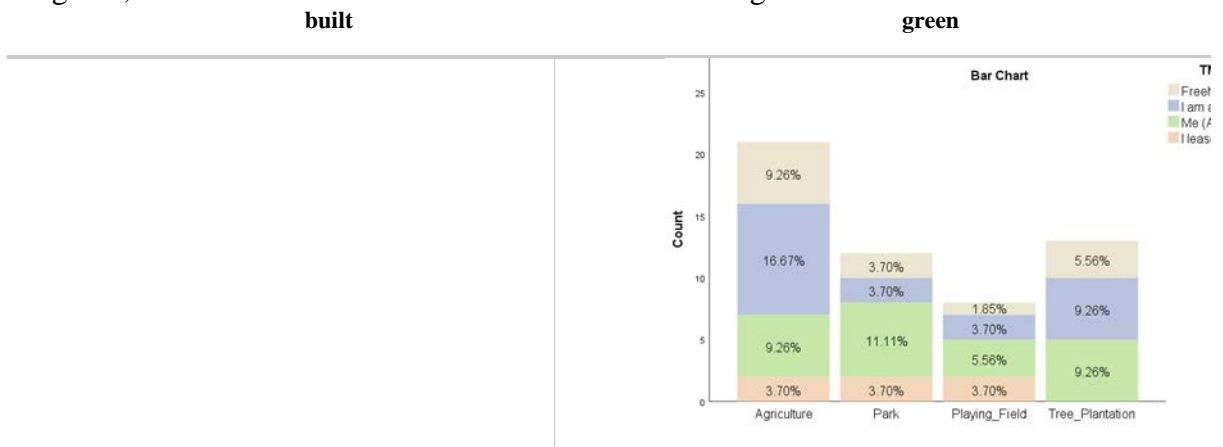


Chart 68

Source: Author (2020)

(ii) Association with investment interest in built and green area development

For built dev investment no significant change among owners and renters was found. However, for green, more tenants voted for contribution interest in agriculture.



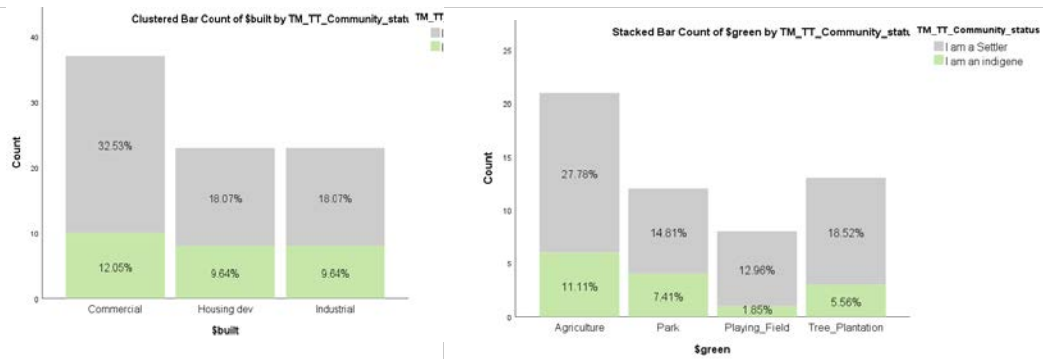


Chart 69

Source: Author (2020)

(iii) Association with investment interest in green area preservation

Although there are no significant changes in response to the investment interest for new developments (built and green). Statistical significance is found with community status and green area preservation. More than 80% respondents among settlers voted for the importance for green areas and interested to preserve the green (agricultural land, forest, trees etc)

With community status $p=0.006$

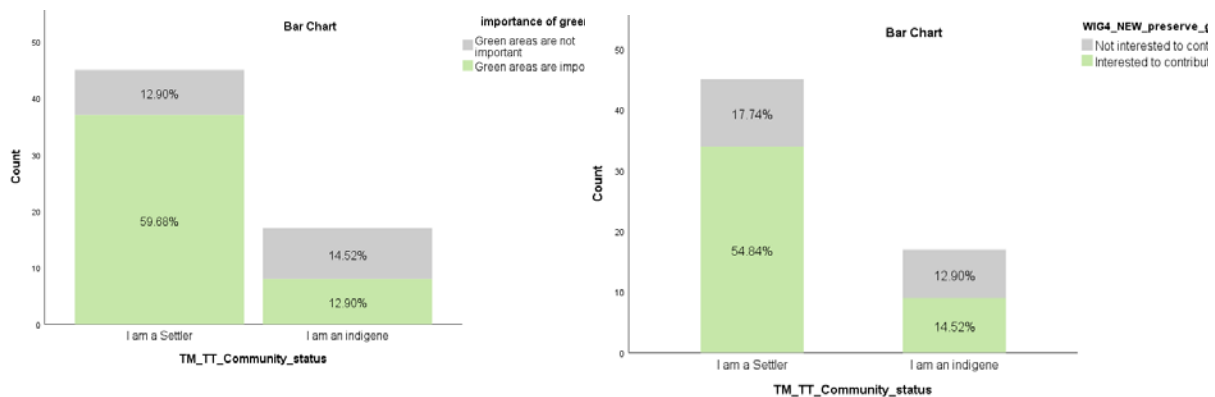
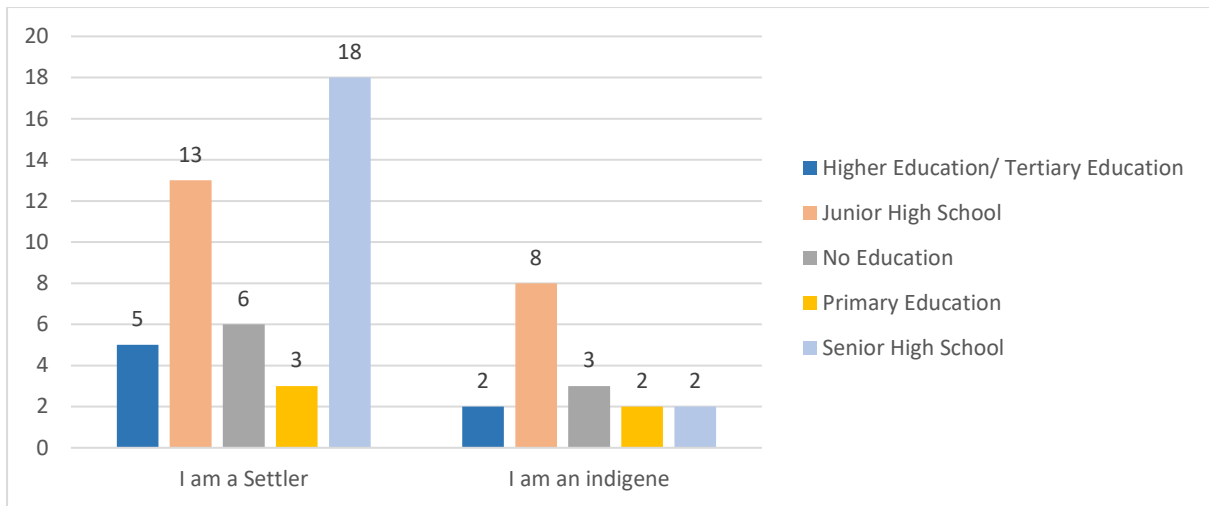


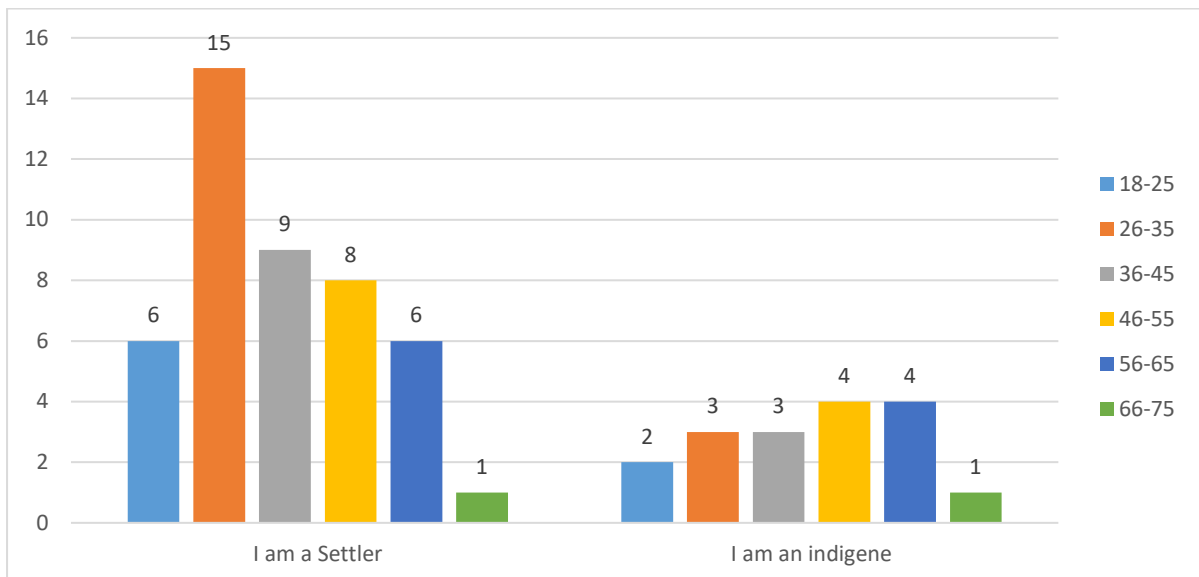
Chart 70

Settlers are educated compared to indigene respondents.

Source: Author (2020)



Also, settlers have more young respondents compared to indigene that has impact on their investment decisions.



4.5.2 Qualitative data:

Chapter 5: Conclusions

5.2. Conclusions

5.2.1 Research sub-question 1 and 2

What are the legal and perceived property rights of the indigenous community?

What are the legal and perceived obligations based on the legal and perceived property rights?

Most Respondents have documentation for their land and property(house). However, it can be concluded from their response that they don't have distinct idea about their rights that comes with the certain form of ownership. People pay property taxes and lease rents for their land, also pay service charges for communal services. But it is evident from their responses that they are not clear about to whom they are paying for. Although payment for property is a part of obligation that comes with the property right, and people are paying, 90% respondents said they do not feel any obligation for owning property when they were asked about their perception of obligation. This presents the unawareness of the respondents regarding the property rights and obligations. They are following their duties without being aware it.

From the interviews and literatures, it is also evident that customary authorities have ambiguous ideas about the entitled rights and duties of the customary land owners under their jurisdictions. Both the community and customary authority talk about "buying" while this is not allowed in the customary tenure where land is considered as sacred. Also the lack of knowledge regarding the rights of the owners encourage them making rapid decision regarding these lands without even consulting the current owners. That in terms create insecure tenure ship for the owners.

5.2.2 Research sub-question 3 and 4

What is the perception of the local community about the sustainable balance between green open space and built environment?

In what ways are they interested/willing to invest in achieving their identified sustainable balance between green open space and built environment?

From the survey data it is found that community have conflicting perception while identifying the sustainable balance between green open space and built environment. While most has selected for buildings as new development preference over green areas and thinks more buildings and infrastructure will be good for current land-use, 80% answered in favour of the importance of having green.

They are reluctant to develop and contribute for new green areas in the vacant lands, although almost everyone (except on 2.5%) is interested to preserve the existing green (agricultural lands, forest, trees, wildlife) and interested to contribute for the preservation. So, if there is a vacant green land with possibility of development, people prefer building and infrastructure development. But the lands designated for agriculture, plantation and forest, people are willing to preserve.

Type of investment interest varies according to the preference for built or green environment as well. Most respondents are willing to invest in communal facilities in comparison to their investment interest for either built or green area development. Finance, knowledge and skill contribution was offered to preserve green (agriculture, forest, trees, wildlife), while for suggesting to the authority was the most selected ones for new green area developments (parks, playing fields, agricultural fields).

5.2.3: Main research question

In the context of peri-urban Kumasi, to what extent does the perceived property rights and obligation of the community affect their willing to invest in establishing a sustainable balance of the built environment and green open space?

From the analysis and findings from chapter 4, no direct association between the perceived property rights and obligation of the community and their willing to invest in establishing a sustainable balance of the built environment and green open space is found. However, Statistical association with ‘community status’ indicating building and infrastructure in both ‘perception of existing land use’ and ‘new development preference’ variable is found. This data is supported by the conducted interviews as well. This association is also found for preservation of green.

Note: Although community status is not statistically associated with the perceived bundle of rights and obligations, some association is found in literatures. I am still looking for concrete theoretical reference (if any) between customary community status and perception of property rights and obligations.

**** Please suggest if you have any literature suggestion regarding this.**

In addition to this, from the data collected through the interviews with the state authorities, they commented that individual ownership over land is helping the people make individual decisions that has an impact on the rapid degradation of green. As quoted from one interview, “individual ownership conditions have directly contributed to the loss of green areas since they clear such areas for building their properties”. People are becoming more individualistic regarding land and property than before. Land was always considered communal under customary authorities before.

However, it is also evident from the primary and secondary data that even though community have willingness to invest in land management, community is not the primary decision maker to establish a sustainable balance of the built environment and green open space. Customary authority is the primary decision maker regarding land development and has more control over the development process than the assembly.

5.3 Recommendations:

Recommendation for institutional arrangements:

1. Clarity about ownership condition and ensuring well demarcated bundle of rights are prerequisite to implement land-use planning successfully (**krabben**). Very few respondents have knowledge regarding the land-use regulations. Even customary authorities have lack of knowledge regarding state regulations concerning land development and land-use.

- Knowledge availability regarding Customary tenure ship in school and college level education.
- Formation of committee with community member or monthly meeting with community members regarding new development decisions can help preventing insincere individual decision regarding demolishing green. It can be the preliminary step towards hard implementation of development control rule.
- Awareness programs for all the members of customary authority is important because their lack of knowledge reflects on the community as they directly govern the community members.
- Give recognition to urban common goods and ensure resources by involving community to take care of them.

Recommendation for further study & for PBL

“In order to consider the role of property rights in general and land rights in particular, it is important to place these rights in the context of the overall institutional structure of the society and economy. There are three basic categories of institutions: constitutional order, institutional arrangements, and normative behavioral codes. The constitutional order and normative behavioural codes evolve slowly; institutional arrangements may be more readily modified.” (Feder).

- Further study about how these institutional arrangements impacts the individuals’ behavioural codes in the context of Ghana should be studied to implement land-use planning successfully as well.
- Further study on what factors directly impact the community willingness to invest in sustainable land management.

Bibliography

- Akrofi, E.O. and Whittal, J. eds., 2011a. Land for Peri-urban Infrastructure in Customary Areas: A case study of Kumasi, Ghana, Anonymous Available at: <https://search.datacite.org/works/10.13140/RG.2.1.4350.9600> .
- Akrofi, E.O. and Whittal, J. eds., 2011b. Traditional governance and customary peri-urban land delivery: A case study of Asokore-Mampong, Ghana, Anonymous Unpublished. Available at: <https://search.datacite.org/works/10.13140/RG.2.1.4056.0480> .
- Arko-Adjei, A., 2011. Adapting Land Administration to the Institutional Framework of Customary Tenure. Amsterdam: IOS Press, Incorporated. Available at: [https://ebookcentral.proquest.com/lib/\[SITE_ID\]/detail.action?docID=784611](https://ebookcentral.proquest.com/lib/[SITE_ID]/detail.action?docID=784611) .
- CE, 2000. European landscape convention-explanatory report & convention. Florence: Council of Europe.
- Cole, D. and Ostrom, E., 2010. The Variety of Property Systems and Rights in Natural Resources. doi: 10.2139/ssrn.1656418 .
- Durán Zuazo, V., Rodriguez, C., Flanagan, D., García-Tejero, I.F. et al., 2011. Sustainable Land Use and Agricultural Soil. doi: 10.1007/978-94-007-0186-1_5 .
- Fabricius, C. and Collins, S., 2007. Community-based natural resource management: governing the commons. *Water Policy*, 9 (S2), pp. 83-97 doi: 10.2166/wp.2007.132 Available at: <https://search.datacite.org/works/10.2166/wp.2007.132> .
- Feder, G. and Feeny, D., 1991. Land Tenure and Property Rights: Theory and Implications for Development Policy. *The World Bank Economic Review*, 5 (1), pp. 135-153 doi: 10.1093/wber/5.1.135 Available at: <https://search.datacite.org/works/10.1093/wber/5.1.135> .
- Gaisie, E., Poku-Boansi, M. and Adarkwa, K.K., 2018. An analysis of the costs and quality of infrastructure facilities in informal settlements in Kumasi, Ghana. *International Planning Studies*, 23 (4), pp. 391-407 doi: 10.1080/13563475.2018.1513359 Available at: <http://www.tandfonline.com/doi/abs/10.1080/13563475.2018.1513359> .
- Garnett, N.S., 2012. MANAGING THE URBAN COMMONS. *University of Pennsylvania Law Review*, 160 (7), pp. 1995-2027 Available at: <https://www.jstor.org/stable/41511325> .
- Hagos, F. and Holden, S., 2006. Tenure security, resource poverty, public programs, and household plot-level conservation investments in the highlands of northern Ethiopia. *Agricultural Economics*, 34 (2), pp. 183-196 doi: 10.1111/j.1574-0864.2006.00117.x Available at: <http://www.ingentaconnect.com/content/bsc/agec/2006/00000034/00000002/art00007> .

- Hess, C. ed., 2008. Mapping the New Commons, Anonymous Available at:
<https://surface.syr.edu/sul/25> .
- IBM SPSS software Webpage, IBM SPSS software . Available at:
<https://www.ibm.com/analytics/spss-statistics-software> .
- Jacobs, H.M., 2016. Private Property in Historical and Global Contexts and Its Lessons for Planning. In: Private Property in Historical and Global Contexts and Its Lessons for Planning. In: Public Interest, Private Property: Law and Planning Policy in Canada.
- Justice K., O. and Kevin B., O., 2010. Housing demand in the urban fringe around Kumasi, Ghana. *Journal of Housing and the Built Environment*, 25 (1), pp. 1-17 doi: 10.1007/s10901-009-9173-x Available at: <https://www.jstor.org/stable/41107490> .
- Krabben, E.v.d., 2009. A Property Rights Approach to Externality Problems: Planning Based on Compensation Rules. *Urban Studies*, 46 (13), pp. 2869-2890 doi: 10.1177/0042098009345537 Available at: <https://www.jstor.org/stable/43197944> .
- Lastarria-Cornhiel, S., 1998. Impact of privatization on gender and property rights in Africa. Madison, Wis: Land Tenure Center, Univ. of Wisconsin.
- Parker, P. and Johansson, M. eds., 2011. The uses and abuses of Elinor Ostrom's concept of commons in urban theorizing, Anonymous Available at:
<http://hdl.handle.net/2043/12212> .
- Payne, G., 2004. Land tenure and property rights: an introduction. *Habitat International*, 28 (2), pp. 167-179 doi: 10.1016/s0197-3975(03)00066-3 Available at:
[https://search.datacite.org/works/10.1016/s0197-3975\(03\)00066-3](https://search.datacite.org/works/10.1016/s0197-3975(03)00066-3) .
- Payne, G.K., 2002. Land, rights and innovation. London: ITDG Publishing.
- Peters, P.E., 2009. Challenges in Land Tenure and Land Reform in Africa: Anthropological Contributions. *World Development*, 37 (8), pp. 1317-1325 doi: 10.1016/j.worlddev.2008.08.021 Available at:
<http://dx.doi.org/10.1016/j.worlddev.2008.08.021> .
- Sarpong, G.A., 2006. IMPROVING TENURE SECURITY FOR THE RURAL POOR, GHANA – COUNTRY CASE STUDY . FAO.
- Semeraro, T., Aretano, R. and Pomes, A., 2017. Green Infrastructure to Improve Ecosystem Services in the Landscape Urban Regeneration. *IOP Conference Series: Materials Science and Engineering*, 245 pp. 082044 doi: 10.1088/1757-899X/245/8/082044 .
- Ubink, J.M. and Quan, J.F., 2008. How to combine tradition and modernity? Regulating customary land management in Ghana. *Land use Policy*, 25 (2), pp. 198-213 doi: 10.1016/j.landusepol.2007.06.002 Available at:
<http://dx.doi.org/10.1016/j.landusepol.2007.06.002> .

- Ubink, J.M., 2008a. In the land of the chiefs. Leiden: Leiden Univ. Pr. Available at:
http://bvbr.bib-bvb.de:8991/F?func=service&doc_library=BVB01&local_base=BVB01&doc_number=017659897&sequence=000003&line_number=0001&func_code=DB_RECORDS&service_type=MEDIA .
- Ubink, J.M., 2008b. In the Land of the Chiefs: customary law, land conflicts, and the role of the state in Peri-Urban Ghana. Available at:
<https://www.narcis.nl/publication/RecordID/oai:openaccess.leidenuniv.nl:1887%2F21154> .
- USAID, 2013. PROPERTY RIGHTS AND RESOURCE GOVERNANCE, Country profile GHANA.
- van Thiel, S., 2014. Research Methods in Public Administration and Public Management. 1. London: Routledge. doi: 10.4324/9780203078525 Available at:
<https://www.taylorfrancis.com/books/9780203078525> .
- Williams, A.M. and Shaw, G., 2009. Future play: tourism, recreation and land use. *Land use Policy*, 26 pp. S326-S335 doi: 10.1016/j.landusepol.2009.10.003 Available at:
<http://dx.doi.org/10.1016/j.landusepol.2009.10.003> .
- Woltjer, J., 2014. A global review on peri-urban development and planning. *Jurnal Perencanaan Wilayah Dan Kota*, 25 (1), pp. 1-16 doi: 10.5614/jpwk.2014.25.1.1 Available at:
https://www.openaire.eu/search/publication?articleId=dedup_wf_001::c5ebb1289628da73a1402813d72fd5c2 .
- Yin, R.K., 2003. Case study research. 5. edition. Los Angeles: SAGE. Available at:
<http://www.econis.eu/PPNSET?PPN=741081792> .

Annex 1: Questionnaire

Institute for Housing and Urban Development Studies (IHS) Erasmus University, Rotterdam, Netherlands

This questionnaire is part of an academic research. The information you provide will be used solely for academic purposes. Thank you in advance for your cooperation.

OK

Part A: General Information

Name of the respondent (optional):

Age

- 18-25
- 26-35
- 36-45
- 46-55
- 56-65
- 66-75
- over 75

Gender

- Male
- Female

Education

- Primary Education
- Junior High School
- Senior High School
- Higher Education/ Tertiary Education
- No Education

Occupation

- Businessman/Trader
- Driver
- Farmer
- Vendor
- Retired
- Unemployed
- Other (please mention what)

Please mention what other Occupation

Household Income Range (Monthly | Unit: Ghanaian Cedi) :

- 0-100
- 101-300
- 301-500
- 501-700
- 701-900
- 901-1100
- 1101-1500
- 1501-2000
- over 2000
- I don't want to disclose
- N/A

Location

- Kodie
- Buoho
- Ntiribuoho

Part B: Ownership Status

01. How many years have you been living here?

- 0-4 years
- 5-9 years
- 10-14 years
- over 15 years

02. How well-connected do you feel you are with your neighbors?

Bad Not good average Good Very Good

02. How well-connected do you feel you are with your neighbors?

-

03. Please select an option from bellow

- I am an indigene
- I am a Settler
- I am a temporary settler
- I am a transit settler
- I am a tenant

04. Who owns this land? / What is your ownership status?

- Me
- Freehold owner
- I leased the land from chief
- State owned
- I am a tenant

05. What type of document do you have for your land?

- Allocation paper from the chief
- Indenture paper
- Paper from the assembly (municipality/state)
- I do not have any document for my land
- Other document (please mention what)

Please mention what other document you have for your land

06. What type of document do you have for your house?

- I do not have a document for my house
- Building permission paper from the assembly (municipality/state)
- Permission paper from the chief
- Rent contract with the home owner
- Other Document (please mention what)

Please mention what other document you have for your house

07. Do you have other property in this neighborhood?

- I do not have any other property in this neighborhood
- Vacant green land
- Agricultural land
- House
- Shops
- Others (please mention what)

Please mention what other property do you have in this neighborhood?

08. What rights do you think you have over your property?

- Right to use
- Right to sell
- Right to exclude
- Right to Cultivate
- Right to inherit
- Right to generate income
- Right to use public services
- Right to build/develop
- Other (please mention what)

Please mention what other right do you have over your property

09. What do you pay to the assembly (state/government) for your property?

- Property taxes
- Service charge
- Land rent
- Others (Please mention what)
- I do not pay to the government for my property

Please mention what other charges you pay to the government for your property

How often do you pay?

10. What do you pay to the Chief for your property?

- Property taxes
- Service charge
- Land lease
- Others (Please mention what)
- Nothing

Please mention what other charges you pay to the chief for your property

How often do you pay?

11. What do you pay to the neighborhood management committee?

"neighborhood management committee" is for maintenance of communal facilities and land development

- Service charge
- Maintenance charge
- Others (Please mention what)
- Nothing
- We don't have such committee

Please mention what other charges you pay to the neighborhood management committee

How often do you pay?

12. What do you pay to any other authority for your property?

- I do not pay to any other authority for my property
- I pay (Please mention which authority and what do you pay)

Please mention to whom you pay and what do you pay for your property

How often do you pay?

13. Is your land subjected to any of the following regulations?	Yes	No	I don't know
Planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land_use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subdivisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part C: Investment in built environment

01. Are you satisfied/dissatisfied about the existing condition of the facilities you have in your neighborhood? (please rate the facilities mentioned below)

	very bad	bad	average	good	very good
Electricity Connection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Water Connection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sanitation Service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Roads	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

02. Have you ever took initiative / contributed to increase the number of facilities (Infrastructure and services) in your neighborhood? (please choose for each facilities mentioned below)

Electricity connection

- a. Financial Contribution b Knowledge contribution c. Skill contribution
- d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership e. Other contribution (please mention what)
- f. Multiple contribution (please mention) g. I haven't contribute anything yet
- g. I haven't contribute anything yet g. I haven't contribute anything yet
- g. I haven't contribute anything yet

Water Connection

- a. Financial Contribution b Knowledge contribution c. Skill contribution
- d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership e. Other contribution (please mention what)
- f. Multiple contribution (please mention) g. I haven't contribute anything yet
- g. I haven't contribute anything yet g. I haven't contribute anything yet
- g. I haven't contribute anything yet

Sanitation Service

- a. Financial Contribution b Knowledge contribution c. Skill contribution
- d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership e. Other contribution (please mention what)
- f. Multiple contribution (please mention) g. I haven't contribute anything yet
- g. I haven't contribute anything yet g. I haven't contribute anything yet
- g. I haven't contribute anything yet

Roads

- a. Financial Contribution b Knowledge contribution c. Skill contribution
- d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership e. Other contribution (please mention what)
- f. Multiple contribution (please mention) g. I haven't contribute anything yet
- g. I haven't contribute anything yet g. I haven't contribute anything yet
- g. I haven't contribute anything yet

Please mention what type of other contribution (in case the respondent choose others)

Please mention which ones (in case the respondent chose multiple contribution)

03. Are you willing to take initiative / contribute to increase the number of Facilities (Infrastructure and services) in your neighborhood? (please choose for each facilities mentioned below)

Electricity connection

- a. Financial Contribution b Knowledge contribution c. Skill contribution
- d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership e. Other contribution (please mention what)
- f. Multiple contribution (please mention) g. I am not interested to contribute
- g. I am not interested to contribute g. I am not interested to contribute
- g. I am not interested to contribute

Water Connection

- a. Financial Contribution b Knowledge contribution c. Skill contribution
- d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership e. Other contribution (please mention what)
- f. Multiple contribution (please mention) g. I am not interested to contribute
- g. I am not interested to contribute g. I am not interested to contribute
- g. I am not interested to contribute

Sanitation Service

- a. Financial Contribution b Knowledge contribution c. Skill contribution
- d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership e. Other contribution (please mention what)
- f. Multiple contribution (please mention) g. I am not interested to contribute
- g. I am not interested to contribute g. I am not interested to contribute
- g. I am not interested to contribute

Roads

- a. Financial Contribution b Knowledge contribution c. Skill contribution
- d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership e. Other contribution (please mention what)
- f. Multiple contribution (please mention) g. I am not interested to contribute
- g. I am not interested to contribute g. I am not interested to contribute
- g. I am not interested to contribute

Please mention what type of other contribution (in case the respondent choose others)

Please mention which ones (in case the respondent chose multiple contribution)

04. Are you satisfied/dissatisfied about the existing condition of the amenities you have in your neighborhood? (please rate the amenities mentioned below)	very bad	bad	average	good	very good
Schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hospitals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clinics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Markets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others (please mention what)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please mention what other amenities (in case the respondent choose others)

05. Have you ever taken initiative / contributed to increase the number of amenities in your neighborhood? (please choose for each amenities mentioned below)

Schools

- a. Financial Contribution
- b Knowledge contribution
- c. Skill contribution
- d. Providing labor and man-power
- e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership
- e. Other contribution (please mention what)
- f. Multiple contribution (please mention)
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet

Hospitals

- a. Financial Contribution
- b Knowledge contribution
- c. Skill contribution
- d. Providing labor and man-power
- e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership
- e. Other contribution (please mention what)
- f. Multiple contribution (please mention)
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet

Clinics

- a. Financial Contribution
- b Knowledge contribution
- c. Skill contribution
- d. Providing labor and man-power
- e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership
- e. Other contribution (please mention what)
- f. Multiple contribution (please mention)
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet

Shops

- a. Financial Contribution
- b Knowledge contribution
- c. Skill contribution
- d. Providing labor and man-power
- e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership
- e. Other contribution (please mention what)
- f. Multiple contribution (please mention)
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet

Markets

- a. Financial Contribution
- b Knowledge contribution
- c. Skill contribution
- d. Providing labor and man-power
- e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership
- e. Other contribution (please mention what)
- f. Multiple contribution (please mention)
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet
- g. I haven't contribute anything yet

Others (please mention what)

- a. Financial Contribution b Knowledge contribution c. Skill contribution
 d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
 f. Offering co-operation & partnership e. Other contribution (please mention what)
 f. Multiple contribution (please mention) g. I haven't contribute anything yet
 g. I haven't contribute anything yet g. I haven't contribute anything yet
 g. I haven't contribute anything yet g. I haven't contribute anything yet

Please mention what type of other contribution (in case the respondent choose others)

Please mention which ones (in case the respondent chose multiple contribution)

06. Are you willing to take initiative / contribute to increase the number of amenities in your neighborhood? (please choose for each amenities mentioned below)

Schools

- a. Financial Contribution b Knowledge contribution c. Skill contribution
 d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
 f. Offering co-operation & partnership e. Other contribution (please mention what)
 f. Multiple contribution (please mention) g. I am not interested to contribute anything
 g. I am not interested to contribute anything g. I am not interested to contribute anything
 g. I am not interested to contribute anything g. I am not interested to contribute anything

Hospitals

- a. Financial Contribution b Knowledge contribution c. Skill contribution
 d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
 f. Offering co-operation & partnership e. Other contribution (please mention what)
 f. Multiple contribution (please mention) g. I am not interested to contribute anything
 g. I am not interested to contribute anything g. I am not interested to contribute anything
 g. I am not interested to contribute anything g. I am not interested to contribute anything

Clinics

- a. Financial Contribution b Knowledge contribution c. Skill contribution
 d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
 f. Offering co-operation & partnership e. Other contribution (please mention what)
 f. Multiple contribution (please mention) g. I am not interested to contribute anything
 g. I am not interested to contribute anything g. I am not interested to contribute anything
 g. I am not interested to contribute anything g. I am not interested to contribute anything

Shops

- a. Financial Contribution b Knowledge contribution c. Skill contribution
 d. Providing labor and man-power e. Suggesting/Requesting to the authority (chief/assembly)
 f. Offering co-operation & partnership e. Other contribution (please mention what)
 f. Multiple contribution (please mention) g. I am not interested to contribute anything
 g. I am not interested to contribute anything g. I am not interested to contribute anything
 g. I am not interested to contribute anything g. I am not interested to contribute anything

Markets

- a. Financial Contribution
- b Knowledge contribution
- c. Skill contribution
- d. Providing labor and man-power
- e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership
- e. Other contribution (please mention what)
- f. Multiple contribution (please mention)
- g. I am not interested to contribute anything
- g. I am not interested to contribute anything
- g. I am not interested to contribute anything
- g. I am not interested to contribute anything

Others (please mention what)

- a. Financial Contribution
- b Knowledge contribution
- c. Skill contribution
- d. Providing labor and man-power
- e. Suggesting/Requesting to the authority (chief/assembly)
- f. Offering co-operation & partnership
- e. Other contribution (please mention what)
- f. Multiple contribution (please mention)
- g. I am not interested to contribute anything
- g. I am not interested to contribute anything
- g. I am not interested to contribute anything
- g. I am not interested to contribute anything

Please mention what type of other contribution (in case the respondent choose others)

Please mention which ones (in case the respondent choose multiple contribution)

Part D: Investment in Green Environment (green areas and vacant/open green fields)

01. what do you feel about the presence of the vacant/open green fields in your neighborhood?

- I don't like it
- I don't care about their presence
- It's okay to have them
- Their presence is important
- Their presence is very important

02. Do you think there should be more buildings and infrastructures or more green areas? Please choose an option:

- There should be more green space in the neighborhood
- There should be more building and infrastructures in the neighborhood
- The current condition is balanced

03. What do you think these vacant/open green fields should be utilized for?

- Housing developments
- Commercial developments
- Industrial developments
- Other facility (please mention what)
- Park
- Playing field
- Plantation/agriculture
- Tree plantation
- Preserve as it is

Please mention what type of other Facilities (in case the respondent choose other facility)

04. A. Housing developments

*What type of initiative / contribution are you willing to do for the above mentioned new development in the vacant/open green fields?
(please choose from the options mentioned below)*

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I am not interested to contribute

Please mention what other contributions

04. B. Commercial developments

*What type of initiative / contribution are you willing to do for the above mentioned new development in the vacant/open green fields?
(please choose from the options mentioned below)*

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I am not interested to contribute

Please mention what other contributions

04. C. Industrial developments

*What type of initiative / contribution are you willing to do for the above mentioned new development in the vacant/open green fields?
(please choose from the options mentioned below)*

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I am not interested to contribute

04. D. Park

*What type of initiative / contribution are you willing to do for the above mentioned new development in the vacant/open green fields?
(please choose from the options mentioned below)*

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I am not interested to contribute

04_E. Playing field

What type of initiative / contribution are you willing to do for the above mentioned new development in the vacant/open green fields?
(please choose from the options mentioned below)

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I am not interested to contribute

04_F. Plantation/agriculture

What type of initiative / contribution are you willing to do for the above mentioned new development in the vacant/open green fields?
(please choose from the options mentioned below)

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I am not interested to contribute

04_G. Tree plantation

What type of initiative / contribution are you willing to do for the above mentioned new development in the vacant/open green fields?
(please choose from the options mentioned below)

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I am not interested to contribute

04_F. Other facility (As mentioned above)

What type of initiative / contribution are you willing to do for the above mentioned new development in the vacant/open green fields?
(please choose from the options mentioned below)

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I am not interested to contribute

05. Which options will you prefer to preserve the green areas (other than the vacant/open green land) of your neighborhood?

- Preservation of existing trees
- Preservation of existing open forest
- Preservation of existing closed forest
- Preservation of existing agricultural lands
- Preservation of wildlife (animal protection)
- I am not interested to preserve them

06. What type of initiative / contribution are you willing to do to preserve these green areas and vacant/open green fields? (please choose from the options mentioned bellow)

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I am not interested to contribute

Please mention what type of other contribution (in case the respondent choose other contribution)

06. What type of initiative / contribution are you willing to do to preserve these green areas and vacant/open green fields? (please choose from the options mentioned bellow)

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I am not interested to contribute

Please mention what type of other contribution (in case the respondent choose other contribution)

07_A. Renewable energy

Have you ever took initiative / contributed to use green services in your house and/or neighborhood? (please choose from the options mentioned below)

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I haven't contributed anything yet

07_B. Waste Management

Have you ever took initiative / contributed to use green services in your house and/or neighborhood? (please choose from the options mentioned below)

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I haven't contributed anything yet

07_C. Rain water harvesting

Have you ever took initiative / contributed to use green services in your house and/or neighborhood? (please choose from the options mentioned below)

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I haven't contributed anything yet

07_D. Green housing (Environmentally friendly building materials)

Have you ever took initiative / contributed to use green services in your house and/or neighborhood? (please choose from the options mentioned below)

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I haven't contributed anything yet

07_E. Green housing (Recycled building materials)

Have you ever took initiative / contributed to use green services in your house and/or neighborhood? (please choose from the options mentioned below)

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I haven't contributed anything yet

07_F. Green housing (Sustainable energy sources such as solar panels)

Have you ever took initiative / contributed to use green services in your house and/or neighborhood? (please choose from the options mentioned below)

- Financial Contribution
- Knowledge contribution
- Skill contribution
- Providing labor and man-power
- Suggesting/Requesting to the authority (chief/assembly)
- Offering co-operation & partnership
- Other contribution (please mention what)
- I haven't contributed anything yet

08. Do you know about any development control rules for new developments in the green areas and vacant/open green fields?

- Yes
- No

09. How do you know about these development control rules?

- From Chief
- From assembly officers (government officers)
- From neighborhood management committee
- From Neighbors
- From Media
- From other sources (please mention what)

Please mention what type of other sources (in case the respondent choose other sources)

10. How do you feel about following rules while doing new developments in the green areas and vacant/open green fields?

- Following rules are very important to me
- I do not know about any rules
- These rule restrict developments in my land and property
- I am not inclined to follow these rules
- Other opinion (please mention what)

Please mention other opinion (in case the respondent choose other opinion)

11. How do you feel about following rules to preserve the green areas and vacant/open green fields?

- Following rules are very important to me
- I do not know about any rules regarding this
- These rule restrict developments in my land and property
- I am not inclined to follow these rules
- Other opinion (please mention what)

Please mention other opinion (in case the respondent choose other opinion)

12. What obligations do you feel you have for owning your property?

- I do not feel any obligation
- Obligation to take care of the property
- Obligation to participate in maintaining and increasing the Communal facilities (infrastructure and services) of the neighborhood
- Obligation to participate in maintaining and increasing the Communal amenities of the neighborhood
- Obligation to save green environment of the neighborhood
- Other (Please mention what)

Please mention what other obligation (in case the respondent choose other)

Annex 2: Interview Guide for the Customary Authorities

INTRODUCTION

Greetings! My name is Fahmida and I am currently a Master’s student studying urban development at Erasmus University in the Netherlands. My research topic is “Understanding people's willingness to achieve sustainable balance in land use through their property rights and obligations”. I would like to know your valuable comments and knowledge regarding this matter. This interview is a part of an academic research. The information you provide will be used solely for academic purposes. Thank you in advance for your cooperation.

INTERVIEW GUIDE 1: CUSTOMARY AUTHORITIES	
<p>POSITION OF RESPONDENT: CONTACT #: E-MAIL:</p> <p>DISTRICT: AFIGYA KWABRE COMMUNITY :</p> <p>TIME STARTED [] TIME ENDED []</p>	
PART A: Ownership status of the community	
NO.	QUESTIONS
1	<p>Who owns all the lands under your jurisdiction?</p> <p>Do you have any allocation maps according to the use of your lands (land use)?</p>
2	<p>What can the individuals do with their land or property under your jurisdiction? How much does it differ for each category? (for RA: please mention the category during conversation)</p> <p>a. Allodial b. Freehold c. Leasehold d. Squatters on the land without permission</p>
3	<p>Do you believe all land-property users should have paper documents for their property?</p>

4	Do you think the community has permission from state authority for the buildings they built? How many of them have permission? (for RA : a gross number or percentage among that neighborhood)																																				
5	Do you think the people of the community pay their taxes? Do you supervise this?																																				
6	Do the people of the community pay to you or other authority for their property and land? Do you supervise this?																																				
PART B: Community involvement interest in the built environment																																					
1	Do you have any 'neighborhood management committee' to supervise the communal facilities and developments of lands under your dominion?																																				
2	If yes, who runs the committee? If not, how do you manage the infrastructure and new land developments of your neighborhood/community?																																				
3	<p>What do you think about the existing condition of the facilities you have in your neighborhood? (For RA: please guide the conversation by mentioning the facilities given bellow and ask them to rate after the conversation)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 10%; text-align: center;">Very bad</th> <th style="width: 10%; text-align: center;">Bad</th> <th style="width: 10%; text-align: center;">Average</th> <th style="width: 10%; text-align: center;">Good</th> <th style="width: 10%; text-align: center;">Very Good</th> </tr> </thead> <tbody> <tr> <td>Electricity connection</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>Water connection</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>Sanitation service</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>Roads</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> </tbody> </table>		Very bad	Bad	Average	Good	Very Good	Electricity connection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Water connection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Sanitation service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Roads	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>						
	Very bad	Bad	Average	Good	Very Good																																
Electricity connection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																																
Water connection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																																
Sanitation service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																																
Roads	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																																
4	<p>What do you think about the existing number of amenities you have in your neighborhood? (For RA: please guide the conversation by mentioning the amenities given bellow and ask them to rate after the conversation)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 10%; text-align: center;">Very bad</th> <th style="width: 10%; text-align: center;">Bad</th> <th style="width: 10%; text-align: center;">Average</th> <th style="width: 10%; text-align: center;">Good</th> <th style="width: 10%; text-align: center;">Very Good</th> </tr> </thead> <tbody> <tr> <td>Schools</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>Hospitals</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>Clinics</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>Shops</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>Markets</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> </tbody> </table>		Very bad	Bad	Average	Good	Very Good	Schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Hospitals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Clinics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Shops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Markets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Very bad	Bad	Average	Good	Very Good																																
Schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																																
Hospitals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																																
Clinics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																																
Shops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																																
Markets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																																

5	Who is responsible for the new development of facilities (infrastructure and services) and amenities of your neighborhood?		
6	<p>Do you think the people of the community are involved in the development process of communal facilities (infrastructure and services) and amenities? (For RA: please ask them to rate community involvement after the conversation)</p> <p style="text-align: center;"> Very bad Bad Average Good Very Good <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> </p> <p>Community Involvement :</p>		
6	<p>What type of involvement do you think the community is interested in the development of Facilities (infrastructure and services) and amenities of your neighborhood? (For RA: please mention the points bellow to guide the conversation)</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Facilities:</p> <p>Electricity connection</p> <p>Water connection</p> <p>Sanitation service</p> <p>Roads</p> <p>Amenities:</p> <p>Schools</p> <p>Hospitals</p> <p>Clinics</p> <p>Shops</p> <p>Markets</p> </td> <td style="width: 50%; vertical-align: top;"> <p>Type of involvement interest from community</p> <ol style="list-style-type: none"> 1. Financial contribution 2. Knowledge contribution 3. Skill contribution 4. Providing labor and man-power 5. By Suggesting/Requesting 6. By Offering co-operation & partnership 7. Other contribution (please mention what) </td> </tr> </table>	<p>Facilities:</p> <p>Electricity connection</p> <p>Water connection</p> <p>Sanitation service</p> <p>Roads</p> <p>Amenities:</p> <p>Schools</p> <p>Hospitals</p> <p>Clinics</p> <p>Shops</p> <p>Markets</p>	<p>Type of involvement interest from community</p> <ol style="list-style-type: none"> 1. Financial contribution 2. Knowledge contribution 3. Skill contribution 4. Providing labor and man-power 5. By Suggesting/Requesting 6. By Offering co-operation & partnership 7. Other contribution (please mention what)
<p>Facilities:</p> <p>Electricity connection</p> <p>Water connection</p> <p>Sanitation service</p> <p>Roads</p> <p>Amenities:</p> <p>Schools</p> <p>Hospitals</p> <p>Clinics</p> <p>Shops</p> <p>Markets</p>	<p>Type of involvement interest from community</p> <ol style="list-style-type: none"> 1. Financial contribution 2. Knowledge contribution 3. Skill contribution 4. Providing labor and man-power 5. By Suggesting/Requesting 6. By Offering co-operation & partnership 7. Other contribution (please mention what) 		
7	Does these involment interests vary according to their ownership status and condition? In case of both yes/no, why do you think so?		
PART C: Community involvement interest in the vacant/open green field			
1	Do you think there are enough vacant/open green fields in your neighbourhood?		
2	Do you think that these vacant lands should be utilized? And if so, then what for?		

3	Do you think the community shares the same thoughts as you regarding these vacant lands?										
4	<p>What type of involvement do you think the community is interested in the development of these vacant lands? (For RA: please mention the points bellow to guide the conversation)</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Type of possible new developments:</p> <p>Housing developments</p> <p>Commercial developments</p> <p>Industrial developments</p> <p>Other facility (please mention what)</p> <p>Park</p> <p>Playing field</p> <p>Plantation/agriculture</p> <p>Tree plantation</p> <p>Preserve as it is</p> </td> <td style="width: 50%; vertical-align: top;"> <p>Type of involvement interest from community</p> <ol style="list-style-type: none"> 1. Financial contribution 2. Knowledge contribution 3. Skill contribution 4. Providing labor and man-power 5. By Suggesting/Requesting 6. By Offering co-operation & partnership 7. Other contribution (please mention what) </td> </tr> </table>	<p>Type of possible new developments:</p> <p>Housing developments</p> <p>Commercial developments</p> <p>Industrial developments</p> <p>Other facility (please mention what)</p> <p>Park</p> <p>Playing field</p> <p>Plantation/agriculture</p> <p>Tree plantation</p> <p>Preserve as it is</p>	<p>Type of involvement interest from community</p> <ol style="list-style-type: none"> 1. Financial contribution 2. Knowledge contribution 3. Skill contribution 4. Providing labor and man-power 5. By Suggesting/Requesting 6. By Offering co-operation & partnership 7. Other contribution (please mention what) 								
<p>Type of possible new developments:</p> <p>Housing developments</p> <p>Commercial developments</p> <p>Industrial developments</p> <p>Other facility (please mention what)</p> <p>Park</p> <p>Playing field</p> <p>Plantation/agriculture</p> <p>Tree plantation</p> <p>Preserve as it is</p>	<p>Type of involvement interest from community</p> <ol style="list-style-type: none"> 1. Financial contribution 2. Knowledge contribution 3. Skill contribution 4. Providing labor and man-power 5. By Suggesting/Requesting 6. By Offering co-operation & partnership 7. Other contribution (please mention what) 										
5	What kinds of developments are permitted by the state authorities in these lands?										
6	<p>Do you think that the community is inclined to follow these rules from state authorities for new developments? (For RA: please ask them to rate community inclination to follow the rules after the conversation)</p> <p>Community inclination to follow the rules:</p> <table border="0" style="margin-left: 100px;"> <tr> <td style="text-align: center;">Verybad</td> <td style="text-align: center;">Bad</td> <td style="text-align: center;">Average</td> <td style="text-align: center;">Good</td> <td style="text-align: center;">VeryGood</td> </tr> <tr> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> </table>	Verybad	Bad	Average	Good	VeryGood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Verybad	Bad	Average	Good	VeryGood							
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>							
7	Do you have any other rules (customry rules) for new developments on your lands? (other than the state authority rules)										
8	<p>If yes, Do you think that the community is inclined to follow your rules for new developments? (For RA: please ask them to rate community inclination to follow the rules after the conversation)</p> <p>Community inclination to follow the rules:</p> <table border="0" style="margin-left: 100px;"> <tr> <td style="text-align: center;">Verybad</td> <td style="text-align: center;">Bad</td> <td style="text-align: center;">Average</td> <td style="text-align: center;">Good</td> <td style="text-align: center;">VeryGood</td> </tr> <tr> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> </table>	Verybad	Bad	Average	Good	VeryGood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Verybad	Bad	Average	Good	VeryGood							
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>							

9	Do you think the open green areas and built areas in your neighbourhood are balanced? (Do you think there should be more buildings and infrastructures or more green lands and areas?)
10	Please share your observations regarding what the community thinks about this? (Do the community think there should be more buildings and infrastructures or more green lands and areas?)
<p>(PLEASE ASK FOR PERMISSION TO USE THE NAME)</p> <p>CONSENT TO USE RESPONDENT NAME: YES/NO</p> <p>NAME OF RESPONDENT:</p>	

Annex 3: Interview Guide for the Stool Land Officers & Academics

INTRODUCTION

Greetings! My name is Fahmida and I am currently a Master’s student studying urban development at Erasmus University in the Netherlands. My research topic is “Understanding people's willingness to achieve sustainable balance in land use through their property rights and obligations”. I would like to know your valuable comments and knowledge regarding this matter. This interview is a part of an academic research. The information you provide will be used solely for academic purposes. Thank you in advance for your cooperation.

INTERVIEW GUIDE 2: STOOL LAND OFFICERS & ACADEMICS	
<p>POSITION OF RESPONDENT: CONTACT #: E-MAIL:</p> <p>DISTRICT: AFIGYA KWABRE OFFICE NAME & LOCATION :</p> <p>TIME STARTED [] TIME ENDED []</p>	
NO.	QUESTIONS
1	What do you think about the current land use balance of green and built areas in Afigya Kwabre district (Kodie, Buoho & Ntribuho)?
2	How does the decision-making process for new developments in the vacant/green lands work among the state authority, chiefs and community in Afigya Kwabre district (Kodie, Buoho & Ntribuho)? (For RA: Please mention the name of the household survey areas)
3	How much Community involvement is there in the decision-making process to increase the number of communal facilities (infrastructures and services) and amenities in these areas? (For RA: Please mention the name of the household survey areas)
4	Do you think tenure ship (ownership condition) of the individuals impacts overall community involvement regarding this? <ul style="list-style-type: none"> - If yes, how tenure ship (ownership condition) of the individuals impacts the overall community involvement in this matter

	<ul style="list-style-type: none"> - If no, what plays the vital role for community involvement in decision making process to increase the number of communal facilities (infrastructures and services) and amenities
5	How much Community involvement is there in the decision-making process for new developments (building new houses/buildings, land use change) in the vacant/green lands of these neighborhoods? (For RA: Please mention the name of the household survey areas)
6	How much Community involvement is there in the decision-making process for preserving the vacant/green lands of these neighborhoods? (For RA: Please mention the name of the household survey areas)
7	<p>Do you think tenure ship (ownership condition) of the individuals impacts overall community involvement regarding this (new development in the vacant green lands or preserving them)?</p> <ul style="list-style-type: none"> - If yes, how tenure ship (ownership condition) of the individuals impacts the overall community involvement in this? - If no, what plays the vital role for community involvement in decision making process to do new developments in the vacant green lands? - If no, what plays the vital role for community involvement in decision making process to preserve the vacant green lands?
<p>(PLEASE ASK FOR PERMISSION TO USE THE NAME)</p> <p>CONSENT TO USE RESPONDENT NAME: YES/NO</p> <p>NAME OF RESPONDENT:</p>	

Annex 4: Independent Variables analysis

4.1 Perceived property rights and obligation of the community:

4.1.1 Tenure Modalities:

TM_TT_Ownership_status * TM_TT_Community_status Crosstabulation

% within TM_TT_Ownership_status

		TM_TT_Community_status		
		I am a Settler	I am an indigene	Total
TM_TT_Ownership_status	Freehold owner	33.3%	66.7%	100.0%
	I am a tenant	89.3%	10.7%	100.0%
	I leased the land from chief	80.0%	20.0%	100.0%
	Me	65.0%	35.0%	100.0%
Total		72.6%	27.4%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.608 ^a	3	.009
Likelihood Ratio	11.409	3	.010
N of Valid Cases	62		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 1.37.

TM_Years_of_Residency * TM_TT_Ownership_status Crosstabulation

% within TM_Years_of_Residency

		TM_TT_Ownership_status				
		Freehold owner	I am a tenant	I leased the land from chief	Me	Total
TM_Years_of_Residency	0-4 years		68.4%		31.6%	100.0%
	10-14 years		37.5%	12.5%	50.0%	100.0%
	5-9 years	9.1%	72.7%		18.2%	100.0%
	over 15 years	33.3%	16.7%	16.7%	33.3%	100.0%
Total		14.5%	45.2%	8.1%	32.3%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	24.827 ^a	9	.003
Likelihood Ratio	29.866	9	.000
N of Valid Cases	62		

a. 12 cells (75.0%) have expected count less than 5. The minimum expected count is .65.

TM_Years_of_Residency * TM_TT_Ownership_status Crosstabulation

% within TM_Years_of_Residency

		TM_TT_Ownership_status				
		Freehold owner	I am a tenant	I leased the land from chief	Me	Total
TM_Years_of_Residency	0-4 years		68.4%		31.6%	100.0%
	10-14 years		37.5%	12.5%	50.0%	100.0%
	5-9 years	9.1%	72.7%		18.2%	100.0%
	over 15 years	33.3%	16.7%	16.7%	33.3%	100.0%
Total		14.5%	45.2%	8.1%	32.3%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	24.827 ^a	9	.003
Likelihood Ratio	29.866	9	.000
N of Valid Cases	62		

a. 12 cells (75.0%) have expected count less than 5. The minimum expected count is .65.

% within TM_Years_of_Residency

		TM_TT_Community_status		Total
		I am a Settler	I am an indigene	
TM_Years_of_Residency	0-4 years	94.7%	5.3%	100.0%
	10-14 years	87.5%	12.5%	100.0%
	5-9 years	100.0%		100.0%
	over 15 years	37.5%	62.5%	100.0%
Total		72.6%	27.4%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	24.578 ^a	3	.000
Likelihood Ratio	27.217	3	.000
N of Valid Cases	62		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 2.19.

Annex 5: IHS copyright form

In order to allow the IHS Research Committee to select and publish the best UMD theses, participants need to sign and hand in this copy right form to the course bureau together with their final thesis.

Criteria for publishing:

1. A summary of 400 words should be included in the thesis.
2. The number of pages for the thesis is about 50 (without annexes).
3. The thesis should be edited

Please be aware of the length restrictions of the thesis. The Research Committee may choose not to publish very long and badly written theses.

By signing this form you are indicating that you are the sole author(s) of the work and that you have the right to transfer copyright to IHS, except for items cited or quoted in your work that are clearly indicated.

I grant IHS, or its successors, all copyrights to the work listed above, so that IHS may publish the work in *The IHS thesis series*, on the IHS web site, in an electronic publication or in any other medium.

IHS is granted the right to approve reprinting.


The author(s) retain the rights to create derivative works and to distribute the work cited above within the institution that employs the author.

Please note that IHS copyrighted material from *The IHS thesis series* may be reproduced, up to ten copies for educational (excluding course packs purchased by students), non-commercial purposes, providing full acknowledgements and a copyright notice appear on all reproductions.

Thank you for your contribution to IHS.

Date : 16.11.2020

Your Name(s) : Fahmida Islam

Your Signature(s) : 

Please direct this form and all questions regarding this form or IHS copyright policy to:

The Chairman, IHS Research Committee Burg. Oudlaan 50, T-Building 14 th floor, 3062 PA Rotterdam, The Netherlands	j.edelenbos@ihs.nl Tel. +31 10 4089851
--	--

