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Sociocultural factors and value of green areas: A case study of Afigya Kwabre South District, Kumasi-Ghana.

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Summary

It has been fairly and widely acknowledged that there is the need to shift focus and commitment towards the preservation of green areas due to their enormous benefits as means to attain sustainable development with inclusive and accessible open green areas. In view of the high rate of green areas depletion and the lack of adequate knowledge about the concept in Ghana, this study sought to explain the influence of sociocultural factors and motivating or demotivating factors on perceived values of green areas in the Afigya Kwabre South District (AKSD) of the Ashanti Region of Ghana with a focus on the state, forms or types of green areas, sociocultural factors (norms, beliefs and customs) and motivating or demotivating factors influencing perceived value of green areas as well as the perceived values of green areas. Sociodemographic characteristics such as age, gender, education, religion, occupation and income levels were also present in the sample to highlight and explain the dynamics in responses. The study adopted a qualitative research approach with a case study design. Purposive sampling was used to select a sample size of 30 respondents for semi-structured interviews from four communities in the study district namely Hemang, Ntiribuoho, Buoho and Kodie. Data was organised and analysed in atlas. ti software and manually with the use of a frequency distribution table to address the four (4) research questions formulated to guide the study. The study revealed that generally, respondents had a fair idea of what constitutes green areas but were not satisfied with their deplorable states. The study found that the existing types of green areas were mainly the religious sites i.e. (grotto) and the sacred forest, agricultural lands with mountainous areas, school parks, normal trees and scrubs. Normal trees such as bamboo, wawa, odum, nim tree and plantain trees formed the main types of existing green areas easily seen at a glance. The study further revealed that norms, beliefs and customs play significant role in influencing perceived values of green areas. Taboos, myths and superstition were revealed as key sociocultural factors that significantly helps in the preservation of green areas and at the same time instils morals and values in people, thereby influencing perceived values of green areas. The study observed a high level of depletion of green areas to the built environment. However, concern for loss of green areas and the expression of need for its preservation were equally revealed by the study. More so, the study recorded clean and well-maintained green areas, social interaction, accessibility as well as social and physical features as key motivating and demotivating factors that enhanced resident's satisfaction levels. All respondents appreciated beauty provided by green areas as a key value of green areas. All sociocultural factors such as gender, age, religion, education, income level and occupation influenced respondents perceived value for green areas. The study concludes that the development of green areas as well as the values assigned to same in AKSD is still at the budding stage and are under serious sociocultural influences. The study recommends that there is the need for the Assembly to make conscious efforts provide access to inclusive and accessible open green and public spaces for all persons as all respondents of all ages and sex expressed interest in accessing and protecting such areas. Agricultural land areas must also be protected to ensure productive and sustainable agriculture.

Keywords

Sociocultural factors, Sociodemographic characteristics, Green areas, Perceived value of green areas, Peri-urban

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Abbreviations

IHS	Institute for Housing and Urban Development Studies
AKSD	Afigya Kwabre South District
MTDP	Medium Term Development Plan
ES	Ecosystem Services
EEA	European Environmental Agency
EN	English Nature
VBN	Values, Beliefs and Norms
STCB	Sociocultural Theory of Cognitive Behaviour
NEP	New Ecological Paradigm
AC	Awareness Consequence
AR	Ascription of Responsibility
DV	Dependent Variable
IV	Independent Variable
POS	Public Open Spaces
UGS	Urban Green Spaces
KNUST	Kwame Nkrumah University of Science and Technology
SDG	Sustainable Development Goal
Pln	Planners
Std	Students
Tchr	Teachers
UnE	Unemployed
Otr	Other
M	Male
F	Female
R	Respondent

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Chapter 1: Introduction

1.0 Introduction

This chapter provides a background to the research topic: Sociocultural factors and value for green areas, a part of the PBL Netherlands Environmental Assessment Agency larger research project that seeks to explore strategies and scenarios for inclusive green growth in the peri-urban Kumasi landscape of Ghana. The chapter further contains the problem statement, research objectives, main and sub research questions, significance of the study, justification of case as well as scope and limitation of the study.

1.1 Background

Globally the concept of urban green areas has increasingly become an imperative subject in urban planning and research (Shackleton & Blair, 2013, Appiah et. al, 2017). "Urban green areas are considered as outdoor places with significant amounts of vegetation, existing as either managed areas or remnants of natural landscapes and vegetation" (Abass, et. al., 2019). Green areas have an important role to play in the environmental sustainability and liveability of towns and cities, and therefore its provision require adequate planning approaches, implementation strategies and financial commitment (Shackleton & Blair, 2013). Extensive research has supported the health, environmental, economic and social benefits of urban green area and has called for its preservation, protection and management (Appiah et. al., 2017; Abass, et. al., 2019).

Governing bodies in developed nations acknowledge the importance of the provision of green spaces in urban areas and therefore have required standards for compliance in their urban planning frameworks. Noticeably is the European Environment Agency (EEA), as evidenced in the works of Barbosa et al. (2007) in Abass et. al., (2109), which advocates that green areas should be accessible within a 15-minute walking distance between individual homes, and this is the practice in many European cities, for example in Rotterdam, Netherlands. Likewise, English Nature (EN), a UK government agency, also suggests that urban dwellers ought to have an open green areas not less than 300 metres away from their homes (English Nature, 2005), as well as a policy for 20 to 40 metre squared of public green areas per capita as adhered to in Johannesburg, South Africa according to Johannesburg Open Space System (2002). Regardless of the above, green areas globally continue to be under threat with potential negative implications for affected communities as huge areas of urban green areas are lost to rapid urbanisation (Abass et. al., 2019; Dumenu, 2013; Wood and Pullin, 2000). To address this challenge, the United Nation is seeking to make cities and human settlements inclusive, safe, resilient and sustainable under its Sustainable Development Goal (SDG) 11, with a specific target at providing universal access to safe, inclusive and accessible, green and public spaces in particular for women and children, older persons and persons with disability. Collective views from ecological thinking and landscape study have however pointed to public perceptions among other factors as a significant factor in determining value for green areas and land use change, hence its potential to alter peri-urban green areas (Shackleton & Blair; 2013; Balram et. al., 2005).

1.2 Problem Statement

The growing global concerns of the worlds rapidly urbanizing population has gained popularity in urban research (Abass et. al., 2019; Appiah et. al, 2017). The United Nations Population Division estimates that, 66% of the world's population would be in urban areas by 2050. This increased urbanization is envisaged to be accompanied with alteration in the ecology of urban landscape with environments distorted and new habitat types formed **(**Abass, et. al., 2019).

Globally, the rippling effects of rapid urbanization on the loss of green areas leading to land-use change to pave way for development and expansion cannot be over emphasized. However, as established in expansive body of literature (Akamani 2006; Abass et. al., 2019; Appiah et. al., 2017), urban policy interventions in Africa often fail to capture eco-friendly issues especially urban green areas and its management, irrespective of the growing concerns, as well as the social, economic and ecological benefits of urban greenery.

Regardless of the growing concerns for the need to consciously plan for, preserve and protect green spaces, the concept of green areas and its management relatively remains unclear in Ghana's planning frameworks. Policy implementers in the field also seem quite unconscious about the need to preserve and manage these greeneries in the face of urbanization (Abass. et. al, 2019). There is also little research in urban planning with focus on peri-urban green areas and the perceptions on value for these green areas as well as factors that informs these perceptions. Factors that drives these perceptions and how they influence behaviour towards the preservation and use of these green areas equally remain unclear (Balram et al, 2004; Abass et. al., 2019; Appiah et. al., 2017). Studies (e.g., Abass et. al., 2019; Balram et al, 2005) have however shown that, perceptions on green areas influence the types and functions of green areas, their location in neighbourhoods or region and the ways in which these areas can be used. Findings of Kuldna et. al. (2020); Paul et. al (2017) and Hecke et. al (2016) also revealed that, accessibility, cleanliness, physical features, social factors such as behaviour of others, quality of vegetation, age group, gender, and education are factors that could motivate or demotivate persons on the use of green areas as a result of their potential influence on informing individuals perceptions on the value or use of green areas.

Perception according to Mosunova (2017) refers to the phenomena, that starts with a simple understanding by a person of what happens to him at some moment of being (i.e. spontaneous understanding). This often ends with the generalization of sensory or understanding experience in the form of reflecting the objective reality around us in the image of the world and its individual fragments. Perceptions are mainly formed based on the experiences of an individual from his social and cultural environment and are therefore influenced by many sociocultural elements or factors (Hwang, 2011). Sociocultural factors are a combination of social and cultural factors that depicts customs, lifestyles, beliefs, values and norms that characterize a society or influence a society's way of interaction, attitudes and perceptions (Gashu et. al., 2019; Appiah et. al., 2017). These perceptions whether social, cultural, economic or environmental have an influence on whether green areas are preserved or converted into other uses.

According to Appiah et. al., (2014), peri-urban areas which hitherto, were agrarian district of the Ashanti region of Ghana are rapidly urbanizing with appreciable traits of peri-urbanism, with its concomitant loss of peri urban green areas. This poses a continuous worrying trend for cities in Ghana in the face of the realisation of SDG 11 , since policy implementers, private and public developers as well a good percentage of the general public do not seem to attach much importance to the preservation of green areas, thereby presenting a bleak future for ensuring inclusive and accessible green and public open spaces for all persons in Ghana as targeted by the SDG 11.7. Several empirical works (Abass et. al., 2019; Adjei-Mensah, 2014; Cobbinah & Adomako, 2012), have shown that, the Kumasi city which over the years has been known as the 'garden city' due to its greenery features has lost most of its green areas both in the greater city and its peripheries to infrastructural development. This has gradually led to Kumasi losing out on its green scenery and aesthetic beauty provided by greenery in the past (Abbas. et. al., 2019). As much as green areas are important to ensure liveability in cites, not much is known about it values in the Ghanaian context. It is in the light of the above problem among others, that this study, as part of the PBL Netherland's Environmental Agency's larger

project sought to explain how sociocultural factors as well as motivating and demotivating factors influence perceived value of green areas in the Afigya Kwabre South District (AKSD) of the Ashanti Region of Ghana.

1.3 Research Objectives

The main aim of the study is to explain the influence of sociocultural factors with motivating and demotivating factors on perceived values of green areas in AKSD, Kumasi.

1.4 Research Questions

1.4.1 Main Research Question

How do sociocultural factors and motivating or demotivating factors influence perceptions on value of green areas in AKSD, Kumasi?

1.4.2 Sub Research Questions

The following sub research questions will be asked to help in answering the main research question;

- What are the forms or types of green areas in AKSD, Kumasi?
- How do sociocultural factors (beliefs, norms and customs) influence perceived value of green areas in AKSD, Kumasi?
- How do motivating and demotivating factors influence value of green areas in AKSD, Kumasi?
- What are the perceived values of green areas in AKSD, Kumasi?

1.5 Relevance of the Research Topic

Foremost, the relevance of this study was highly rooted in the fact that, it formed part of a larger research project of PBL Netherlands Environmental Assessment Agency, an actual project which sought to explore strategies and scenarios for inclusive green growth in the Kumasi landscape, and as such have both scientific and societal relevance. Undoubtedly, it has added to the body of existing knowledge on urban greenery in Kumasi. More importantly, this study also contributes to inform policy planning and implementation processes in order to enhance the Kumasi city's inclusive green growth initiative. Considering the imminent challenges of managing and preserving green areas in Ghana, regardless of several studies that have recommended means of promoting the concept of green areas, it still remains unclear in Ghana. This study's focus on the role of sociocultural factors on perceptions of green areas helped to throw light on what informs such perceptions to deepen the understanding of policy makers in dealing with such perceptions and also give possible recommendations on the way forward.

1.6 Justification of the Case Study

The research studied the influence of sociocultural factors and motivating or demotivating factors on perceived value for green areas in the AKSD. The district is one of the 43 districts of Ashanti region located in the central part of the region with a land area of about 409.4 square kilometres representing 1.68% of the total land area in the Ashanti Region of Ghana. AKSD district was selected because it falls within the broader peri-urban scope of the PBL-Netherlands Environmental Agency's research. It is one of the closest districts to the second largest city in Ghana, Kumasi. Due to its closeness to Kumasi, the district is experiencing high population growth with increasing growth in the built environment owing to influx of settlers from the city in their bid to avoid high cost of rent in the greater Kumasi. This has led to depletion of its original forested vegetation which hitherto was a closed forest with continuous canopy of tall and medium height trees, leaving the district with patches of green. There is

also the presence of green areas existing as cultural and religious sites that aids in the preservation of green areas which was of keen interest to this study.

1.7 Scope and limitation of the study

The research focused on green areas and how sociocultural factors influence perceived value of these areas in the AKSD of the Ashanti Region of Ghana. The definition of green areas was open to all forms of green areas in the study area ranging from vegetation existing as either managed areas or remnants of natural landscapes to farmlands, forest lands, wetlands, grassland and all open green areas. The open broad scope of green areas was due to the research focus of the PBL Netherlands Environmental Assessment Agency which sought to explain social and cultural perspectives on the value of agriculture and natural green areas in the peri-urban Kumasi landscape of Ghana. Four communities in the district namely Buoho, Hemang, Ntiribuoho and Kodie were covered. Limitation for the study will be thoroughly discussed in chapter 3.

Chapter 2: Literature review/theory

2.0 Introduction

The following related theories are presented: Sociocultural Theory of Cognitive Behaviour (STCB), and the Value, Beliefs and Norm (VBN). Factors affecting perceptions on the value of green areas within each theoretical framework are discussed. Sustainability theory, concept of urban sprawl, concept of perception and their link to green spaces and perceived value of green areas have also been highlighted. The chapter also presents the conceptual framework of the study.

2.1 Sociocultural Theory of Cognitive Behaviour (STCB)

This theory was proposed by Lev Vygotsky in 1978 to highlight the important contribution that society makes towards an individual's development**.** It focuses on how social interactions, cultural beliefs, values, norms, customs and attitudes influence learning and how learning takes place in a sociocultural environment. This theory stresses on the interaction between developing people (especially children) and the culture they live in. The theory further suggest that human learning is largely a social process. It postulates that, even though cognitive developments vary across culture, the fundamental role of interaction in an individual's cognitive development cannot be over emphasized. This theory does not only focus on how peers and adults' interactions influence learning but also on how cultural beliefs and attitudes impacts how learning takes place and its associated impacts on perceptions and behaviour. It highlights the Zone of Prozimal Development, that is, the distance between what an individual can independently achieve and what he/she can potentially achieve with guidance.

2.2 Value-Belief-Norm (VBN) Theory

The VBN theory of Schwartz's (1977) was first introduced in 1999 by Stern et. al in a bid to link the value theory and the new environmental paradigm to the norm activation model. The theory aimed to provide a comprehensive understanding of public support in an environmentalism context. The theory which was built on three components namely values, beliefs and norms sought to investigate selfless intentions and behaviour in pro-social context. The model comprises of three main constructs namely awareness of consequences, ascription of responsibility and personal norm, in explaining the formation of pro-social behaviour and intention. Values according to Schwartz in this theory is defined as "a desirable trans-situational goal varying in importance, which serves as a guiding principle in the life of a person or other social entity" (Schwartz 1992, pg. 21). Theory further suggest that, the value structure is complex and can often consist of several variables. It highlights relationships of personal values as key predators of attitudes and equally sensitive to cultural differences. Beliefs are also seen to be composed of three constructs namely New Ecological Paradigm (NEP): thus beliefs about humanity's ability to upset nature;, awareness consequence(ACs): thus the belief that environmental well-being can enhance or threaten other people, species and the environment and ascription of responsibility(ARs): thus the belief that human actions can either prevent or escalate potential negative consequences. Personal norms, the third construct is also seen as social rules dictating how its members should behave and are activated by their beliefs (Kiatkawsin and Han, 2017; Han, 2015).

This theory is relevant for the study of Norms, beliefs and customs as sub variables of sociocultural factors since it assumes that, an individual's intention and behaviour towards the environment is informed by personal norms and beliefs which are activated by the gradual process that starts from values through ecological worldview and awareness of adverse consequences to ascribed responsibility. All these processes are cognitive in nature and hence

emerges from one's sociocultural context. In view of the above, it is inevitably informing that, perceptions on value for green areas has the potential to be influenced by individual's sociocultural environment or setting since that forms the basis of one's perception with its high potential of influencing learning outcomes (Mosunova, 2017).

2.3 Sociocultural Factors

Sociocultural factors are a combination of social and cultural factors that depicts customs, lifestyles, beliefs, values and norms that characterize a society or influence a society's way of interaction, attitudes and perceptions (Gashu et. al., 2019; Appiah et. al., 2017). Culture is multifaceted, and includes knowledge, belief, art, law, morals, customs and any other capabilities and habits acquired by humans as members of a society. Culture influences the pattern of living, behaviour, consumption, and decision-making of individuals. It can be acquired from the family, from the region or from all that has been around us while we were growing up and learning the ways of the world (Lawan & Ramat, 2013). Sociocultural as a term is also often used to describe the close relationship between society and culture (Olatunji and Ejalonibu, 2013). According to Smallbone, et al, (1995) in Olatunji, (2015 pg. 4), Sociocultural factors are also "systems of customs, norms, values and beliefs that determine mindset and automatically govern personal behaviour; this mindset is the result of the past experiential learning from sociocultural environment". More specifically, cultural aspects include aesthetics, education, language, law and politics, religion, social organizations, technology and material culture, values, beliefs and norms, and attitudes (Olatunji, 2015). More so, social actions of individuals are expressive human actions which cannot be separated from their socio-economic and cultural background (Bloodgood and Sapienza, 1995 in Olatunji, 2015). Studies have found that social factors such as age, income level, gender, education level, and social background greatly influence an individual's perception, attitude and behaviour (Budeanu, 2007; Han et al.,2009; Ostman Parker, 1987; Pinto et al., 2011 in Kiatkawsin and Han, 2017).

Unarguably, these sociocultural factors (norms, beliefs and customs) are deeply embedded in the sociocultural theory of cognitive behaviour and the VBN Theory, thereby confirming the views of authors as expressed in the discussion on sociocultural factors above. Whiles the sociocultural theory of cognitive behaviour affirms the fundamental role of social interaction in cognitive development and role of belief, norms and customs in influencing perceptions, the VBN theory highlights beliefs and norms as key components on which the theory is built with the aim of examining behaviour in a pro-social contest. Having the elements of sociocultural factors and their bearing on perception deeply rooted in theory makes it difficult to overlook the glaring relationship between the two.

Consequent from the above, it has become increasingly difficult to distinguish social factors from cultural factors due to their overlapping tendencies (Olatunji and Ejalonibu, 2013). However, several studies (Kiatkawsin and Han, 2017; Lawan & Ramat, 2013; Olatunji, 2015) have expressed views on what sociocultural factors are composed of. While some express distinctive views on what constitutes social and cultural factors, others combine the two due to their common characteristics. For the purpose of this study, sociocultural factors will be defined as combination of social and cultural factors that depicts customs, lifestyles, beliefs, values and norms that characterize a society or influence a society's attitudes and perceptions (Gashu et. al., 2019; Appiah et. al., 2017). Sociocultural factors considered in this study includes customs, norms, beliefs and customs (taboos, superstitious beliefs), religion, age, income level, gender, educational level and occupation. However, age, income level, gender, educational level and occupation which overlapped in the discussions on sociocultural factors

were treated as socio-demographic characteristics that ensured representativeness of the sample and also helped in highlighting the variations in responses.

2.3.1 Beliefs, Norms and Customs

Tondeur et. al, 2016 opines that beliefs are psychological understandings, premises, or propositions felt to be true and that the totality of one's beliefs about the physical and social world, as well as beliefs about oneself, is postulated to exist within a comprehensive belief system. More generally, beliefs serve as personal guides that help individuals define and understand the world and themselves. Studies (Bjorn, 2019; Lawan and Zanna, 2013) also suggest that beliefs are the principles or convictions or faiths that people hold to be true or not. Beliefs are descriptive thoughts that an individual hold about something or standards, rules or principles that direct behaviour. They are traditional and widely accepted ways of behaving or doing somethings that are specific to a particular society, place, or time and are often specific to individuals of a society just as their collective values. Beliefs are largely cognitive in nature and are developed over a relatively long period of time and are often thought of as emotions representing increasing levels of affective involvement or decreasing levels of cognitive involvement. Beliefs therefore have direct influence on perceptions since perceptions are embedded in individuals living environment.

Social norms on the other hand are rules or expectations through which a society guides the behaviour of its members and often reflect social values (Lawan and Zanna, 2013). Social norms are mechanisms of social control which promote conformity. They can be both proscriptive, regulating what one should not do and prescriptive, establishing an expectation of what one should do. Customs are also a traditional and widely accepted ways of behaving or doing something that is specific to a particular society, place, or time. Norms may be formalized in law or other types of institutionalised regulatory parameters, or they may be informal behavioural regularities or customs (Lawan and Zanna, 2013). Norms are often group influences observed by an individual on deciding to perform or not to perform a specific behaviour. According to Sutherland & Holstead (2014,) in Bjorn, 2019, 'Social norms represent perceptions of peer-pressure, which are often of greater or lesser importance for different individuals and behaviours.' These beliefs, the 'normative beliefs', consist of the believed approval or disapproval of the specific behaviour by persons or groups that are important to the individual itself. Norms therefore varies by cultural group and have direct influence on perceptions since perceptions are embedded and held high within individual social environment.

2.4 Sociocultural factors and influence on perceived value of Green Areas

The meaning of sociocultural is copious as much as what amounts to value for green areas is a complex question. Values are informed by factors such as individual personal characteristics and social environment, ethnic affiliation, personality etc. from the social and cultural background in which an individual was nurtured. As such, human behaviours are mostly the functioning of specific sociocultural systems in which culture dictates behaviour (Olatunji, 2015). For the purpose of clarity, and to explain how sociocultural factors other than norms, beliefs and customs possibly influence perceptions on value for green areas, the study assessed age, income level, gender, educational level and occupation as socio-demographic characteristics which ensured representativeness of the sample and also helped in highlighting the variations in responses.

2.4 Motivating and Demotivating Factors

2.4.1.1Motivating factors

Motivating factors for the purpose of this study, were considered as elements that had the tendency to influence one's use or values for green areas positively. Hecke et al. (2016) revealed that, social and physical environmental factors such as accessibility by foot/bicycle/public transport, closeness to home/school, presence of (active) friends and family, cleanliness of Public Open Spaces (POS) and features, availability of sport and play facilities, large open spaces and beautiful sceneries attracted adolescents in low income neighbourhoods to visits POS's. Altunkasa et al. (2017) in determining the effectiveness of green spaces and socio-cultural facilities as providers of urban ecosystem services in Turkey also discovered that, the distribution of green spaces and socio-cultural facilities of the neighbourhoods are imbalanced with index values of these facilities ranging between 45 and 84 out of 100. This revealed a strong link between sociocultural factors and green areas in Turkey. Kuldna et al. (2020) in measuring the perceived importance of and satisfaction with nature observation activities and their influencing factors also revealed that age, gender and nationality influenced how important visitors considered nature observation.

Paul et al. (2017) in an assessment of the importance of parks for visitors in Delhi, revealed that visitors valued parks primarily for environmental and psychological/health benefits. Visitors equally indicated preference for large, well-maintained, publicly accessible parks in a crowded city. This finding could help to better plan and design urban green spaces, in responding to the needs and preferences of urban communities. Riechers et al. (2018) by measuring perceptions of cultural ecosystem services provided by urban green spaces in Berlin revealed that, cultural ecosystem services can be perceived through bundles that may have negative influence on each other since perceived importance of cultural ecosystem services were influenced by spatial and social factors. Older inhabitants living in peri-urban areas tend to prefer cultural ecosystem services related to nature experiences while younger inner-city dwellers tended to prefer cultural ecosystem services facilitating social interactions. This interestingly depicts how perceptions vary over space and time. Age group and the site's natural appearance according to Kuldna et al. (2020) have an effect on the satisfaction with all nature observation activities (watching, listening and learning) as visitors who could read the information boards were more satisfied with learning about the site's nature even though visiting nature trails or boardwalks and visiting the bird-watching tower did not influence visitor satisfaction with nature observation. Zhang et al. (2015) in measuring factors that affect the residents' satisfaction levels when participating in physical activities in urban green spaces revealed that, low-intensity activities (e.g., walking, sightseeing) were the most common activities. The living context, quality of vegetation, and accessibility of urban green spaces were equally listed as having significant effect on residents' satisfaction levels.

Jim et al. (2013) equally assessed visitors' views on key urban green spaces (UGSs) variables and socioeconomic effect on UGS perception in Guangzhou, China. The results showed good knowledge, positive perception and limited concern about safety as key variables. Benefits directly related to individual and family interests were emphasized as health enhancement, promotion of children development, and stress reduction variables. The social role of community development (social interaction) received less support. Significant differences in perception were found across most socioeconomic variables, including gender, age, marital status, education, occupation, and district of residence.

2.4.2 Demotivating factors

Demotivating factors for the purpose of this study, were considered as elements that has the tendency to deters one's use of green areas and may influence values for green areas negatively.

Presence of social deviants (drug users, gangs and home-less people), behaviour of other users and the cleanliness of the POS and features were identified by Hecke et. al. (2016) as some of the social and physical factors that deterred adolescents from visiting POS, and thereby establishing the influence of social and physical factors on perception and behaviour of adolescent's on value for POS. Kabisch (2019) studied the association between urban green areas and health with focus on socio-economic and socio-demographic confounders that may over-ride potential associations, and reported that, even though some positive effect of urban green space on mental health and cardiovascular diseases exist, there is weak evidence from studies to show that socio-economic confounders, such as household income or neighbourhood deprivation, have the highest impact. Hoxha et al. (2014) also suggests that ethnic nationalism and social constructs are much less important factors affecting planners' perceptions on producing and designing green space regardless of the fact that national identity and political pressure are important to have positive effects on planners' perceptions and intentions.

Wan et al. (2020) also assessed perceived physical and psychological factors that influences relations between people and urban parks and reported that both categories of influence are significantly associated with relationships between people and urban parks; facilities and management in physical dimension and perceived accessibility in psychological factors are variables most strongly associated with these relations of satisfaction. However, psychological factors were noted as playing a potential mediating role in the associations between physical factors and the people-environment relations.

The literature above enumerates factors such as social and physical factors, accessibility, presence of family and friends, environmental and health benefits, well-maintained parks, presence of social deviants, behaviour of other users and cleanliness of POS among others as some motivating and demotivating factors that influences the use and value of green areas. However, for the purpose of this study, social interactions, accessibility, social and physical factors and safety were considered under motivating and demotivating factors to ascertain how they influence the use or value for green areas in the study area. Social interaction focused on the influence of family, friends and social activity on perceived value of green areas while accessibility focused on closeness, affection and attraction for green areas. Social factors also focused on social behaviour and its associated impacts while physical factors focusing on state of physical features such as vegetation quality, cleanliness etc.

2.4.3 Social Interactions

Individual decision-making has become interdependent, and residents' lifestyle choices are influenced by the behaviour and characteristics of their reference group members. Long et. al, (2019) defines social interaction as the dynamic process of interdependence between the members of a society through the dissemination of information. Long et. al, 2019 further suggest that social interactions can be through three categories namely social learning mechanisms: thus, discussing with or inferring from neighbours' behaviours, psychological sharing of unique experiences and social norms or follow-up effects. Individuals decisions and behaviours which hitherto social interactions, would have been based on personal judgement are often influenced by other members they interact during decisions making. This means that, social interaction greatly influences the perceptions, preferences, expectations, and decisions of decision-makers as a result of the behaviour and perceptions of other decision-makers during the process of interaction.

Deducing from the above discussions, it is very evident that sociocultural factors (norms and customs, beliefs, social interaction and demographic characteristics), when deeply established within a population, becomes very significant in influencing opinions, perceptions and motivating behavioural responses. However, it is notable to mention that, the extent to which

sociocultural environment can influence perception and behaviour depends very much on the degree to which individuals identify with their social and cultural environment. This possibly can explain why perceptions vary across cultures and do not very often reflect the reality.

2.5. The Concept of Perception

The concept of perception is one that lacks a globally accepted consensus on a singular best practice. This is due to the interdisciplinary nature of the concept and the varying subjective instruments used in its measure, thereby making the general measure of perception complex and very thought-provoking Susan (2014). The term perception has been widely used in several fields such as physiology and psychology where it's examined on the basis of neurons that enacts, and in relation to how individuals respond to stimuli such as hearing, touching, taste, smell etc. and interprets them in a specific and personal way respectively.

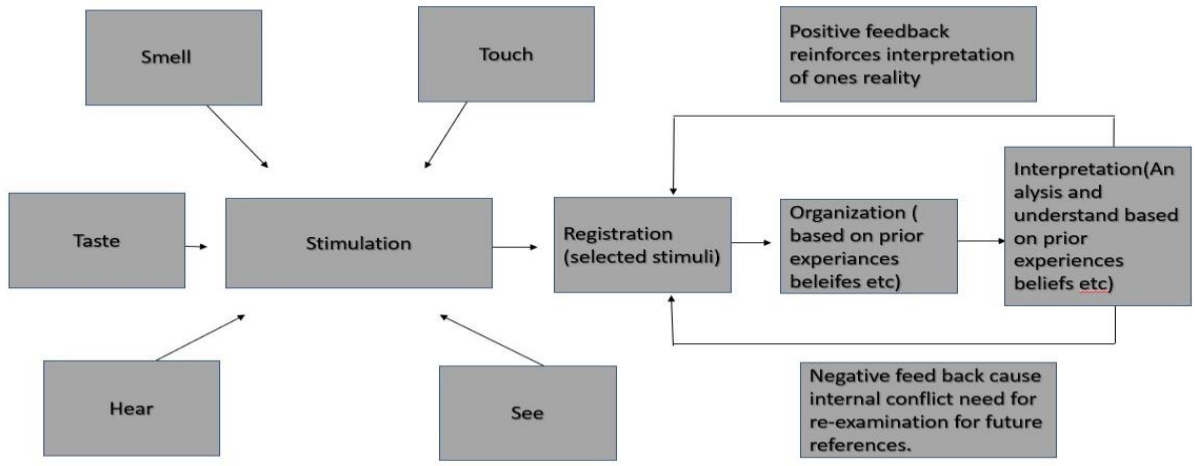
According to Webster's New World College dictionary (2014) perception originates from the Latin word 'Perceptio', a past participle of percipere meaning to perceive. It defines it as "1a. the act of perceiving or the ability to perceive; mental grasp of objects, qualities, etc. by means of the senses; awareness; comprehension; 1b: insight or intuition, or the faculty for these; 2a: the understanding, knowledge, etc. gotten by perceiving; 2b: a specific idea, concept, impression, etc. so formed". The American Heritage dictionary of English Language (2016) also describes perception as a noun defined as "1a: the process of perceiving something with the senses; b: an instance of this; 2**a.** The process or state of being aware of something; **b:** insight or knowledge gained by thinking; **c:** the capacity for such insight or knowledge; **d.** an insight or point of knowledge; 3: an interpretation or impression; an opinion or belief".

Several authors have also similarly defined the concept of perception. According to Mosunova (2017, pg. 2) "Perception refers to the phenomena, starting with a simple comprehension by a person of what happens to him at some moment of being (spontaneous understanding) and ending with the generalization of sensory or understanding experience in the form of reflecting the objective reality around us in the image of the world and its individual fragments". Pickens (2005) in a study of perceptions and attitudes opines that, perception is closely related to attitudes. He defines perception as a process by which organisms understand and organise sensation such as smell, touch taste, sound and sight to produce a meaningful experience of the world and outlines four stages in the perception process namely stimulation, registration, organisation and interpretation. This is in line with the viewpoint of Mosunova(2017) on the 3 features of perception that most diverging authors agree on: perception as a form of understanding sensory reflection of reality in consciousness; perception as ability to understand and learn through sensory reflections; and perception as the ability to form the integral image of the external world from its learned elements. This is also confirmed by Hwang, (2011) who suggest that, perception utilizes sensory and cognitive processes to appreciate the world around us since it is a unique way of understanding phenomena by interpreting sensory information based on experience, processing information, and forming mental models. Therefore, in order for perception to occur, 3 defining attributes namely sensory awareness or cognition of the experience, personal experience and comprehension that can lead to a response must be present.

From the above, it is essential to note that, perceptions involve how one sees, understands and interpret the world around him based on personal experiences. Understanding perceptions and being able to accurately explain it is quite a difficult task since individual perceptions are often far from the reality. This is because, social influences such as gender, education, and socioeconomic status may affect one's perception, since perception is a personal demonstration of how one views the world that is coloured by many sociocultural elements Hwang, (2011). In order to under understand and appreciate individual behaviour outcomes therefore, it is

critical to appreciate the uniqueness of an individual's perceptions and to understand how they are formed. This concept is very important to the study because, the main variables of the study, thus sociocultural factors form the basis of one's perception since it dominates in an individual environment or setting, thereby possessing a high possibility of influencing learning outcomes as well as perceptions.

Figure 1: Perception Framework Processing System adopted from Pickens (2005)



2.6 Sustainability Theory and the link to Green Areas

The sustainability theory traces its origin from the Brundtland report on sustainable development in 1987. The Brundtland report which was also in response to the famous "Limits to Growth" report by the Club of Rome endorsed the idea of sustainable economic growth and stated that, it was possible to conciliate economic growth with environmental preservation. By this it was possible to grow economically and preserve the environment. This gave rise and opened the idea of the theory of sustainability in 1999 which suggests that, it is possible to grow economically, preserve the environment and at the same time improve the social quality of life. The theory has three main pillars namely Economic, Environment and Social with each pillar having its unique set of objectives. The economic pillar seeks to promote sustainable growth by maximising profit and expanding markets. The social pillar seeks sustainable economic growth to increase economic quality, satisfy basic human needs like shelter, jobs, water, health, safety etc, guarantee participation and transparency and also to improve liveability. The environmental pillar which is of essence to this study equally seeks to preserve carrying capacities, thus the amount of development an area can have without being destroyed. The conciliation these three pillars often result in resource conflict which according to Campbell, (1996) remains a dynamic state of equilibrium. This theory gave rise to the concepts of sustainable city, smart cities, compact cities and liveable cities among others.

For the purpose of this study, the sustainable city and liveable city concepts were highlighted as key features of these concepts formed essential parts of variables and indicators to be measured by the study and hence the use of the theory. A sustainable city is one that is a liveable city, a place that very well manages its flows, place and people/participants. Flows refers to inputs and output as natural resources as well as goods and services, its place refers to the living city whiles the participants refers to the participating of people in managing the city. Liveable city possesses key characteristics such as quality of life, health and safety, accessibility, general well-being and aesthetics provided by greenery of nature.

2.6.1 Concept of Green Areas

Green space is a term that can mean a vast number of things to different people. Various disciplines and individuals have defined it to be of various focus points. Green areas are outdoor places with significant amounts of vegetation, existing as either managed areas or remnants of natural landscapes and vegetation. They may consist of parks and recreational spaces, open spaces/vegetation, grass, gardens, lawns, wetlands, wasteland areas, and farmlands, woodland/forest areas (Shackleton & Blair, 2013; Francis & Chadwick, 2013).

Aydin et. al., (2012) defined green spaces as "a type of land use which has notable contributions to urban environments in terms of ecology, aesthetics or public health, that basically serves human needs and use". This definition is worth noting as it situates green areas in the context of the values it provides, thereby depicting a direct relation in terms of the variables to be measured by this study. Green areas also describe level of vegetation, ranging from sparsely landscaped streets to tree-lined walkways to playfields and forested parks, combined areas of open land, cropland, urban open land, pasture, forest, and woody perennial" (Almanza et al., 2012; Tavernia et. al., 2009; Lachowycz & Jones, 2013; Chong et al., 2013**).**

As evidenced above, "green space or areas" means different things to a multitude of specialists. As much as these definitions makes it easier for one to determine what is green and what is not, green areas have acquired a number of meanings such that, it is almost impossible to keep track of how it is used. Whiles some definitions depict a human-centric thinking of green areas without consideration for environmental conservation, others simply see it as places that look green, that can hark back to a natural sense of living (Heckert, 2013). This annuls the over-intellectualizing about what we consider as green areas thereby requiring a more direct definition. In Ghana, urban green space refers to unused landscapes in cities or towns such as parks which have sufficient greenery on them to make them ameliorate the harsh conditions engendered by concrete structures in such areas (Barnes, 2014). Comprehending what green space is therefore a messy process, as it depends on who is looking at it. For the purpose of this study, green areas or spaces will be considered as outdoor places with significant amounts of vegetation, existing as either managed areas or remnants of natural landscapes and vegetation. They may consist of parks and recreational spaces, open spaces/vegetation, grass, gardens, lawns, wetlands, wasteland areas, farmlands and woodland/forest areas (Shackleton & Blair, 2013; Francis & Chadwick, 2013).

2.6.2 Concept of Urban Sprawl and Loss of Peri urban Green Areas

The concept of urban sprawl in landscape research lacks a universally accepted definition but has been used by urban managers to often refer to a careless type of urban development. While many scholars have described it using themes like economic sprawl, geographical sprawl and transportation sprawl, others have explained it as resulting from growing urban densities, population growth as well as land use and racial segregation (Cobbinah & Adomako, 2012; Johnson, 2001). Urban Sprawl refers to an unconnected, scattered, uneven and unguided pattern of peripheral development characterised by dispersed physical development and absence of basic social amenities and mostly located beyond urban fringes (Cobbinah & Adomako, 2012). It is often characterised by depletion of green spaces, lack basic infrastructure, unregulated, leapfrog development, traffic congestion, high use of automobiles and high cost of service provision (Masoumi et al., 2018). Peri urban areas receive the most impact of urban sprawl as development are doted across and spread out over its landscape. A key relationship between urban sprawl and peri urban development is the loss of peri urban green spaces. Peri urban green spaces which hitherto provided aesthetics, quality of life and recreational opportunities for peri urban dwellers and promoted their physical, psychological and general well-being are lost to the built environment due to urban sprawl (Abass et. al.,

2018; Appiah et. al, 2014). Expansions in peri urban infrastructure continue to threaten green spaces with potential negative implications such as loss of livelihoods, pollution and environmental degradation for affected communities as huge areas of urban green spaces are rapidly being lost (Dumenu, 2013; Abass et. al., 2018). This implies the loss green and soft permeable surfaces to hard impermeable surfaces, posing a worrying trend for peri urban communities, in view of the growing global recognition for the benefits of green spaces and the need for their preservation.

2.7 Perceived Values of Green Areas

The contribution of green areas to the nascent discourse on global ecosystem services (ES) is steadily gaining grounds (Abass. et. al, 2019; Samantha et. al, 2014). Ecosystem services refer to the benefits provided by the environment such as provision of food and water, climate control and cultural and recreational benefits. Samantha et. al., (2014) outlines three value-domains that are associated with Ecosystem Service (ES) values: the ecological, economic and socio-cultural or aesthetics domains. According to Ordonez-Barona, (2017, pg. 66), "values are useful to understand how people relate and assign importance and meaning to things". Value can also be conveyed as a perspective that express our need to benefit from nature (Dietz et al., 2005; Ives and Kendal, 2014 in Ordonez-Barona, 2017). Bratman et al., (2012) in Ordonez-Barona, (2017) opines that values are best explored by focusing on the relationship or collaboration of individuals and groups with significant objects and space since people perceive nature as a concrete object or space.

These views on values validates the propositions of the Sociocultural theory of Cognitive behaviour and VBN theory that suggest that, values are informed by factors from the social and cultural background in which an individual was nurtured, thus, an individual's personal characteristics and social environment, ethnic affiliation, religion, customs, personality traits and lifestyles among others. This reemphasises the fact that, human behaviours are mostly the functioning of specific sociocultural systems in which culture dictates behaviour (Olatunji, 2015). Value of green areas for the purpose of this study will defined as the benefits people derive from or perceive about green areas and are mostly social, cultural or aesthetics, physical or health, economic and environmental or ecological benefits (Abass et. al., 2019; Balram et al, 2005). More specifically aesthetics, physical or health and ecological benefits were considered as sub variables for this study.

2.7.1 Aesthetic Values of Green Areas

While scholars increasingly address cultural ecosystem services (ES), the concept of aesthetics or socio-cultural values of ESs still remains a serious gap in ES research (Daniel et al., 2012; Milcu et al., 2013 in Samantha et. al., 2014). Aesthetics or cultural values of green areas are defined as the beauty presented by greenery and the importance people, as individuals or as a group, ascribe to bundles of green areas (Samantha et. al., 2014). Aesthetic values reflect both material and non-material well-being connected to green areas, such as spirituality, beautification, cultural heritage and sense of plac**e** (Chan et al., 2012; Daniel et al., 2012; Milcu et al.,2013; in Samantha et.al, 2014). The determinants of aesthetic values often emanate from a social context thus cultural background, social network and institution or are based on personal characteristics such as value orientations, location of residence, education level, income, age, gender etc. These are often reflected in either group values or individual values (Samantha et.al, 2014).

Yli-Pelkonen (2013) revealed that, residents of Helsinki valued nature areas due to easy accessibility and frequently spent considerable amount of time there with the aim getting recreational experiences, most importantly getting "feel-good feeling" and physical exercise, associated with walking and sports-like activities. Wolsink (2015) in an examination of the

value of urban green areas for environmental education among all secondary schools in Amsterdam elucidated how proximity of schools to green spaces and its effect on fieldwork has influenced the 'sustainable city' and 'liveable city' debate. Proximity of schools to green areas has been noted as crucial for fieldwork excursions since it establishes a pattern of outdoor environmental education, that shapes teachers' attitudes on excursions. Lee et al. (2010) by assessing health effects of green space found that, environmental factors such as the quality and accessibility of green space accounted for weak evidence for the links between physical, mental health and well-being and urban green space and its use for physical activity. However, user determinants, such as age, gender, ethnicity and the perception of safety, were also important in determining result. The findings of Yli-Pelkonen (2013); Wolsink (2015) and Lee et al. (2010) on perceived values for green areas are not that different from that of Kuldna et. al., (2020); Wan et. al., (2020); Zhang et. al., (2015) and Jim et. al., (2013) on sociocultural influence on value for green areas, who identified perceptions on resident satisfaction levels in relation to green areas as mainly influenced by sociocultural factors such as age, gender, ethnicity and the perception of safety as well as accessibility and quality of green areas as indicated as factors influencing perceived value for green areas. This clearly indicates how sociocultural influence perceptions and behaviour of individuals towards green areas.

2.7.2 Ecological Value of Green Areas

Ecological values of green areas are expressed in terms of how green areas contribute to maintain and preserve the health of the environment using indicators such as resilience and diversity (Samantha et. al., 2014). Gowda et al (2008) revealed how the abundance of parks and avenue trees and green areas along with green median and traffic islands in the city of Bangalore, provided shade and met purely ecological and aesthetic needs. The study also showed beneficial impact of green areas on the microclimate of the city, and also as outdoor recreation areas to the people of the city. Sodoudi et al. (2018) also explained the correlation between the spatial configuration and the cooling effect of green areas with 25 idealized scenarios representing green areas with five different spatial configurations and five vegetation types by highlighting the influence of the fragmentation degree, shape complexity, orientation of green belt, and vegetation type on the cooling effect of a green area. Paul et al. (2017) also assessed the importance of parks for visitors with focus on Delhi and reports that, almost all respondents expressed the need for more green spaces. Visitors valued parks primarily for environmental benefits. Yli-Pelkonen (2013) equally opines that, recreational ecosystem services partly result from specific landscape features in the nature area and from biologically diverse nature. The above findings are equally in sync with the motivating factors and factors that influence resident's satisfaction levels for green areas. The role of sociocultural factors on influencing perceptions is again further strengthened by this relationship.

2.7.3 Physical and Health Value of Green Areas

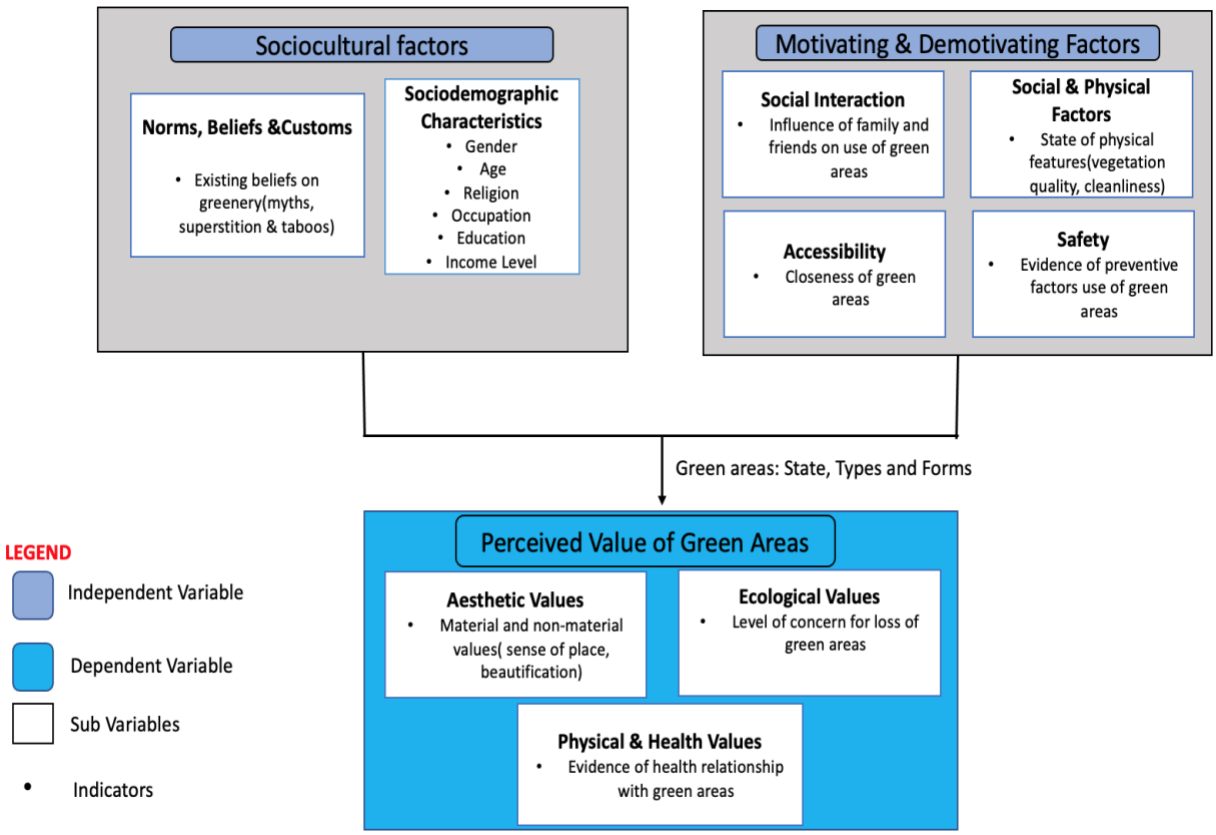
Physical and health values of green areas refer to benefits derived by resident and users of green spaces. They are often in the form of psychological or metal, physical and emotional health benefits. Kim et al. (2019) by ascertaining if human health and well-being benefits can be attributed to green infrastructure projects revealed that, higher visitor frequency and closer distance from home to green infrastructure resulted in positive psychological benefits and place attachment. There was also a positive relationship between level of physical activity that people engage in and the distance to the green infrastructure site, physical health and place attachment. Females were interestingly found to have higher physical health benefits than males who reported lower psychological benefits. Paul et al. (2017) equally revealed that, visitors valued large, well-maintained and publicly accessible parks in a crowded city primarily for psychological and physical health benefits.

Campagnaro et al. (2020) in accessing visitors' perception of typical green spaces, with a focus on vegetation structure and the presence of typical historic city walls, as well as preferences within the context of perceived stress and safety highlighted that, general stress relief and safety perception of respondents depended on different site characteristics. Respondents preferred a complex but not too wild scenario with sparse trees and aesthetically appealing features such as colourful flowers. While general preferences were very similar to stress relief preferences, preferences within the context of safety differed for some attributes with historic walls having a negative effect on general preferences. All the above findings on the perceived health values of green areas are related with the motivating factors, demotivating factors and resident's satisfaction levels under the subheadings 2.4: 2.4.1, 2.4.2, and 2.4.3 depicting how sociocultural factors influence perceived values of green areas. This reveals a strong link between sociocultural factors and individual perceived values for green areas and therefore calls for a careful analysis of sociocultural factors in the design and provision of green areas in other to meet resident's expectation.

2.8 Type and Form Green Areas

A variety of green spaces ranging from wetlands, public parks, trees/shrubs, farmlands among others are found in study area in Kumasi. Studies (Gowda et. al., 2008; Kusumandari, 2014; Barkhuizen et al., 2019; Hong et. al., 2019; Zysk et. al., 2019; Nagase et. al.,2020) have shown that green areas are of varied forms ranging wetlands, public parks, trees/shrubs, farmlands to avenue trees, green grass cover, green roofs on buildings and turf green roofs providing various benefits of people's relaxation and engagement, cognitive and aesthetic needs. As much as these greeneries are of several functions to the residents, the state of these greeneries is in very deplorable states due to various reasons. Details on the forms or types of green areas and the responsible factors for the poor state of these green areas will be thoroughly developed in chapter four of this research.

Figure 2: Conceptual Framework



Chapter 3: Research Design, Methods and Limitations

3.0 Introduction

This chapter provides the methodology used in answering the main and sub research questions. Concepts and variables were operationalized by defining them in the context of the research based on literature reviewed and conceptual framework as discussed in chapter two. Revised research questions, data collection methods and research instruments together with sampling methods used in this study have also been presented. Furthermore, limitation of the study as well as challenges with validity and reliability have equally been highlighted. To conclude the chapter, data analysis techniques used in analysing results to answer the research questions have been discussed.

3.1 Revised Research Questions

The research questions for the study were revised as follows;

3.1.1 Main research question

How do sociocultural factors and motivating or demotivating factors influence perceptions on value of green areas in AKSD, Kumasi?

3.1.2 Sub research questions

- What are the forms or types of green areas in AKSD, Kumasi?
- How do sociocultural factors (beliefs, norms and customs) influence perceived value of green areas in AKSD, Kumasi?
- How do motivating and demotivating factors influence perceived value of green areas in AKSD, Kumasi?
- What are the perceived values of green areas in AKSD, Kumasi?

3.2 Description of Research Design

This study was an explanatory research and adopted a single case study, being the Afigya Kwabre South District. A case study design was chosen because the study required an in-depth analysis to explain how sociocultural factors influences perceptions on value for green areas in the study area. A case study conducts an enquiry into an event with the aim of giving detailed account. It performs an in-depth explorative, explanatory and descriptive assessment on the subject of interest to answer the questions of why and how the phenomenon is occurring with the aim of gaining a rich and qualitative understanding. According to Van Theil (2014 p.86), "A case study is a research strategy in which one or several cases of the subject of study are examined in an everyday, real life context. A case can be almost anything: a group, an organization, a country, a city or neighbourhood, an event, a relationship, a project or process".

3.3 Data Collection and Sampling Instrument

3.3.1 Data Collection

This study collected both primary and secondary data to answer the main research and sub research questions.

3.3.2 Primary Data

Primary qualitative data for the study was gathered with the help of semi-structured interviews and observation as research instruments. Semi-structured interviews are interviews that are conducted with an open-ended questionnaire or interview guide (Van Thiel, 2014). These instruments helped to gather rich qualitative data since it gave room for research assistants to seek clarity by asking supplementary questions. To conduct these interviews, teaching

assistants of the Kwame Nkrumah University of Science and Technology (KNUST) in Ghana who were hired by the PBL-Project team as Research Assistants to support in data collection. They were trained on how to conduct interviews by the researcher, who could not be physically present on the field due to the COVID-19 pandemic. Key themes in the interview guide were translated to research assistant to ensure that right questions were asked in gathering the required data. This aided in gaining insights on the variables being measured as measuring people's perceptions and opinions required an in-depth probe into the phenomenon. Respondents consent were sought to record conversation. This enabled the research assistants to remain focused on the discussion. Documentation was done in the form of notes taking of key things observed during the interviews and on the field. Pictures were taken on the types and forms of existing green areas during field visits to augment interviews.

3.3.3 Secondary Data

Secondary data was gathered from relevant district reports, academic documents, maps and photographs. This was done for the purpose of validation and also to serve as an extra source of data for the purposes of triangulation of data.

3.4 Sampling Design: Sampling Technique and Sample Size

Purposive sampling was used to select a sample size of 30 respondents for semi-structured interviews from four communities in the district namely Hemang, Ntiribuoho, Buoho and Kodie. 8 respondent each were drawn from Buoho and Kodie while 7 each were drawn from Hemang and Ntiribuoho. These respondents included 17 males and 13 females comprising Chiefs, Opinion Leaders, Household Heads, Techers, Students, Religious heads, Professional and service providers selected with the presence of some sociocultural factors like age, education, religion, gender occupation and income level. This was done for purposes of triangulation, to ensure a representative sample, highlight variations in responses and also to ensure the extraction of in-depth information and varied opinions on the subject under study. However, due to the observation of safety protocols owing to the corona pandemic, a total number of 16 respondents, (4 each from Kodie, Buoho and Ntiribuoho, and 3 from Hemang) availed themselves for interviews. This negatively affected the study since the expected number of respondents were not reached to gain the expected variations in responses. Purposive sampling was the most suitable method since the study involved gaining in-depth knowledge on how sociocultural factors influence perceived value of green areas. The table below show the breakdown and characteristics of estimated sample and actual number of respondents interviewed;

Table 1: Characteristics of total respondents interviewed

Respondent	Estimated Sample Size		Actual Sample size		Community	Criteria for Selection
	Male	Female	Male	Female		
Chiefs	2		1		Kodie	Custodian of lands and knowledge in sociocultural practices
Queen mothers		2		1	Ntiribuoho	Custodian of lands and knowledge in sociocultural practices
Opinion Leaders (Elder & assembly member)	2	1	2		Kodie, Ntiribuoho	Recognised members of the community who have a say on sociocultural issues
Household heads (male and female headed	4	3	2	2	Kodie, Buoho, Ntiribuoho, Hemang	Fathers or mothers playing traditional roles head of family

household decision makers)						with knowledge in culture and social set up
Teachers	1	2	1		Hemang	Educational background and to ensure representativeness in sample
Students	1	1	1	2	Kodie Hemang, Ntiribuoho, Buoho	Age difference and persons still going through the process of social and cultural transformation
Religious Leaders (Christian, Muslim and traditional priest)	2	1	1		Buoho	Sociocultural role as religious heads
Professionals	2	1	1	1	Kodie	Officers of the District Assembly Experience Knowledge in landscape planning
Residents (shop owners, artisans, hairdressers etc.)	2	3	1		Buoho,	People who live and work in the community with experience in living in area over time and knowledge in sociocultural issues
Total respondents	**17**	**13**	**10**	**6**		

3.5 Validity and Reliability

3.5.1 Validity

Validity of the study was measured internally and externally. Internal validity refers to the cogency of the study itself. It observed whether the researcher really measured what was intended to measure (Van Thiel, 2014). It measured the degree to which the study accurately answered the questions it intended to answer. External validity on the other hand measured the extent to which the results of the study can be generalized. Considering the limitations of the case study strategy, data collection methods and the general challenges encountered during the study, the research cannot be overly generalised, thereby hampering the external validity of the research. However, to ensure internal validity, operationalization was done based on adequate translation of theoretical concepts. For the purposes of triangulation, respondents were selected from nine different categories and interviewed. Secondary data from district relevant reports, academic documents, field documentation, photographs as well as reviewed literature were used to in measuring variables to validate findings. Peer debriefing was done with other researchers on the PBL Project team to enable them probe and ask questions on the processes and findings. This helped in identifying weak argumentations which were worked on to enhance validity of the research.

3.5.2 Reliability

Reliability of a study is a function of the accuracy and consistency with which variables were measured (Van Thiel, 2014). It means the degree to which the research instruments measures what is supposed to be measure or whether or not an instrument of measure yielded the same answer in more than one measurement. Considering the different ways of collecting data (open design) especially with interviews and the smaller units of study, the likelihood of a reduction in the reliability of data gathered was anticipated. To offset this, a database of all sources of data and processes of activities carried out were kept for cross checking. Questions and interview guides were formulated based on information obtained from extensive literature. Questions were appropriately phrased. Key themes in the questionnaires were explained to research assistants to avoid ambiguity in interview guides and wrong questioning which helped

to prevent interviewer bias. In addition to peer debriefing, outcomes were also discussed with some professionals in the field such as the Development and Physical Planning Officers of the study area, who were key respondents of the study to find out whether findings were recognisable and reflected the true picture on the ground.

3.6 Data Analysis Method

Qualitative data gathered through semi-structured interviews and observation were manually transcribed and read. Data was organised and analysed in atlas.ti software and manually with the use of a frequency distribution table. Important concepts were also highlighted to aid in coding for a qualitative analysis in Atlas ti software. Coding was systematically done as data units were grouped at variable, sub-variable and indicators level as derived from research questions. The co-occurrence table in atlas.ti gave a starting point to look for possible hidden relationships between variables and indicators. Even though it didn't tell what the co-occurrences meant, it showed how indicators and variables co-occurred which guided in identifying which quotations needed to be read thoroughly and highlighted for analysis. Findings were adequately interpreted and validated with secondary data. Maps and photographs were presented as visual impressions to validate findings. Direct quotations during were used to enrich analysis and presentation of results.

3.7 Challenges and Limitation of the study

Some unforeseen challenges were encountered during data collection. The researcher was unable to personally conduct field interviews due to the corona pandemic. Local research assistants were hired by the PBL team to conduct interviews under the directives of the researcher. This did not allow researcher to probe further for deeper insights as anticipated. All targeted sample size could not also be reached by research assistants as at the time of data collection due to the observation of social distancing protocols as a result of the corona pandemic. Even though Research assistant were trained by researcher, they could not ask all questions as expected, and as a result collected some data that were not required. Some respondents also abstained from answering questions thereby resulting in some unanswered questions. Considering the focus of the research, it would have been interesting to compare two cases to really appreciate results in different context but due to time limitation of the UMD programme, this was not possible.

3. 8 Operationalization: Definitions of Variables and Indicators

Table 2 Definition of Variables

Theory	Variables	Definition	Sub-variables	Definition
Sociocultural Theory of Cognitive Behaviour	**Sociocultural factors**	Sociocultural factors are a combination of social and cultural factors that depicts customs, lifestyles, beliefs, values and norms that characterize a society or influence a society's way of interaction, attitudes and perceptions (Gashu et. al., 2019; Appiah et. al., 2017).	Norms and customs	Social norms are rules or expectations through which a society guides the behaviour of its members and often reflect social values. Social norms are mechanisms of social control which promote conformity. They can be both proscriptive, regulating what we should not do and prescriptive, establishing an expectation of what we should do (Lawan and Zanna, 2013).
			Beliefs (Religion, superstitions, myths, taboos etc)	Tondeur et. al, 2016 opines that beliefs are psychological understandings, premises, or propositions felt to be true and that the totality of one's beliefs about the physical and social world, as well as beliefs about oneself, is postulated to exist within a comprehensive beliefs system.
			Socio-demographic Characteristics (age, income level, gender, educational level, lifestyle and occupation)	Socio-demographic characteristics will be age, income level, gender, educational level, lifestyle and occupation which will ensure representativeness of sample and also to bring out the dynamics in responses
			Motivating and demotivating factors	Motivating factors and demotivating factors for the purpose of this study, were considered as elements that had the tendency to influence one's use or values for green areas either negatively or positively. They included social interactions and accessibility, social and physical factors and safety.
Sustainability Theory	Perceived value of green areas	Perceived value of green spaces refers to the benefits people derive from or perceive about green spaces. They could be social, aesthetics or cultural, physical or health, economical or environmental benefits (Abass et. al., 2019; Balram et al, 2005).	Aesthetics, (religious, cultural and spiritual values etc.)	Aesthetics or cultural values of green areas are defined as the beauty and importance people, as individuals or as a group, ascribe to bundles of green areas reflect that both material and non-material well-being connected to ecosystems, such as spirituality, aesthetic values, sense of place (Samantha et. al., 2014).
			Ecological Values	Ecological values of green areas refer to how green areas contribute to preserve the health of ecosystems or the benefit of the environment to society (Samantha et. al., 2014).
			Physical and Health	Physical and health values of green areas refer to benefits derived by resident and users of green spaces. They are often in the form of psychological or metal, physical and emotional health benefits. Kim et al. (2019)

Table 3: Operationalisation of Variables and Indicators

Theory	Variable	Sub-variable	Indicators	Data Collection method	Research Instrument	Source of Data
Sociocultural Theory of Cognitive Behaviour Values, Beliefs and Norms Theory	Sociocultural Factors	Norms Beliefs and customs (Religion, superstitions, taboos, myths)	• Knowledge of existing rules on the preservation of green areas (social norms controlling or promoting conformity) • Existence of traditionally accepted values for green areas. • Existing beliefs or faiths on greenery (myths, superstitions, taboos etc.) • Existence of general religious views on green areas	Primary Qualitative data Secondary Qualitative data	Semi-Structured interviews Field Observations	Chiefs Opinion Leaders Household Heads Professional Available relevant reports Resident/Service Providers
		Sociodemographic characteristics	• Gender • Age • Religion • Occupation • Education • Income Level	Primary Qualitative data Secondary Qualitative data	Semi-Structured interviews Field Observations	
	Motivating factors (MF)& Demotivating Factors (DF)	Social Interactions	• Evidence of social activity and relation with green areas • Influence of family and friends on use of green areas • Influence of green areas on social development/cohesion	Primary Qualitative data Secondary Qualitative data		
		Accessibility	• Closeness of green areas • Affection for and attraction to green areas			
		Social and physical factors	• Evidence of preventive factors on the use/keeping of green (social behavior) • State of physical features (influence of vegetation quality, natural appearance, cleanliness)	Primary and Secondary Qualitative data		
		Safety	• Feeling of safety			

Sustainability Theory	Perceived value of green areas	Aesthetics Values (religious, cultural and spiritual values etc.)	• Level of appreciation of open green spaces and natural landscape • Appreciation of beauty provided by green areas • Material and non-material wellbeing/values e.g. Spirituality, sense of place, cultural heritage, beautification etc. • Presence of aesthetically appealing features such as colorful flowers and place attachment	Primary Qualitative data Secondary Qualitative data		
		Ecological Values	• Level of concern for changes in green areas • Evidence of environmental benefits of green areas (air quality, aesthetics, cooling effects, climate change etc.) • Evidence of the need to preserve the green areas	Primary and Secondary Qualitative data		
		Physical and Health Values	• Evidence of psychological or mental, physical and emotional benefits of green areas • Evidence of health relationship with green areas • Positive psychological benefits and place attachment	Primary Qualitative data Secondary Qualitative data		
	Green areas	Types/forms of green areas	• State of green areas • Existing types of green areas	Primary and Secondary Qualitative data		

Chapter 4: Presentation of data and analysis

4.0 Introduction

This chapter presents findings and analysis from data collected through interviews, field documentation and secondary sources as discussed in chapter three. The chapter recaps a description of the case and sample, as well as a presentation and analysis of data to answer the research questions. Presentation and analysis of data is organised according to the order of sub research questions. Sub variables with their respective indicators have been explained with an overview on summary of responses for each indicator, presented in a table for each research question for purposes of clarity. A discussion on summary of findings per each sub variable is also presented.

4.1 Description of Case Study

As discussed in section 1.6, the case was selected mainly because of its location, presence of rapid depletion of green areas and its endowment with religious and cultural sites as a way of preserving green areas, hence strengthening the relevance of the case. A detailed map of the case study area showing the study communities as highlighted in yellow is presented below:

Figure 3: District Map showing study communities highlighted in yellow. Source: AKSDA Planning Office, 2020

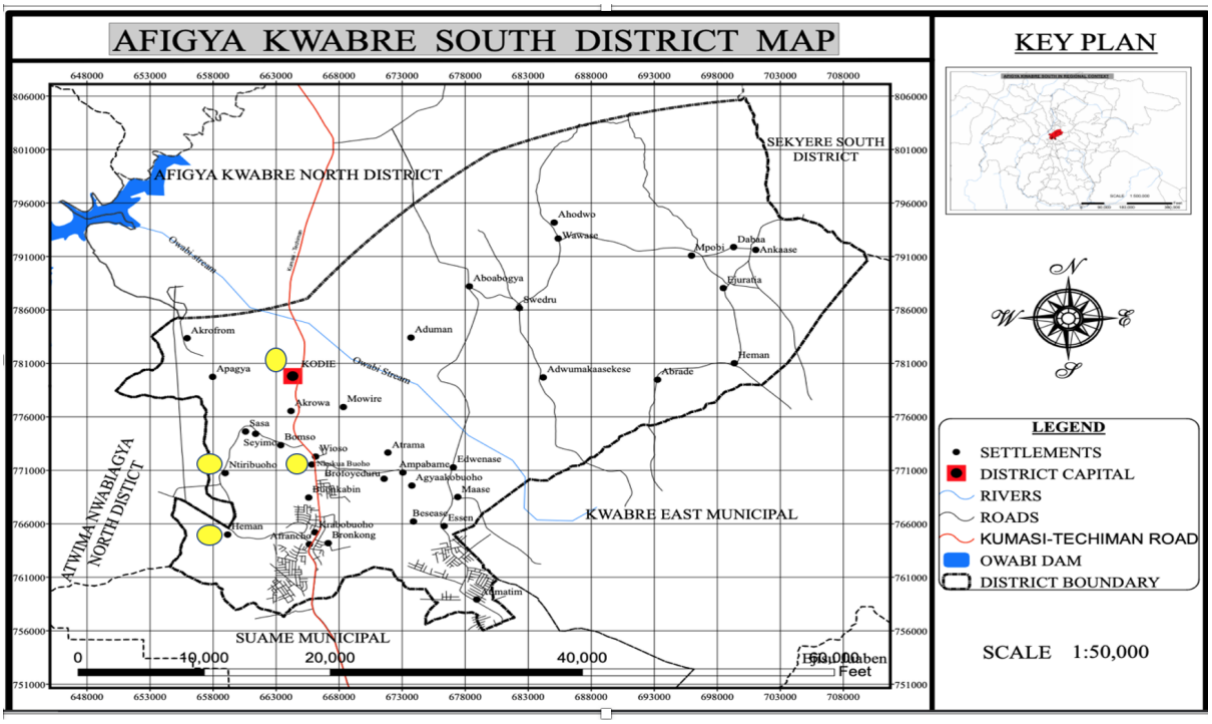


Figure 4: Output of Co-occurrence tool in Atlas.ti. Source: Author, 2020

4.2. Description of Sample

As discussed in section 3.5 and table 3.1, a total number of 16 respondents comprising 10 males and 6 females were interviewed out of a targeted number of 30 respondent due to COVID-19 pandemic.

4.3 Presentation and Analysis of Data

As discussed in section 3.5, Atlas.ti software together with a manual frequency distribution table were used to analyse data from all 16 interviews held. Code groups, codes and number of

quotations as analysed in Atlas.ti is presented. A composite frequency distribution table on responses under all sub variable and indicators, as described in section 3.5, is presented. Findings per indicators under each sub question are presented in each section. Analysis for each sub question beginning with a summary of responses from interviews is given in a table. Secondary data and literature have been used to support findings for purpose of triangulation. The table below depicts codes, code groups and number of quotations as used in atlas. ti;

4.3.1. Codes groups, Codes and Co-occurrences

A total of 647 quotation with their respective codes were generated in atlas.ti. Code groups and codes were structured based on variable and sub variable respectively with their corresponding indicators aligned under them. Residents Satisfaction Level, a code which was generated out of the motivating and demotivating factors variable recorded 103 quotations being the highest number of quotations followed by the ecological values code also recording 102 quotations. These high quotations revealed interesting mutual responses shared by respondents which largely have positive implications on the overall findings of the study.

The co-occurrence table as discussed under section 3.5 gave a starting point to look for possible hidden relationships between variables and indicators. It revealed fascinating indicators and quotations and showed how closely they were related by the number of times they co-occurred. Affection for, attraction and closeness to green areas co-occurred with state of physical features 29 times (the highest of all co-occurrences). This depicts a strong relationship between the two indicators and tells how the condition of physical features influences one's affection for green areas. Material and non-material values co-occurred with appreciation of beauty provided by green areas for 15 times. Level of concern for loss of green areas and evidence of the need to preserve green areas recorded 14 co-occurrences. Appreciation of beauty provided by green areas and evidence of environmental benefit of green areas recorded 8 co-occurrences. Material and non-material wellbeing and presence of aesthetically appealing features recorded 6 co-occurrences. Affection for, attraction and closeness to green areas and accessibility of green areas also co-occurred five times. The relationships established by these co-occurrences are discussed in detail under their respective sub questions for clarity.

Figure 5: Output of Co-ocurrence table in atlas.ti.

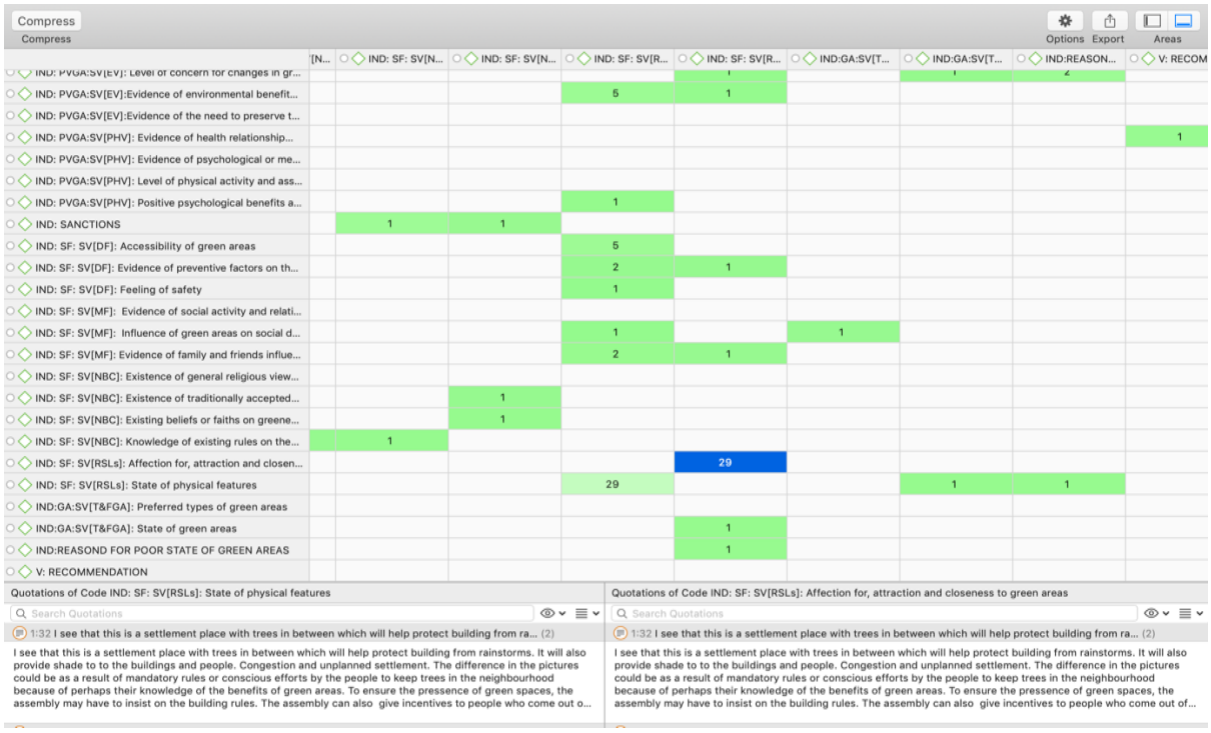


Table 4: General legend for all frequency distribution tables

Colours		Gender	Age	Religion	Education	Income	Occupation
Total No. of respondents		M - Male	A1– Below 20years	Chr - Christian	Bas – Basic Education	Y1 – No income	Pln - Planners
Gender		F - Female	A2 - 30 – 50 years	Mus - Muslim	Sec – Secondary Education	Y2 –100-1000 Cedis	Std - Students
Age			A3 - 50 – 65 years	Trad - Traditionalist	Ter – Tertiary Education	Y3 – 1000 – 2000 Cedis	Tchr - Teachers
Religion						Y4 – 2000+ Cedis	UnE – Unemployed
Education							Other – Farmers, traders, carpenters
Income		Letters M and F italized in blue fonts represent the count of number of respondents per indicator					
Occupation		NB: Cost of a model diet is estimated at **GHC 5.36 ($1.23)** per person per day (Smith et. al, 2017)					

Source: Author, 2020

4.4 Sub Question 1: What are the types and forms of green areas in AKSD

The first sub question sought to find out the nature, kind or types of green areas existing in the district. Green areas sub variable was measured by two indicators namely state of green areas: which sought to know the current conditions of greens and existing type or form of green areas: sought to find out the nature and different kinds of green areas present in the district. Responses depicting the variation in responses per each indicator under the sub variable aligned to sociocultural factors are presented with their respective descriptions;

Table 5: Showing variations in responses on sub variable and indicators for sub question one - Source: Author, 2020

Sub Variable: Green areas																				
Summary of response	Total Res.	Gender		Age			Religion			Education			Income				Occupation				
Indicator 1: State of green areas		M	F	A1	A2	A3	Chr	Mus	Trad	Bas	Sec	Ter	Y1	Y2	Y3	Y4	Pln	Std	Tchr	UnE	Otr
It is not the best. It is getting worse and not much is been done about it *[M, F]*	2/16	1	1		1	1	2					2				2	2				
Very bad. We are losing all to buildings *[M, M, M, M, F, M, M, F, M, F, F ,]*	13/16	8	5	3	5	5	7	3	2	6	6		5	6	1			3	1	2	7
Indicator 2: Existing types of green areas																					
Mainly religious sites like the grotto and the sacred forest *[M, F, M, M, F, M, F, F]*	8/16	4	4	2	3	3	5	1	2	5	3	2	4	2		2	2	2			4
Agricultural lands & Mountainous areas *[M, F, M, M, M, M, F]*	7/16	5	2		3	4	5	1	1	4	1	2	2	1	1	3	2			2	3
Normal trees (wawa, bamboo, nim tree, etc.) *[F, M, M, M, F, M, M, F, M]*	9/16	6	3	1	4	4	6	2	1	4	4	1	2	5	1	1	1	1		1	6
Wetlands *[F, M, M]*	3/16	2	1			3	3				1	1		1		2	1		1		1
School parks [M, *F, M, M, M, F, F, F, M, F, F, M]*	12/16	6	6	2	4	6	7	3	2	6	4	2	4	4	2	2	2	2		2	6
Plantain trees, Open spaces, flowers and grass around hotels and people's homes *[M, M, F, M, F, F]*	6/16	3	3		3	3	3	3		3	2	1	1	3	1	1	1				5

4.4.1 Indicator 1: State of Green Areas

In answering questions about the state of green areas, 2 out of 16 respondents who were officials of the District Assembly, indicated that the state of green areas in the district "were not the best and that the situation was getting worse with not much being done about it" on the part of the assembly. 13 out of 16 respondents indicated that "it is very bad since all green areas were being lost to building with the existing ones not in good state'. This confirms the responses of the officials of the Assembly and also confirms the position of the District Medium Term Development that reports that "the hitherto forested agricultural vegetations being

depleted leaving the district with patches of green due to increasing growth of the built environment". This purports that the district may be insensitive to climate action and as such may be prone to the dangers of climate change such as floods, high temperatures and poor air quality, a situation that could temper with the good health and wellbeing of inhabitants of the district. The picture below depicts the state of green areas and how buildings are rapidly taking over green areas;

Figure 6: State of existing green areas in AKSD. Source: Author's field work, 2020

Evidence of how the built environment is taking over green spaces at Buoho

Figure 7: State of wetlands in AKSD. Source: Author's field work, 2020

4.4.2 Indicator 2: Existing Type of Green Areas

8 out of 16 respondents indicated that existing types of green areas were mainly the religious sites (grotto) and the sacred forest. 7 out of 16 revealed that green areas were made up of agricultural land with mountainous areas. This gives an indication that even though green areas may be depleting rapidly as reported in the District Medium Term Plan of the assembly, a significant amount may still be available for agricultural purposes. More than half of respondents, 9 in number indicated that normal trees such as bamboo, wawa, odum and nim tree forms the main types of existing green areas. School parks recorded the highest number of respondents numbering 12/16 who were made up of 6 males and 6 females comprising of a student, residents and opinion leaders as the main type of green areas. Wetlands and open spaces with plantain trees, grass etc. recorded 3 and 6 respondents respectively with wetlands recording the least of all type of existing green areas. A total number of 6 respondents for plantain trees give an indication of Afigya Kwabre South as an agricultural district is notable in the growing of plantains. This could be a springboard for the assembly to encourage crop gardening as a means of keeping some greens in the face of rapid depletion.

Figure 8: Existing type of green areas in AKSD.

Source: AKSD 2018-2021 Medium Term Development Plan & Authors field work, 2020

4.4.3 Summary of findings on types and forms of green areas

Generally, respondents had a fair idea of what constitutes green areas, thereby endorsing the open scope of green areas' definition adopted by this study. The above findings give an indication of the likelihood of how efforts at meeting Sustainable Development Goals (SDGs) such as goals 2 and 11 by the assembly are being compromised in the study area. The loss of green, agricultural and forest areas to the built environment with the remaining patches of green

areas in very deplorable state imply that the District may be encountering some challenges in its efforts at achieving food security as well as in its efforts at promoting inclusive, safe, resilient and sustainable cities and communities given the current state of green. This could have negative implications that green areas are not well planned for by the district, which if is the case, could affirm the standpoint of Abass et. al. (2019) on the fact that management of green areas is unclear in Ghana's planning frameworks with policy implementer quite unconscious about the need to preserve green areas in the face of urbanisation. All demographic characteristics present in sample were sensitive to the green areas indicator as all respondents agreed on the poor state of green areas and expressed preference for better and well managed green areas. There is therefore the need for the Assembly to make conscious efforts provide access to inclusive and accessible open green and public spaces for all persons as all respondents of all ages and sex expressed interest in accessing and protecting such areas. Agricultural land areas must also be protected to ensure productive and sustainable agriculture.

4.5 Sub question 2: How do sociocultural factors influence perceived value of green areas in AKSD, Kumasi?

The second sub question sought to explain how sociocultural factors influence the perceived value of green areas. Sociocultural factors as a variable was measured with 3 sub variables namely beliefs, norms and customs. Results depicting variation in responses per each indicator under their respective sub variables and aligned to sociodemographic characteristics with the aim of establishing their relationships are presented under this section.

4.5.1 Sociodemographic Characteristics

Socio-demographic characteristics (as described under section 2.3) were also used as sub variables or constants to establish the differences in responses and perceptions. These variables were not of primary interest in the research. As a result, direct questions were not asked about them due to their sensitive nature. Rather, their influence was established through responses on given under various indicators as they helped to better explain some findings. The table below depicts the categories and dynamics of all sociodemographic characteristics that were used.

Table 6: Showing categories and dynamics of sociodemographic characteristics in sample

Socio-demographic characteristics	Category of sociodemographic characteristics	Frequency		
		Male	Female	Total
Age	Below 20 years	1	2	3
	35 – 50 years	3	2	5
	50 – 65 years	5	3	8
Gender	16 out of 30	10	6	16
Income level	N/A	2	3	5
	100 – 1000 cedis	4	2	6
	1000 – 2000 cedis	2		2
	2000+ cedis	2	1	3
Educational level	Basic	4	3	7
	Secondary	4	2	6
	Tertiary	2	1	3
Occupation	Planners	1	1	2
	Carpenters	2		2
	Farmers/Traders	2	4	6
	Teachers	1		1
	Student	1	2	3
	Unemployed	1	1	2
Religion	Christian	7	4	11
	Muslim	1	2	3
	Traditionalist	2		2

4.5.2 Sub Variable: Norms, Beliefs and Customs

Norms, beliefs and customs as defined in section 3.6 under table 3.2. as sub variables sought to find out whether there were social controls which promote conformity in the use of green areas and whether these controls were influenced by sociocultural factor in ascribing values to green areas in the study area. As a sub variable it was measured by four indicators. These indicators and the summary of responses in answering them are presented in tables 6a, 6b, 6c and discussed below;

Table 7: Showing variations in responses on sub variables and indicators for sub question 2

Sub Variable: Norms, beliefs and customs																				
Summary of responses	**Total Res.**	**Gender**		**Age**			**Religion**			**Education**			**Income**				**Occupation**				
Indicator 1: Knowledge of existing rules on the preservation of green		M	F	A 1	A2	A3	Chr	Mus	Trad	Bas	Sec	Ter	Y1	Y2	Y3	Y4	Pln	Std	Tchr	Un E	Otr
Yes, I know both formal and informal rules that exist to protect natural green reserves. *[M, F, M, M, M, F, M, M, F, F, F, M]*	12/16	8	4	3	4	5	9	1	2	4	5	3	4	3	2	3	2	3	1	1	5
I am not aware of any rule *[F, F, M, M]*	4/16	2	2		1	3	2	2		3	1		1	3						1	3
There are rules but people do not abide by them *[M, F, M, M, F, M, M]*	7/16	5	2	1	3	3	6	1		2	3	2	1	4	1	2	2	1			4
People abide by both because of sanctions *[M, M, F, M, M, F, F, M]*	8/16	5	3	2	2	4	5	1	2	4	3	1	4	1	2	1		2	1	2	3
Indicator 2: Existence of traditionally accepted values for green areas.																					
The sacred forest helps us to preserve our culture and traditions *[M, M, F, M, M, M, M, F, F, M*	10/16	7	3		4	6	5	3	2	7	2	1	2	5	2	1			1	2	7
The chief of this community has instructed us to plant trees at the community cemetery and school parks. *[M, M, M, F, M, F, F, M, M, F, F, M]*	12/16	7	5	3	4	5	7	3	2	7	5		5	5	1	1		3		2	7
Taboos on preservation in the past were ways of instilling morals in values in people *[M, M, M, F, M, M]*	6/16	5	1		3	3	3	1	2	5	1		2	2	1	1				2	4
I am not aware of any such traditionally accepted believe *[M, F, M]*	3/16	2	1		1	2	3					3			1	2	2		1		

4.5.2.1 Indicator 1: Knowledge of existing rules on the preservation of green areas

This indicator measured respondent's knowledge on the existence of formal or informal rules on the preservation of green areas and which ones were more adhered to. Formal rules included rules prescribed by government to regulate the preservation of green areas such as buffer zone rules provided by planning scheme as well as bylaws of the assembly on deforestation. Informal rules included any rule or decrees/pronouncements passed by chiefs to preserve green areas; whose default often attracts sanctions. 12 out of 16 expressed knowledge on the existence of both formal and informal rules on the preservation of green areas while 4 out of 16 respondents indicated their unawareness about the existence of any rule. On which of the rules were adhered to most, 8 out of 16 respondents indicated that both rules were adhered to due to likely sanctions. 7 out of 16 however revealed that as much as rules exit, people do not abide by them. Even though this opinion was shared by less than half of total respondents, it was sensitive to all sociodemographic characteristics with the exception of male traditional believers and the only male teacher respondent who did not share the view that rules are not abided by. This could be attributed to the believe in the efficacy of traditional rules passed by chiefs as permitted by culture on the part of traditional believers. All respondents of the Assembly also declined the assertion that rules were abided by due to sanction since they revealed that the assembly is not doing much to protect green areas. The implication of this results is that there are potential weak institutional and justice systems to enforce rules on the preservation of green areas, thereby pointing to the possibility of hampering the realisation of SDG Goal 16 in the district. Efforts needs to be made to develop, promote and strengthen effective and efficient institutions to uphold rules on the preservation of green areas. An excerpt from interviews held with officials of the assembly reveals;

"Rules regarding world bank projects do permit the Assembly to site projects in waterways or on preserved green sites. So, we comply because we do not want funds withdrawn but the

difficulty is with individual users because the assembly does not control lands. The chiefs own the lands. so yes, we have the rules, but the implementation is where the problem is." Said by R1.

Results revealed that, the World Bank provides funding to the assembly on yearly basis under the District Development Facility (DDF) for the implementation of development projects. This funding is the main source of income for the assembly. As part of its criteria for award of funding, assemblies are to ensure that projects are not constructed on areas earmarked as green areas for preservation. Due to the harsh sanctions of withdrawal of funds, assemblies comply to the latter due to fear of losing funds. It will be good if some form of commitment from the community is tagged to these funds to compel chiefs to avoid the sale of green areas. This commitment could be denying defaulting communities in green areas preservation of some basic development projects.

4.5.2.2 Indicator 2: Existence of traditionally accepted values for green areas

This indicator measured the presence of generally accepted traditional values for green areas. 10 out of 16 respondents comprising of 7 males whom were mainly traditional and opinion leaders and 3 female, one of whom was a queen mother and others household heads revealed that the screed forest at Ntiribuoho is highly valued and protected due to its role of preserving culture and traditions as grounds for pouring libation and offering of sacrifices to ancestors. The following are some direct quotes from respondents;

"Yes, our traditional leaders pray to our ancestors in the sacred forest". Said by R6

"Yes, there is a sacred forest in our community for the chiefs and elders to pour libation but due to the intensity of human settlements from people are trying to encroach, but we are doing our best to protect it". Said by R7

This brings to light the influence of traditional religion is aiding in the preservation of green areas in the study area. A good number of 12 out of 16 respondents also expressed knowledge about an order given by the chiefs of Kodie and Hemang to plant trees at cemeteries and school parks to provide shade on the parks for social gatherings and improve the climate of the area. All 12 respondents told how they had involved in tree planting exercises at the community cemeteries and school parks as a result of a rule by chiefs and how that has become a norm in the communities. These findings depict the extent to which tradition such as social norm is influencing perceived values for green areas in the study area. Below are excerpts from interviews;

"Yes. the chief of this community instructed us to plant trees at the school park and community cemetery and the whole community participated in the exercise. As opinion leaders we are doing our best to protect these trees" Said by R4

While 3 respondents who were a male and female planner from the assembly and one retired teacher indicated that they were unaware of any such traditional values, 6 respondents comprising 5 males and one female between the ages of 35 to 60 years confirmed that taboos on the preservation of green areas in the past were ways of instilling morals and values in people. The ages of respondent is an indication of why students who were all below age 20 did not share in the idea of taboos instilling values in people. The extent of the influence of religion as sociocultural factor is evidenced, as all religions present in sample i.e. Christianity, Muslim and Traditional religion believed that taboos on preservation of green areas instilled morals and values in people. Respondents with tertiary level of education however did not express believe in taboos instilling morals and values.

4.5.2.3 Indicator 3: Existing beliefs or faiths on greenery

Table 8: Showing variations in responses on indicator 3 of Norms, Beliefs and Customs Variable

Sub Variable: Norms, beliefs and customs																				
Indicator 3: Existing beliefs or faiths on greenery (myths, superstitions, taboos etc.)	**Total Res.**	**Gender**		**Age**			**Religion**			**Education**			**Income**				**Occupation**				
		M	F	A1	A2	A3	Chr	Mus	Trad	Bas	Sec	Ter	Y1	Y2	Y3	Y4	Pln	Std	Tchr	Un E	Otr
-It is a taboo to go to the farm, forest, river and mountains on Tuesdays [*M, M, F, M, M, F, F, M, M, M, M]*	11/16	8	3		4	7	6	3	2	7	3	1	2	6	2	1			1	2	8
It is a taboo to commit a crime or have sex in the bush *[M, M, F, M, M]*	5/16	4	1		2	3	2	1	2	4	1		2	1	1	1				2	3
Women must not go to the river during menstruation / It is not allowed to farm or cut trees around river bodies *[M, M, M, F M, F, F, M]*	8/16	5	3		4	4	3	3	2	7	1		2	4	1	1				2	6
Rules and taboos are no longer effective like they were in the past *[F, M, M, M, F, M, F, M]*	11/16	7	4		5	6	6	3	2	7	1	1	2	4	2	3	2		1	2	6
I don't know of specific taboos in this community *[F, F, M]*	3/16	2	1	2		1	3				3		2	1				2			1
It's a belief that certain spirits live in trees especially big trees *[M, M, M, F, M, M, F, F, M, M]*	10/16	7	3	1	3	7	6	2	2	7	3		3	6		1		1		2	6

With this indicator, the study sought to find out whether there were existing beliefs such as myths, superstitions, taboos etc about green areas. Findings revealed the existence of some taboos, superstitions and myths about green areas in the study areas. These taboos, myths and superstitions with their respective number of respondents were, 1. not going to the farm, forest, river and mountains on Tuesdays (11/16 respondents), 2. not committing a crime or having sex in the bush (5/16 respondents), 3. women not allowed go to the river during menstruation (8/16 respondents), 4. not allowed to farm or cut trees around river bodies (8/16 respondents), and 5. the belief that certain spirits live in trees especially big trees (10/16 respondents). As much as these taboos exists, 11 out of 16 respondents revealed that these taboos are no longer effective like they were in the past. This was attributed to the influx of settlers in the community, Christianity and education. Excerpts from interviews are quoted below;

"Our ancestors in the past put in place some taboos to govern green areas. All these I believe were done to preserve nature for generations and to let us have rest from our works. Sanctions such as banning one from a particular community existed and this really helped in the past to protect and preserve green areas". but due to education and Christianity, we don't have these taboos or superstitions working well in our community. Said by R 3

The fact that these taboos are no longer effective could possibly explain why green areas are in very deplorable states, thereby revealing a strong influence of sociocultural factors such as taboos, myths and superstitions on value for green areas. 3 out of 16 respondents comprising of 2 students and 1 male trader who were all Christians, however expressed no knowledge about specific taboos in the district. Inferring from the above, these beliefs and faiths undoubtedly provided an informal means of ensuring rest from work for informal workers especially farmers and women as well as protection and care for green areas especially farms, trees and water bodies. This inevitably promotes decent work and economic growth which in turn promotes sustainable development.

4.5.2.4 Indicator 4: Existence of general religious views on green areas

Table 9: Showing variations in responses on indicator 4 for beliefs, norms and customs sub variable

Sub Variable: Norms, beliefs and customs																					
Indicator 4: Existence of general religious views on green areas	**Total Res.**	**Gender**		**Age**			**Religion**			**Education**			**Income**				**Occupation**				
		M	F	A 1	A2	A3	Chr	Mus	Trad	Bas	Sec	Ter	Y1	Y2	Y3	Y4	Pln	Std	Tchr	Un E	Otr
Yes, my religion teaches me about green areas *[M, F, M, M, M, F, F, M, M, F]*	10/16	6	4	3	3	4	8		2	4	3	3	5	1	1	3	2	3	1	2	2
My religion does not directly say anything about green areas, but I know the importance of green areas and the need to preserve it *[M, M F, F, M]*	5/16	3	2		3	2	2	3		1	2	2		4	1						5
Green areas aid in our way of worship because we go to the grotto, mountains, forest, riverside and school park to pray and pour libation *[M, F, M, M, F, M, M, F, M, F, M, M]*	11/16	8	4	3	2	6	9		2	4	4	3	5	2	1	3	2	3	1	2	3
Green areas does not aid in our way of worship in anyway *[M, M, F, F]*	4/16	2	2		2		1	2		2	1	1		2	2				1		3

This indicator measured religious opinions on green areas and their likely influence on perceived values of green areas. 10 out of 16 respondents indicated that their religion teaches them about green areas, with 11 out of 16 affirming that green areas aided in their way of worship. It is worth noting that, all religions interviewed, except Muslims believed that green areas influenced their ways of worship since Christians go to 'grotto', a pilgrimage site for Catholics to pray while traditionalists prayed to their ancestors by pouring libations and offering sacrifices in the sacred forest. The quote below is as indicated by a respondent;

"Yes. My traditional and Christian religion all teaches me that it is necessary to protect green areas. Said by R7"

However, 5 out of 16 respondents revealed that their religion does not directly say anything about green areas, but however, they knew the importance of green areas and the need to preserve it. 4 out of them emphasized that green areas do not aid in their way of worship in anyway. It was interesting to note that only one Christian out of the total number of 11 Christians interviewed was of the view that green areas did not influence his way of worship in any way, just as all 3 Muslims indicated. Below are excerpts from interviews conducted;

"As a Christian I can pray anywhere. I don't believe green areas provide any sacred area for prayers. Matthew 6: 5 -7 says that we can pray in our rooms and God will listen. so, I can pray in my room and God will hear, I don't have to go to any green area to pray". Said by 16

"The Islam religion does not specifically say anything about the preservation of green areas. but the religion teaches that we ought to keep our environment clean, protect and preserve natural resource because that promotes good health". Said by R3

"No. As a Muslim we worship in the mosque. There can be greens around the mosque, but it doesn't influence our worship in any way". Said by R 11

4.5.2.5 Summary of findings on Norms, Beliefs and Customs Sub Variable

Concluding from above, it is observed that, norms, beliefs and customs play a significant role in influencing perceived values of green areas. Taboos, myths and superstition are revealed as key sociocultural factors that significantly help in the preservation of green areas and at the same time instils morals and values in people through green areas, thereby influencing perceived values of green areas. The fact that students below age 20 are unaware of taboos could justify the findings that taboos are no longer effective since these students maybe too young to know what pertained in the past. This explains the current state of green areas as

education on these taboos may be lacking and therefore not yielding results on preservation of green areas as they did in the past. In view of the contributions of taboos, myths and superstition to the promotion of decent work and economic growth, beliefs and social norms has the potential to promoting SDG Goal 8. Efforts must be made by both traditional authorities and the Assembly uphold these beliefs. The lack of knowledge by respondents with tertiary level education on existing taboos also confirms the standpoint of Smallbone, et al, (1995) in Olatunji, (2015), that sociocultural factors governs personal behaviour as a result of past experiential learning from one's sociocultural environment, since these respondents revealed that they are not natives but just work in the study area, it is likely that they are not privy to past learning experiences of the study area. Religion is also confirmed to exhibits a strong relationship and influence in determining one's perceived values for green areas as all respondents ascribed different religious values to green areas as a result of their religious orientations. This therefore reveals a positive relationship between the beliefs, norms and customs with religion, age and education considering the diverse responses across these sociodemographic factors.

4.6 Sub Question 3: How do motivating and demotivating factors influence perceived value of green areas in AKSD, Kumasi?

The third sub question sought to explain how motivating and demotivating factors (as discussed under section 2.4 and 3.6) influence the perceived value of green areas. Motivating and demotivating factors variable were measured with four sub variables namely social interaction, accessibility, social and physical factor and safety. All variables were measured with diverse indicators to ascertain their level of influence on green areas. Results depicting variation in responses per each indicator under their respective sub variables and aligned to sociodemographic characteristics with the aim of establishing their relationships are presented under this section.

4.6.1 Social Interactions Sub Variable

Social interactions sub variable measured the likely positive influence of social activities, family and friends on use and value for green areas. It was measured with three indicators namely 1. Evidence of social activity and relation with green areas, 2. Influence of family and friends on use of green areas and 3. Influence of green areas on social development. Summary of responses in measuring the sub variable are presented and discussed in the table below;

Table 10: Showing variations in responses for social interaction sub variable

Sub Variable: Social Interactions																					
Summary of responses	**Total Res.**	**Gender**		**Age**			**Religion**			**Education**			**Income**				**Occupation**				
Indicator 1: Evidence of social activity and relation with green areas		**M**	**F**	**A1**	**A2**	**A3**	**Chr**	**Mus**	**Trad**	**Bas**	**Sec**	**Ter**	**Y1**	**Y2**	**Y3**	**Y4**	**Pln**	**Std**	**Tchr**	**UnE**	**Oth**
People mostly organise parties, weddings and funerals at green areas esp. the grotto, school parks and hotels with a lot of greens *[F, M, M, M, F, M, F, M, M, F, F, M, M]*	13/16	8	5	1	4	8	8	3	2	7	4	2	3	5	3	2	1	1	1	2	8
People go to the grotto for conventions and to pray *[M, M, M, M, F, F, F]*	7/16	4	3	2	2	3	6	1		3	3	1	3	2	1	1	1	2	1		3
Indicator 2: Influence of family and friends on use of green areas																					
I go to the school park to play football, games and have fun and sometimes take photos with friends *[E, F, M]*	3/16	1	2	3			3				3		1					3			
I go to parks with my husband and children *[F]*	1/16		1			1	1					1				1	1				
Indicator 3: Influence of green areas on social development																					
It's a way of bringing the families, rich and the poor together because everyone can visit such places *[M, M, F]*	3/16	2	1		2	1	2	1		1		2		1	1	1	1		1		1
Parks with playing grounds for children helps in child development *[M, F, M, M,]*	4/16	3	1		2	2	3	1			1	3			2	2	2		1		1

4.6.1.1 Indicator 1: Evidence of social activity and relation with green areas

This indicator sought to measure whether green areas influenced social interaction and whether social interaction also influenced perceived value for green areas. Findings revealed that parties, weddings, funerals, and other large social gatherings are key social events organised at green areas especially the school park while others go to the grotto for prayers and religious conventions. Organising of events on school parks recorded a total of 13 out of 16 respondents comprising of 8 males and 5 females with a good representation across all demographic characteristics present in sample. 7 out of 16 respondents also responded in favour of prayers and conventions held at the grotto. Of the 7 respondents, there was no Muslim present, which further reaffirms the lack of influence of green areas on their way of worship. Excerpts from interviews are presented below;

"funerals are often organised on the school park. one of our teachers was buried on Saturday and everything was organised on the school park". Said by R 16

"I don't even know the activities that go on there. i see people going to the grotto to pray. others also go to our only park which is not green to play football". Said by R 3

The findings above explains the commitment to the communal planting of trees in some communities in the study area in considering its communal benefits. It further reveals how green areas is promoting culture through funerals and social cohesion through weddings and parties among other social events.

4.6.1.2 Indicator 2: Influence of family and friends on use of green areas

The influence of family and friend's indicator measured whether the presence of family and friends influenced use and values for green areas. 3 out of 16 respondents indicated that they go to the school park to play football, games and have fun and sometimes take photos with friends. All three were student below the age of 20 years, who were all Christians with no sources of income. This affirms the findings of Hecke et al. (2016) which revealed that, social factors such as the presence of (active) friends and family, and availability of sport and play facilities, attracted adolescents in low income neighbourhoods to visits Public Open Spaces. Only I respondent i.e. the female Planner and Christian between the age of 50 to 65 years with tertiary education indicated that she goes to parks with her husband and children. Below is an excerpt from her interview;

"I sometimes visit the rattary park with my family because it has playing ground for kids and nice places for relaxation for my husband and me. I don't visit frequently because it's far from my home. Apart from the Grotto there is no green area in this district that one can visit and since it's a purely religious place, I don't frequent there". Said by R 2

Majority of respondents indicated that they are not fun of visiting green areas alone or with friends. See excerpts below;

"I will prefer to sit under a tree closer to my house, but I am not a fun of visiting such places. I can't tell for the community. some may be interested, and others too may not". Said by R 3

"Yes, the trees and how green the school park often attracts the young ones to go there have fun and football games. For me, I hardly go there except when there is a need for me". Said by R 4.

It is worth noting that age turned out as a key factor that influence students and a professional with tertiary education to go to parks for sports and recreational purposes. A relationship between family cohesion and green areas was establish as green areas provided playing grounds children and a couple for relaxation.

4.6.1.3 Indicator 3: Influence of green areas on social development

As an indicator, it sought to measure the relationship between green areas and social development and its influence on value of green areas. 3 out of 16 respondents revealed that it's a way of bringing the families, both rich and poor together since everyone can visit green areas. This is an interesting finding that could be capitalized on by the assembly in their efforts to bridge social inequality gaps by developing and encouraging the use of green areas by all social class. 4 out 16 indicated that Parks with playing grounds for children helped the development of children. All respondents under this indicator were professionals with tertiary level of education with highest income levels among all respondent except one male Muslim. They comprised 2 males and 1 female. This depict a relationship between education, age and income and green areas as students below age 20 with no income and or children expressed no opinion on the indicator as well as other respondents. Findings are also in line with the first indicator above on green areas promoting family cohesion, thereby revealing a strong relationship between the two indicators.

4.6.1.4 Summary of findings on Social Interaction Sub Variable

Even though the motivating factors sub variable recorded low number of respondents, it has been able to measure what it intended to measure. This is evidenced in presence of social interactions and social development that are facilitated by the presence of green areas. This brings to light the influence of the communal tree planting exercise ordered by the chief in maintaining parks for social interactions to take place. It is also worth noting that even though Muslims do not value green areas for the purpose of worship, they value green areas for creating an avenue for social cohesion and social interactions. This contradicts the findings of Riechers et al. (2018) which suggested that younger inner-city dwellers tended to prefer cultural ecosystem services facilitating social interactions. This is because this study reveals that young students in the peri urban study area preferred to visit green areas mainly because it facilitated social interaction, a finding that reaffirms the findings of Hecke et al. (2016) which revealed that, social factors such as the presence of (active) friends and family, and availability of sport and play facilities, attracted adolescents in low income neighbourhoods to visits Public Open Spaces

4.6.2 Sub Variable 2: Accessibility

Accessibility sub variable as discussed in sections 2.4.1 and 3.8, sought to measure how the availability and closeness of green areas influenced green areas. It was measured with two indicators namely closeness of green areas and attraction and affection for green areas. Summary of responses per indicators in measuring the sub variable are presented and discussed in the table below;

Table 11: Showing summary of responses per indicator for the accessibility sub variable

Sub Variable: Accessibility																					
Summary of responses	**Total Res.**	**Gender**		**Age**			**Religion**			**Education**			**Income**				**Occupation**				
Indicator 1: Closeness of green areas		**M**	**F**	**A1**	**A2**	**A3**	**Chr**	**Mus**	**Trad**	**Bas**	**Sec**	**Ter**	**Y1**	**Y2**	**Y3**	**Y4**	**Pln**	**Std**	**Tchr**	**UnE**	**Otr**
I don't visit green areas because there is no well-developed park in the district apart from the grotto *[M, F, M, F, M]*	4/16	3	1		2	3	3	1			1	3			2	2	2		1		1
I am not a fun of visiting green areas, but I like to have them around *[M Mus., M, F, M, M, F, F, M, M]*	9/16	6	3		3	6	5	2	2	7	2		2	6		1				2	7
I easily go to the school park for the shade, relaxation and to check on the trees we planted *[M, M, M, F, F]*	5/16	3	2	3		2	4		1	2	3		4	1				3		1	1
Indicator 2: Affection for and attraction to green areas																					
I would prefer to have green areas at least about 100 meters away from my house *[M, F, M, M, M, F, M, M, M, M, F, F, M]*	13/16	9	4		5	8	8	3	2	7	3	3	2	6	3	3	2		1	2	8
They beautify the environment and makes me fell close to nature *[M, F, M, M, M, M, F, M, F, F, M, M, F, F, M]*	15/16	9	6	2	5	8	10	3	2	7	5	3	4	6	2	3	2	2	1	2	8
I prefer picture B1 because it is nicer and greener *[M, F, M, M, F, M, M, M, F, F, M, M, F, F, F, M]*	16/16	10	6	3	5	8	11	3	2	7	6	3	5	6	2	3	2	3	1	2	8
The rubbish on B3 makes it unattractive *[M, F, M, M, F, M, F, F, M, F, F, M]*	12/16	6	6	2	4	6	8	2	3	6	3	3	3	4	2	3	2	2	1	1	6

4.6.2.1 Indicator 1: Closeness of green areas

4 out of 16 respondents indicated that they do not visit green areas because there is no well-developed park in the district apart from the grotto which is a religious site. Again, these respondents were all professionals with tertiary level education, except one male secondary level education respondent and Muslim religious head. This depicts some level of perceived values for green areas due to the expression of interest to visit among the highly educated respondents even though accessibility was a challenge. 9 out of 16 respondents indicated that they were not fun of visiting green areas but liked to have them around. This finding clearly confirms the Below are excerpts from interviews;

"The presence of trees at the Primary School in our community attracts people to go there to relax and enjoy the fresh air while they talk to each other. But for me, I do not go there because of my age". Said by R 9.

While some expressed interest in visiting green areas others as evidenced above did not see the need due to age. This reveals difference in perceptions as a result of age among respondents.

5 out of 16 respondents revealed that they easily go to the school park for the shade, relaxation and to check on the trees planted because it is just within the community. These respondents included 3 males and 2 females. 3 of them were students while the other 2 were opinion leaders. Below are excerpts from interviews;

"The presence of trees at the Primary School attracts me to go there to relax and to talk to my friends. For instance, we use music box to play music and dance to it sometimes dance and talk a lot about ourselves". Said by R 14

4.6.2.2 Indicator 2: Affection for and attraction and to green areas

A significant number of 13 out of 16 respondents preferred to have green areas at least about 100 metres away from their homes. These included all respondents except students who expressed no opinion on closeness of green areas. 15 out of 16 respondents with the exception of one male respondent revealed that green areas beautify the environment and makes them feel close to nature. When given the option to choose between pictures (see figure 9 below) that sought to measure state of physical features and their influence on affection for green areas, all respondents i.e 16/16 preferred picture 1because it was nicer and greener and more beautiful.

12 out of 16 expressed worry about how unattractive picture B3 was due to the rubbish and its poor state and attributed it to poor management. Below is an excerpt from the interview;

"I prefer the first picture (B1). it is more appealing and will be refreshing to sit under those trees. the difference is worrying. lack of management and care could account for such bad state of green areas in picture B3. some maintenance will really help". Said by R 2

Figure 9: Picture B: Measuring the state of physical features and its influence on affection for green areas

Source: Author's Field Work

4.6.2.3 Summary of findings Accessibility Sub Variable

Accessibility to green areas came out as both a motivating and demotivating factor at the same time. While 4 respondents reported that they could not use green areas due to their unavailability in the district, 5 other respondents revealed how they could easily access the school park for recreational activities because of its closeness. This confirms the findings of Yli-Pelkonen (2013) which revealed that, residents of Helsinki valued nature areas due to easy accessibility and frequently spent considerable amount of time there with the aim getting recreational experiences, most importantly getting "feel-good feeling" and physical exercise, associated with walking and sports-like activities. It is worth noting that age was a key sociodemographic characteristic that influenced the use for green areas. While students under the age of 20 used the parks very often while one respondent, within age 50 and 65 specifically indicated his lack of us due to his age. Other respondents, majority of whom were between the age of 35 and 65 equally expressed no interest in visiting such place. This reveals how perceptions on green areas likely differ over time.

Clean and well-maintained green areas came out as a key motivating factor that also enhanced resident's satisfaction levels as all respondents appreciated beauty provided by green areas. All sociocultural factors present in sample namely gender, age, religion, education, income level and occupation were factors that influenced respondents perceived value for green areas as both male and female of all income levels, educational levels, age group and occupational divide were attracted by beauty provided by green areas and preferred to have green areas closer to their homes. This explains why these indicators recorded the highest level of co-occurrences (29 co-occurrences) and quotations in atlas. ti. This depicts a very strong relationship between the two indicators and consistency in the measurement of the motivating and demotivating variable as a whole. This finding could inform assembly on how to get people attracted to patronise green areas should they at any point decide to invest in public green spaces.

4.6.3 Social and Physical Factors Sub Variable

As a sub variable, social and physical factor sought to measure the relationship between social behaviour and state of physical features and green areas. It was measured with two indicators

with 2 indicators namely evidence of preventive factors on use or keeping of green areas and state of physical features (vegetation quality, natural appearance and cleanliness). A summary of responses in measuring the sub variable are presented and discussed in the table below;

Table 12: Showing variations in response on social and physical factors sub variable and indicators

Sub variable: Social and physical factors																					
Indicator 1: Evidence of preventive factors on use or keeping of green areas	**Total Res.**	**Gender**		**Age**			**Religion**			**Education**			**Income**				**Occupation**				
		M	**F**	**A1**	**A2**	**A3**	**Chr**	**Mus**	**Trad**	**Bas**	**Sec**	**Ter**	**Y1**	**Y2**	**Y3**	**Y4**	**Pln**	**Std**	**Tchr**	**UnE**	**Otr**
It is not a priority for assembly because it does not provide immediate revenue and lack of funds *[M, F]*	2/16	1	1		1	1	2					2				2	2				
It can breed reptiles and mosquitoes and can cause destruction during rainstorms *[F, F, M, M, M, F]*	7/16	4	3	2	2	3	4	2	1	4	3		2	5				2			5
The need to build houses to accommodate people *[M, M, M, M, M, F, F, M, M, M]*	10/16	7	3		4	6	6	3	1	6	3	1	2	6	2				1	2	7
The presence of deviants hiding there at night *[F, F, F, E...M]*	7/16	4	3	3	2	2	5	1	1	1	4	2	3		1	3	2	3			2
Nothing prevents me from using green areas close to my house *[F, F, M, F, F,]*	7/16	4	3		3	4	4	1	2	5	2		2	5						2	5
Indicator 2: State of physical features (Influence of vegetation quality, natural appearance, cleanliness)																					
Pic B3 is not appealing because it has less green and garbage. *[M, F, M, M, F, M, E, E, M, F, F, M]*	12/16	6	6	2	4	6	8	2	3	6	3	3	3	4	2	3	2	2	1	1	6
I prefer pic B1 because it is more appealing and will be refreshing to relax under those trees *[M, F, M, M, M, M, M, F, M, F, F]*	16/16	10	6	3	5	8	11	3	2	7	6	3	5	6	2	3	2	3	1	2	8
Picture E1attracts me more but I will prefer to have sitting places so that one can relax more *[M, F, F, M]*	4/16	2	2		2	2	3	1		1	1	2	1		1	2	2			1	1
Pic E1 and E2 are more attractive because of playing grounds for children *[M, F, M, F, F, F, M, F, F, M*	10/16	4	6	3	3	6	7	3		3	4	3	4	2	1	3	2	3	1	1	3

4.6.3.1 Indicator 1: Evidence of preventive factors on use or keeping of green areas

This indicator measured whether there was the presence of factors that prevented or could prevent respondents from using or keeping green areas. 2 respondents who were both planners at the assembly indicated that, the assembly does not prioritise the provision and protection of green areas due to lack of funds and the fact that the venture does not generate revenue for the assembly. 7 out of 16 respondents, 3 of whom were females and 4 males revealed that, the presence of deviants such as thieves among others hiding at green areas at night coupled with the fact that green areas breed reptiles and mosquitoes. The fact that green areas like trees can cause destruction during rainstorms also came up as a factor that can prevent people from using or keeping green areas. 10 out of 16 respondents (7 males and 3 females), with all religious groups and educational levels present but professionals and student absent in sample revealed that, the need to build houses to accommodate people will prevent them from keeping green areas. This explains why the built environment is taking up green areas, thereby confirming the assertion of the assembly its Medium-Term Development Plan that buildings are gradually taking up green areas including agricultural lands. The fact that students did not show interest in clearing green areas for building houses could be explained by their lack of income and age while the level of knowledge on green areas and its benefits on the part of planners at the assembly could be responsible for why they may not clear green areas. However, 6 out of 16 respondents revealed that, nothing prevents them from keeping or using green areas. Even though this recorded a comparatively low number of respondents, it is very encouraging finding that gives an indication of a positive sign for the preservation and protection of green areas in the study area.

4.6.3.2 Indicator 2: State of physical features

This indicator sought to measure how the state of physical features such as vegetation quality, natural appearance and cleanliness of green areas influenced perceived value of green areas.

12 out of 16 respondents again confirmed under this indicator that Picture B1 was more attractive due to the greens while B3 was not attractive due to the rubbish. On factors that attracted respondents to green areas, 4 out of 16 comprising 2 male and 2 females between the ages of 35 to 65 years indicated their preference for picture E1 and added that they would prefer to have some sitting places to aid in relaxation in picture E1. 10 out of 16 respondents revealed that pictures E1 and E2 (see picture below) attracted them more due to the presence of playing grounds for children **with all** sociodemographic characteristics were present with the exception of traditional believers. This gives an indication of how strongly the **physical** state of green areas **in terms of cleanliness, vegetation quality and site natural appearance** influence **use and** value for green areas.

Figure 10: Picture E: Measuring factors that attract people to use green areas.

Source: Author's Field Work

4.6.3.3 Summary of Social and Physical Factors Sub Variable

In revealing how social and physical factors influenced perceived value of green areas, the need for buildings to accommodate the growing population, the presence of deviants , reptiles, mosquitoes and the fact that green areas such as trees can cause destruction to buildings during rainstorms came out as some of the social and physical factors that prevents or can prevent the use of green areas. These findings confirm works of Hecke et. al. (2016) that revealed that "presence of social deviants (drug users, gangs and home-less people), behaviour of other users and the cleanliness of the POS and features were some of the social and physical factors that deterred adolescents from visiting POS, and thereby establishing the influence of social and physical factors on perception and behaviour of adolescent's on value for POS". In this study, the presence of deviants, reptiles, mosquitoes and physical features did not only prevent adolescents but also both female and male adult professionals and traders between the ages of 35 to 65 years across all religion and income levels. In contrast with the works of Hoxha et al. (2014), as discussed in section 2.4.2, political pressure that influences the priorities of the planners and the assembly in the study area is not keen on preservation and keeping of green areas because green areas are perceived as not providing instant revenue to the Assembly. In contrast with the works of Kabisch (2019) as discussed under section 2.4.2, income is also revealed as a strong sociodemographic characteristic that impedes the preservation of green

areas on the part of both the Assembly and residents. This is because respondents with high incomes prefer to build houses to rent out for more income than to preserve green areas. It is also worthy to note that green areas especially trees are noted to possess both protective and destructive potentials during rainstorms. Very significant among the findings by this indicator is the fact that, some respondents, 7 in number revealed that nothing prevents them from using or keeping green areas. This presents a positive future for green areas if attempts are made to protect them. However, as much as this presents a positive future for green areas, this future could be uncertain as both formal and informal rules and regulations from chiefs and development partners as evidenced above could affect the preservation of green areas either negatively or positively. It is therefore not surprising that no professional expressed an opinion on whether or not they can be prevented from using or keeping green areas or otherwise as their individual opinions may not matter in the face of district collective goals.

4.6.4 Safety Sub Variable

This sub variable measured how safe or unsafe about the presence of green areas and during its influenced use and value for green areas. It was measured with one indicator namely felling of safety. Response per the indicator are presented and discussed below;

Table 13: Showing summary of responses for safety sub variable and indicators

Sub Variable: Safety																					
Indicator 1: Feeling of safety	**Total Res.**	**Gender**		**Age**			**Religion**			**Education**			**Income**				**Occupation**				
		M	**F**	**A1**	**A2**	**A3**	**Chr**	**Mus**	**Trad**	**Bas**	**Sec**	**Ter**	**Y1**	**Y2**	**Y3**	**Y4**	**Pln**	**Std**	**Tchr**	**UnE**	**Otr**
NB: This indicator was rated on a scale of 1 to 5 **1 – Not at all Safe 2 – Not Safe 3 – Neutral 4 – Safe 5 – Very Safe**																					
I will rate 4 especially if the place is well maintained for relaxation and recreation *[M, M, F, F, M, M]*	6/16	4	2	3	2	1	5	1			4	2	3		2	1	1	3	1		2
3 depending on how well the place is maintained. Because trees can destroy buildings during rainstorm *[F, M, M, M, M, M, M]*	7/16	6	1		2	5	5		2	4	2	1	1	4		2	1			1	5
5 because trees prevent buildings from rainstorm *[F, F, F]*	3/16		3		1	2	1	2		3			1	2						1	2

4.6.4.1 Indicator 1: Feeling of Safety

This indicator measured how safe respondents felt about the use and presence of green areas. 6 out of 16 rated 4 on a scale of 1 to 5 with 1 being not safe and 5 being very safe. All respondents who were with tertiary and secondary education level indicated that their safety depended on how well the green area is maintained either for relaxation or recreation. This depicts a relationship between education and use of green areas for relaxation purposes. 7 out of 16 rated 3, which implied uncertainty in their feeling of safety with the reason that trees can destroy their buildings during rainstorms. 3 respondents however rated 5 implying very safe with reason being that, trees protect buildings form rainstorms. This finding depicts a relationship between the safety variable and the social and physical factors sub variable both sub variables revealed that trees can protect building and at the same time destroy buildings during rainstorms. These findings can inform the communal tree planting exercise on the type of trees to plant and how well these trees ought to be maintained to encourage people to buy into the idea of planting trees.

4.7 Sub question 4: What are the perceived values of green areas in AKSD, Kumasi?

The third sub question sought find out what the perceived values of green areas in the study area were. As discussed in section 2.7, perceived values were measured in relation to the evidence of aesthetic values, ecological values and physical and health values of green areas. Responses depicting the variation in responses per each indicator under each sub variable as aligned to sociodemographic characteristics are presented in the table below and discussed under this section;

Table 14: Showing variations in responses on Aesthetic Sub Variables and indicators

Sub Variable: Aesthetic Values																					
Summary of responses	**Total Res.**	**Gender**		**Age**			**Religion**			**Education**			**Income**				**Occupation**				
Indicator 1: Level of appreciation of open green areas and natural landscape		M	F	A1	A2	A3	Chr	Mus	Trad	Bas	Sec	Ter	Y1	Y2	Y3	Y4	Pln	Std	Tchr	UnE	Otr
Green areas beautify the environment *[M, F M, M, M, M, F, F, M, M, F, M]*	12/16	6	6	3	4	3	8	3	1	5	4	3	4	4	1	3	2	3	1	1	5
Indicator 2: Appreciation of beauty provided by green areas																					
The green parts in all the pictures are very appealing and natural *[M, M, F, F, M, M]*	6/16	4	2		4	2	2	31	1	4	2			5	1						6
D1 because it nice to have trees planted along the road. It will attract people to walk walking *[M, M, M, F, M, M, F, F]*	8/16	5	3	3	2	3	6	1	1	1	4	3	3		2	3	2	3	1		2
Picture D3 is more natural *[F, M, F, F, M, M]*	6/16	3	3		3	3	4	2		5	1		2	4						2	4
Indicator 3: Material and non-material wellbeing/values of green areas e.g. Spirituality, sense of place, cultural heritage, beautification etc.																					
It enhances the way of worship for both Christians and traditionalist e.g. the sacred forest *[M, F, M, M, F, M, F, F, F, M, M,]*	12/16	8	4	3	3	6	10		2	5	5	2	5	4		3	2	3		2	5
The forests help us to preserve the traditional culture of our ancestors *[M, F, M, M, M, M, M, F, F, M, F, M]*	14/16	10	4	3	4	7	11	1	2	5	6	3	5	4	2	3	2	3	1	2	6
Beautification of the environment *[M, F, M, M, F, M, M, F, F, M, M, F, F, M]*	14/16	8	6	3	5	6	10	3	1	5	6	3	4	6	2	2	2	3	1	1	7
Tourist attraction *[F, M, F, F]*	4/16	1	3	2	1	1	4				2	2	2			2	2	2			
Indicator 4: Presence of aesthetically appealing features such as colorful flowers and place attachment																					
The trees and flowers around the school and other greens beautify the environment *[M, F, M, M, F, M, M, F, F, M, M, F, F, M]*	14/16	8	6	3	5	6	10	3	1	5	6	3	4	6	2	2	2	3	1	1	7

4.7.1 Sub Variable 1: Aesthetic Values of Green Areas

As discussed under section 2.7.1, aesthetic values of green areas sought to measure whether respondents ascribed any appealing or beauty and spiritual or cultural values to green areas. This sub variable was measured with four indicators namely level of appreciation of open green areas and natural landscape, appreciation of beauty provided by green areas, material and non-material wellbeing/values of green areas and presence of aesthetically appealing features of green areas. Responses according to specific indicators are discussed below;

4.7.1.1 Indicator 1: Level of appreciation of open green areas and natural landscape

This indicator sought to measure what open green areas and natural landscape meant to people. 12 out of 16 respondents comprising 6 males and 6 females with all other sociodemographic characteristics present in sample revealed that open green areas beautify the environment. This makes beautification of the environment a key perceived value of green areas in the study district as the same finding has been revealed by the affection and attraction to green areas indicator under the accessibility sub variable of the motivating and demotivating factors main variable.

4.7.1.2 Indicator 2: Appreciation of beauty provided by green areas

This indicator measured how people appreciated beauty provided by green areas. For this indicator, the picture below was posed to respondents to aid in their responses. While 6 respondents, comprising 4 males and 2 females indicted that all the greens in the picture were appealing and natural, 6 other respondents comprising 3 males and 3 females indicated that picture D3 was more natural. 8 out of 16 people however preferred picture D1 because of the trees planted along the road which they believed will attract people to walk. It is worth noting that, of all the respondents per this indicator, tertiary education level respondent and secondary school students were specific on the type of green areas that provided beauty, while others appreciated all pictures for their natural appearance. The difference in choices and perceived values could be explained by personal factors of respondents which is often due to the social and cultural background that these respondents were nurtured in, as expounded by the Sociocultural Theory of Cognitive behaviour and Values, Beliefs and Norms theory discussed under sections 2.1 and 2.2 in chapter 2. This also confirms the works of Samantha et.al, (2014) that suggested aesthetic values often emanate from a social context thus cultural background, social network and institution or are based on personal characteristics such as value orientations, location of residence, education level, income, age, gender. All these findings are evidenced in the strong relationship revealed by 15 co-occurrences between this indicator and the material and non-material values provided by green areas in the analysis by atlas.ti.

Figure 11: Picture D: Measuring appreciation of beauty provided by natural landscape

4.7.1.3 Indicator 3: Material and non-material wellbeing/values of green areas

In measuring this indicator, four categories of responses were given by respondents. 12 out of 16 respondents excluding all Muslim respondents and a teacher respondent revealed that green areas enhanced the way of worship for both Christians and traditionalists e.g. the grotto and sacred forest for the purposes of prayers and pouring of libation respectively. 14 out 16 indicated that green areas such as the sacred forest helped in the preservation of traditions and culture inherited from ancestors. Even though a teacher as well as all Muslim respondents did not perceive spiritual values of green areas, they believed in the cultural values of green areas. 14 out of 16 respondents confirmed again that green areas beautify the environment whiles 4 out of 16 opined that green areas enhance tourist attraction since the grotto attracts a lot of people to the district. All 4 respondents who were all Christians possibly shared this opinion because of their relationship between worship and green areas or their knowledge about green

areas as 2 respondents had tertiary level education and other two with secondary level education.

4.7.1.4 Indicator 4: Presence of aesthetically appealing features

In measuring this indicator, 14 out of 16 respondents indicated that flowers around schools and other greens beautify the environment. The remaining two respondents gave no respond=se to this indicator. The 14 respondents comprised 8 male and 6 females with all sociodemographic characteristics present in this sample. This depicts how females' value green areas for beautification since all women in sample shared this opinion. It further shows the consistency with which respondents value the beautification provided by green areas.

4.7.1.5 Summary of findings on Aesthetic Values Sub Variable

All indicators under this sub variable again highlighted beautification provided by green areas as a key value for green areas. This further strengthens the internal consistency in measurements of variables and indicators, considering the level of relationship established between all aesthetic values sub variable and motivating and demotivating factors variable and their indicators that point to beautification provided by green areas and as evidenced in atlas.ti. The finding of also affirms the standpoint of Samantha et. al., (2014) on the who viewed aesthetics or cultural values of green areas are as the beauty presented by greenery and the importance people, as individuals or as a group, ascribe to bundles of green areas. The finding that nonmaterial benefits such as spirituality, cultural values and sense of place were also identified as perceived values of green areas further affirms the views of Chan et al., (2012); Daniel et al., (2012) and Milcu et al.,(2013) in Samantha et.al, (2014) that aesthetic values reflect both material and non-material well-being connected to green areas, such as spirituality, beautification, cultural heritage and sense of place. orientations, location of residence, education level, income, age and gender.

4.8 Ecological Value of Green Areas Sub Variable

Ecological value as discussed under section 2.7.2 sought to find out whether there were any perceived values of green areas **in relation to** the environment. Three indicators were used to measure this variable. They were level of concern for green areas, evidence of environmental benefits of green areas and evidence of the need to preserve green areas. Responses according to specific indicators are presented and discussed below;

Table 15: Showing variation in responses on Ecological Value Sub Variable

Sub Variable: Ecological Value																					
Summary of responses	Total Res.	Gender		Age			Religion			Education			Income				Occupation				
Indicator 1: Level of concern for loss of green areas		M	F	A1	A2	A3	Chr	Mus	Trad	Bas	Sec	Ter	Y1	Y2	Y3	Y4	Pln	Std	Tchr	UnE	Otr
It is very worrying that we are losing all our greens gradually without control. We need to protect them *[M, F, M, M, M, F, M, F, F, M, M, F, F, M]*	14/16	8	6	3	6	3	9	3	2	7	4	3	5	4	2	3	2	3	1	2	6
Picture C3 looks very bad and worrying. There is the need to plant some trees for shade *[M, F, M, M, M, F, M, F, F, M, M, F, F, M]*	14/16	8	6	3	6	3	9	3	2	7	4	3	5	4	2	3	2	3	1	2	6
I prefer pic C1 because it has more greens *[F, M, M, M, M, F, M, M, F, F, M, M, F]*	14/16	8	6	3	5	6	10	3	1	5	6	3	4	6	2	2	2	3	1	1	7
Indicator 2: Evidence of environmental benefits of green areas (air quality, aesthetics, cooling effects, climate change etc.)																					
It helps in controlling flood and ripping of roofs during rainstorms *[M, F, M, F, F]*	6/16	3	3	1	3	2	4	1	1	2	2	2	1	3		2	2	1			3
It provides fresh air and improve air quality *[M, F, M, M, M, F, M, F, F, M, M, F]*	12/16	7	5	3	5	4	9	2	1	4	5	3	4	4	2	2	2	3	1	1	5
It provides shade from the sun *[M, F, M, M, M, F, F, M, M, F, F]*	16/16	10	6	3	5	8	11	3	2	7	6	3	5	6	2	3	2	3	1	2	8
Green areas provide serene environments *[M, M, F, M, M, F, F, M, F, F, M]*	16/16	10	6	3	5	8	11	3	2	7	6	3	5	6	2	3	2	3	1	2	8
It improves rainfall *[M, F, M, M]*	4//16	3	1		1	3	4				1	3		1	1	2	2		1		1
Evidence of the need to preserve the green areas																					
Yes, it is very important because it has a lot of benefits *[M, F, M, M, M, F, M, M, F, M, M, F, F, M]*	14/16	8	6	3	6	3	9	3	2	7	4	3	5	4	2	3	2	3	1	2	6
There is the need to plant trees because they protect us *[M, F, M, M, M, F, M, F, F, M, M, F, F, M]*	14/16	8	6	3	6	3	9	3	2	7	4	3	5	4	2	3	2	3	1	2	6

4.8.1 Indicator 1: Level of concern for loss of green areas

This indicator measured weather people were worried about the loss of green areas in the study area in any way. 14 out of 16 respondents expressed worry about the fact that all green areas were being lost without control and expressed the need for their protection. When the picture below was posed to help in measuring the level of concern for loss of green areas, 14 respondents expressed worry about the state of green areas in picture C3 and indicated the concern for the need to plant some trees for shade in such areas. The same number of respondents equally indicated their preference for picture C1 because it had more greens. This finding corresponds to the relationship established by the analysis in atlas ti as level of concern co-occurred with evidence of the need to preserve green areas 14 times, thereby revealing a strong relationship between the indicators. The relationship could be an implication of the readiness of people to preserve green areas. It is informing that any efforts by the assembly in this regard undoubtedly will be met with all the support required.

Figure 12: Picture C: Measuring concern for loss of green areas.

4.8.2 Indicator 2: Evidence of environmental benefits of green areas

This indicator measured whether there existed any environmental benefits of green areas to respondents. 6 out of 16 respondents revealed that green areas especially grass and scrubs aided in controlling floods. 12 out of 16 revealed that green areas provided fresh air and improved air quality (7 males and 5 females). 16 out of 16 respondents revealed that green areas provide shade from the sun and a serene environment. 4 out of 16 also revealed that green areas help improve rainfall. A positive relationship between this indicator and the appreciation of beauty provided by green areas indicator was also established as both indicators co-occurred 8 times.

4.8.2 Indicator 3: Evidence of the need to preserve the green areas

This indicator measured whether there was evidence of the need to preserve and protect green areas. 14 out of 16 respondents indicated that there was the need to plant trees to increase, preserve and protect green areas due to their numerous benefits. Again, a strong relationship was established between this indicator and the level of concern for loss of green areas as both indicators co-occurred 14 times in atlas.ti. This reveals internal consistencies in the measurement of variables in this study.

4.8.3 Summary of Findings on Ecological Value Sub Variable

All three indicators under the ecological value for green areas variable showed some level of internal consistency as a positive relationship was established between all indicators. The variable highlighted a high level of concern for loss of green areas and the expression of need for its preservation by respondents. This finding contradicts the reality on the ground as nothing is being done to preserve green areas both at the assembly and individual level. This makes it difficult to reconcile the two scenarios even though there has been an account of several environmental benefits of green areas. The fact that, people are not oblivious of the general values of green areas, and as such are worried about the lack of preservation of such areas but does little to remedy the situation leaves much to be desired. Lack of education on green areas and its benefits and how to sustainably preserve these areas could account for the situation. Even though a worrying finding, it presents a very fertile ground for the assembly and other stakeholders to succeed in any efforts geared towards green areas preservation.

4.9 Physical and Health Values of Green Areas Sub Variable

As discussed in section 2.7.3, physical and health values sought to establish whether there was any relationship between green areas and health. Three indicators were used to measure this variable. A summary of responses in measuring the sub variable are presented and discussed below;

Table 16: Showing variations in responses on Physical and Health Values Variable and Indicators

Sub Variable: Physical and Health Values																					
Summary of responses	**Total Res.**	**Gender**		**Age**			**Religion**			**Education**			**Income**				**Occupation**				
Indicator 1: Evidence psychological or mental, physical and emotional benefits of green areas		M	F	A1	A2	A3	Chr	Mus	Trad	Bas	Sec	Ter	Y1	Y2	Y3	Y4	Pln	Std	Tchr	Un E	Otr
It reduces noise pollution and gives a feeling of comfort *[M, F, M, F, M, M, F]*	7/16	4	3	3	2	2	6	1			4	3	3		2	2	2	3	1		1
Green areas help in stress reduction *[M, F, M, M, M, F, F]*	8/16	5	3	3	2	3	6	1	1	1	4	3	3		2	3	2	3	1		2
It good for meditation and Promotes mental health *[M, F, M]*	3/16	2	1		1	2	3					3			1	2	2		1		
The grotto is a nice place to walk about and exercise *[F, M]*	2/16	1	1		1	1	2					3				2	2				
Indicator 2: Evidence of health relationship with green areas																					
Green areas provide herbs (nyamedua, gyama, nim tree) that serve as medicine for malaria, fever, etc. *[M, F, M, M, M, M, F, M, M, F, F, M, M, F, M]*	15/16	10	5	2	5	8	10	3	2	7	5	3	4	6	2	3	2	2	1	2	8
A combination of some herbs can help cure and prevent corona *[F, M, M, M, F, M, F, F, F, M]*	10/16	7	3		4	6	5	3	2	7	3		2	6	1	1				2	8
Indicator 3: Positive psychological benefits and place attachment																					
The serenity provided by green areas helps in enhancing one's peace of mind *[M, F, M F, F, M, M, F, M]*	9/16	5	4		4	5	4	3	2	5	1	3	1	3	2	3	2		1	1	5

4.9.1 Indicator 1: Evidence psychological or mental, physical and emotional benefits of green areas

In measuring this indicator, 7 out of 16 respondents indicated that green areas helped in noise reduction and promotes soundness of mind and comfort. 8 out of 16 indicated that green areas helped in stress reduction while 3 out of 16 revealed that green areas was good for meditation and promoted mental health, 2 out of these 3, who were both male and female planners at the assembly revealed that the grotto was a nice place to walk about and exercise. This reveals an interesting relationship between green areas and physical, psychological and mental wellbeing, a finding that confirms the standpoint of Kim et al. (2019), Paul et al. (2017) and Campagnaro et al. (2020) as discussed under section 2.7.3. Unlike in the case of these authors, respondents did not directly attribute their health, psychological and physical values derived from green areas to closeness of green areas or vegetation structure as expounded by the above authors even though it can be inferred. However, the influence of these factors cannot be ruled out as they have been measured in some sections (section 4.6) of this study as factors that motivated or demotivated respondents from using green areas and hence may exert some influence on respondents' opinions.

4.9.2 Indicator 2: Evidence of health relationship with green areas

15 out of 16 respondents indicated that green areas provide herbs such as nyamedua, gyama and nim tree that serves as medicine for the treatment of malaria, fever etc. A good number of 10 out of 16 respondents associated the treatment of the novel COVID-19 virus with green areas by revealing that a combination of some herbs can help cure or prevent the virus. It would have been interesting to know if respondents had mentioned the specific combination of herbs that could help in the fight against Covid.

4.9.3 Indicator 3: Positive psychological benefits and place attachment

For this indicator, 9 out of 16 indicated that green areas provided serene environments in enhancing one's peace of mind. This finding is very much in sync with findings of the Evidence of psychological or mental, physical and emotional benefits of green areas indicator discussed above. This enhances the internal consistencies in indicators and hence the internal validity of the overall research.

4.9.4 Summary of findings on Physical and Health Value Sub Variable

All three indicators revealed interesting findings under the health and physical values of green areas sub variable. Psychological, physical and emotional benefits of green areas were confirmed as key perceived values of green with some associated health/medicinal values of green areas. Even though the medicinal benefits of green areas have not been cited in any of the literatures used in this research, it is worth noting that the finding is one that is well profound in Ghana especially in rural communities based on indigenous knowledge of the study area by researcher. In view of these benefits, one would expect that the preservation of green areas and nature in general will be a priority of respondents and community members in general. Unfortunately, however this is not the case. This explains why the hitherto agricultural and forest district has lost almost all its green areas leaving patches of greens as indicated by the professionals and the Medium-term development plan of the assembly. Overall, the findings presented by these indicators depicts a strong positive relationship among them since results interrelate with each other.

Chapter 5: Conclusion and Recommendation

5.0 Introduction

As part of the larger research project of the PBL-Netherlands Environmental Agency that sought to explore scenarios for green growth in the Kumasi landscape of Ghana coupled with the poor culture of preservation and the rapid loss of green areas in Kumasi which hitherto was known as the garden city for its greeneries, the study sought to explain how sociocultural factors and motivating or demotivating factors influenced perceptions on green areas in the AKSD in peri -urban Kumasi. This chapter of the report presents the conclusion and recommendations of the study. Summaries of observations and finding has been presented to answer each sub research question. An answer to the main research question has also been provided. Some light has also been shed on the practicality of the research and its implications for further research. Finally, recommendations worth consideration has also been provided especially for PBL-Netherlands Environmental Agency, the main sponsors of this research.

5.1 Conclusion for Sub Research Question 1: What are the forms or types of green areas in AKSD, Kumasi?

The first sub question sought to find out the nature, kind or categories of green areas existing in the district. To answer this sub question, two indicators namely state of green areas: which sought to know the current conditions of greens and existing type or form of green areas: sought to find out the nature and different kinds of green area were measured. Existing types of green areas present in the study area were mainly religious sites, thus the grotto (the catholic pilgrimage site at Buoho) and the sacred forest at Ntiribuoho, agricultural land with mountainous areas, normal trees and School parks. Normal trees such as bamboo, wawa, odum, nim tree and plantain trees as well as grass and scrubs formed the main types of existing green areas easily seen at a glance. The study revealed high loss of green, agricultural and forest areas to the built environment with the remaining patches of green areas in very deplorable state. This finding was confirmed in the 2018 -2021 District Medium Term Plan of the District Assembly. With the loss and deplorable state of green areas especially agricultural lands, the study predicts that the District may be encountering some challenges in its efforts at promoting inclusive, safe, resilient and sustainable cities and communities given the current state of green. This is likely to have negative implications that green areas are not well planned for by the district even though the assembly may be having some interventions in addressing the situation. This situation is evidenced in a related study Abass et. al. (2019) which reported that management of green areas is unclear in Ghana's planning frameworks with policy implementer quite unconscious about the need to preserve green areas in the face of rapid urbanisation. The study concludes that generally, respondents had a fair idea of what constitutes green areas and listed religious sites, agricultural lands, mountainous areas, normal trees with scrubs and school parks as the main types but were not happy with their current state since they are in very deplorable states. There is therefore the need for the Assembly to make conscious efforts provide access to inclusive and accessible open green and public spaces for all persons as all respondents of all ages and sex expressed interest in accessing and protecting such areas. Agricultural land areas must also be protected to ensure productive and sustainable agriculture.

5.2 Sub Research Question 2: How do sociocultural factors (norms, beliefs and customs) influence perceived value of green areas in AKSD, Kumasi?

This sub question was answered by measuring norms, beliefs and customs with 4 indicators as discussed under section 4.5. Sociodemographic characteristics also as discussed under sections 2.3 and 4.5 further highlighted how perceived values of green were influenced by gender, age, education, religion, occupation and income level. The study reveals that norm, beliefs and customs are key sociocultural factors that influence perceived value of green areas in the study area. Beliefs and customs such as taboos, myths and superstition came up as the mediums through which these sociocultural factors significantly help in the preservation of green areas and at the same time instils morals and values in people, thereby influencing perceived values of green areas. These taboos, myths and superstitions included not going to the farm, forest, river and mountains on Tuesdays, not committing a crime or having sex in the bush, women not allowed go to the river during menstruation, not allowed to farm or cut trees around river bodies and the belief that certain spirits live in trees especially big trees. The study however revealed that, as much as these beliefs and customs influence values for green areas, they are no longer effective like they use to be in the past due to modernisation, Christianity, education and the influx of settlers in the community. This explains the current deplorable state of green areas as education on these taboos may be lacking and therefore not yielding results on preservation of green areas as they did in the past. This was further confirmed by students under age 20 who expressed no knowledge about the efficacy of these taboos, myths and superstition because they were possibly too young to know what pertained in the past as well as professionals at the district assembly with tertiary level of education who expressed no knowledge about these taboos, myths and superstition perhaps because they were also not indigens but only worked in the district. The lack of knowledge by students and professional can be explained by their lack of past learning experiences in the communities, a finding that is similar the standpoint of Smallbone, et al, (1995) in Olatunji, (2015), that sociocultural factors governs personal behaviour as a result of past experiential learning from one's sociocultural environment. These findings are further strengthened as they are supported by the propositions of the Sociocultural Theory of Cognitive Behaviour on its position that, human learning is largely a social process such that, even though cognitive developments vary across culture, the fundamental role of interaction in an individual's cognitive development especially young children cannot be over emphasized.

Norms such as tree planting rules passed by chiefs of Hemang and Kodie and hence culture(chieftaincy) was also found as a sociocultural factor that influenced the use and perceived value of green areas since both communities embark on monthly tree planting exercises at their cemeteries and school parks. All traditional leaders revealed how they visit the school park to check on the trees planted and to relax under the shade. Religion, education, and gender and age (as discussed under section 4.5) were key demographic characteristics highlighted to depict variations the perceived values of green areas. The study concludes that sociocultural factors highly influenced perceived values of green areas through taboos, myths and superstition. This is because these taboos, myths and superstition provided avenues for rest from work, thereby promoting decent work and economic growth.

5.3 Sub Research Question 3: How do motivating and demotivating factors influence perceived values of green areas in AKSD, Kumasi?

To answer this sub question, four sub variables with various indicators (as discussed under section 4.6) were used. Green areas were greatly evidenced to be facilitating social interactions, social development and social cohesion among respondents of all religious, age, education and income groups. This is because trees were communally planted with flowers at Hemang and Ntiribuoho school parks as a result of a rule by customary chiefs provided a serene environment for hosting social gathering, sporting activities for students and other recreational activities for the entire communities. This contradicts the findings of Riechers et al. (2018) which suggested that younger inner-city dwellers tended to prefer cultural ecosystem services facilitating social interactions. This was because this study revealed that young students in the peri urban study area preferred to visit green areas mainly because it facilitated social interaction, a finding that reaffirms the findings of Hecke et al. (2016) which revealed that, social factors such as the presence of (active) friends and family, and availability of sport and play facilities, attracted adolescents in low income neighbourhoods to visits Public Open Spaces. The study further found that accessibility to green areas came out as both a motivating and demotivating factor in influencing values of green areas. This is because while some respondents expressed how they could not access green areas due to the absence of their preferred choice in the study area, others especially students reported how they could easily access the school park for recreational activities because of its closeness. This confirms the findings of Yli-Pelkonen (2013) which revealed that, residents of Helsinki valued nature areas due to easy accessibility and frequently spent considerable time there with the aim getting recreational experiences, most importantly getting "feel-good feeling" and physical exercise, associated with walking and sports-like activities. Physical factors such as trees providing protection and causing destruction to buildings during rainstorms at the same time also came out as both a motivating and demotivating factor that influenced use and perceived value for green areas.

Cleanliness of green areas was also a key motivating factor that enhanced resident's satisfaction levels because all respondents (sensitive to all sociodemographic characteristic) appreciated beauty provided by green areas. Social factors such as the need for buildings to accommodate the growing population, the presence of deviants, reptiles and mosquitoes however came out as some demotivating factors that could prevent the use or keeping of green areas, thereby, influencing use and values for green areas. These findings are similar to the works of Hecke et. al. (2016) that revealed that "presence of social deviants (drug users, gangs and home-less people), behaviour of other users and the cleanliness of the POS and features were some of the social and physical factors that deterred adolescents from visiting POS, and thereby establishing the influence of social and physical factors on perception and behaviour of adolescent's on value for POS". It is worth noting that, the presence of deviants, reptiles, mosquitoes and physical features did not only prevent adolescents in this study but also both female and male adult professionals and traders between the ages of 35 to 65 years across all religion and income levels. Feeling of safety was also revealed as both motivating and demotivating factors since it largely depended on how well a green area is kept and maintained whether for recreational or beautification purposes.

Generally, the study concludes that all 4 factors (social interaction, accessibility, social and physical factors and safety) measured in answering this sub question possess high potential of influencing perceptions on values of green areas both positively and negatively. This level of influence is dependent on an individual's choices and preferences emanating from his or her sociocultural environment that he or she was nurtured in. As a result, whether the factor motivates or demotivates the use or value of green areas, the influence of sociocultural factors

cannot be overlooked in the process. This reveals a strong relationship between the two independent variables since both motivating and demotivating factors of the study were sensitive the all sociodemographic characteristics of this study.

5.4 Sub Research Question 4: What are the perceived values of green areas in AKSD, Kumasi?

The fourth sub question sought find out what the perceived values of green areas in the study area were. Perceived values were measured in relation to the evidence of aesthetic values, ecological values and physical and health values of green areas. The study concludes that, the perceived aesthetic values of green areas were beautification provided by green areas, nonmaterial benefits such as spirituality, cultural values and sense of place. This was explained by how the religious sites (the grotto and sacred forest) aided in the way of worship for both Christians and traditionalists and how green generally looked appealing to respondents. These finding affirms the standpoint of Samantha et. al., (2014) who viewed aesthetics or cultural values of green areas as the beauty presented by greenery and the importance people, as individuals or as a group, ascribe to bundles of green areas. Findings on nonmaterial benefits such as spirituality, cultural values and sense of place were also in line with the views of Chan et al., (2012); Daniel et al., (2012) and Milcu et al.,(2013) in Samantha et.al, (2014) that suggested that, aesthetic values reflect both material and non-material well-being connected to green areas, such as spirituality, beautification, cultural heritage and sense of place, orientations, location of residence, education level, income, age and gender.

The ecological values of green areas revealed by the study included flood control, provision of fresh air, provision of shade and serene environment and the fact that green areas helped to improve rainfall. The study also concludes that there is a high level of concern for loss of green areas to the built environment. The good thing however is that, respondents expressed of need for its preservation. This finding contradicts the reality on the ground as nothing is being done to preserve green areas both at the assembly and individual level. This makes it difficult to reconcile the two scenarios even though there has been an account of several environmental benefits of green areas. The fact that, people are not oblivious of the general values of green areas, and as such are worried about the lack of preservation of such areas but does little to remedy the situation leaves much to be desired. The study predicts that lack of education on green areas and its benefits and how to sustainably preserve these areas could account for the situation. The study further revealed psychological, physical and emotional benefits of green areas as key perceived values of green with some associated health/medicinal values of green areas such as the potential of green areas to cure malaria, fever and the novel corona virus. Even though the medicinal benefits of green areas have not been cited in any of the literatures used in this research, it is worth noting that the finding is one that is well profound in Ghana especially the treatment of fever and malaria in rural communities base on researcher's indigenous knowledge of the study area. In view of these benefits, one would expect that the preservation of green areas and nature in general will be a priority of respondents and community members in general. Unfortunately, however this is not the case. This explains why the hitherto agricultural and forest district has lost almost all its green areas leaving patches of greens in deplorable state as indicated by the professionals and the Medium-term development plan of the assembly. Even though a worrying finding, the study concludes that the knowledge of the numerous aesthetic, ecological and physical and health benefits of green areas presents a very fertile ground for the assembly and other stakeholders to succeed in any efforts geared towards green areas preservation to further enhance these perceived values.

5.5 Conclusion and answer to main research question: How do sociocultural factors and motivating or demotivating factors influence perceptions on value of green areas in AKSD, Kumasi?

The main purpose of the study was to explain how sociocultural factors and motivating or demotivating factors influenced perceptions on values of green areas in the AKSD of the Ashanti Region of Ghana with a focus on the state, forms or types of green areas, sociocultural factors and motivating and demotivating factors influencing perceived value of green areas as well as the perceived values of green areas. By the adoption of a qualitative research approach and a case study design, purposive sampling was used to select a sample size of 30 respondents for semi-structured interviews from four communities in the district namely Hemang, Ntiribuoho, Buoho and Kodie. The study after interviewing and analysing responses from only 16 respondents concludes that, green areas at AKSD come in the form of religious sites (grotto) and the sacred forest, agricultural land with mountainous areas and school parks with normal trees such as odum, wawa, nim tree as well as plantain being the very obvious. Taboos, myths and superstition were revealed as key sociocultural factors that significantly helps in the preservation of green areas and at the same time instils morals and values in people, thereby influencing perceived values of green areas. Other sociocultural factors that were treated as sociodemographic characteristics namely gender, age, religion, education, income level and occupation which ensured representativeness of the sample were all factors that were identified as influencing respondents perceptions on value for green areas as both male and female of all income levels, educational levels, age group and occupational divide expressed diverse values for green areas. Social interaction, accessibility, social and physical factors such as cleanliness of green areas as well as safety were also identified as motivating and demotivating factors that influenced perceived values of green areas. Finally, it has emerged from the study that the perceived values of green areas were expressed in terms of aesthetic values, ecological values and physical and health.

The difference in choices of perceived values of green areas by respondents are explained by personal factors of respondents which is often due to the social and cultural background that these respondents were nurtured in, as expounded by the Sociocultural Theory of Cognitive behavior and Values, Beliefs and Norms theory discussed under sections 2.1 and 2.2 in chapter 2. This clearly strengthens and explains how the influence of sociocultural factors on perceived values of green areas occur. It is also essential at this point to highlight the relationships between variables measured to arrive at these finding. All variables and indicators measured displayed some level of internal consistency considering the level of consistency established at various levels. Key among them is level of relationship established between the motivating and demotivating variable and perceived value of green areas variable. Specific of notice is the relationship between the aesthetic value sub variable and all indicators under the social and physical sub variable and accessibility sub variable since all 3 variables pointed to beautification provided by green areas a key perceived value of green area as evidenced in atlas.ti and by the frequency tables 12, 13 and 15. Relationships between variables and indicators were depicted by how they co-occurred has been discussed under section 4.3.1 and in figure 5. The relationship established between the all variables measured further validated the conceptual framework of the study, on which the whole study was operationalised.

All findings and conclusions drawn in this study are made bearing in mind with the limitation encountered in the study. 16 instead of 30 respondents were interviewed due to the observation COVID-19 protocols. As much as research assistants trained for data collection could not probe

well for desired response for some interview question, some respondents did not answer all interview question. All these challenges coupled with the limitations of case study design presented generalisability challenges for findings of this research. On this premise, the study concludes that the development of green areas as well as the values assigned to them in AKSD is still at the budding stage and are under the serious influence of sociocultural factors as well as motivating and demotivating factors. The study recommends that there is the need for the Assembly to make conscious efforts to provide access to inclusive and accessible open green and public green areas for all persons as all respondents of all ages and sex expressed interest in accessing and protecting such areas. Agricultural land areas must also be protected to ensure productive and sustainable agriculture.

5.6 Reflection on research.

Generally, it is worth mentioning that, this research is not without shortfalls and as such, is not an overly perfect research. Having worked as part of a real project team with professionals in the field giving diverse opinions, it was quite a herculean task to come through to the end of this research ensuring that all insights were well presented to reflect the project aim as well as the academic purpose for which this research was carried out. The researcher's background as a Development Planner and being conversant with the area of study and issues pertaining on the ground also made it a bit challenging to dispassionately reconcile findings with her exiting indigenous knowledge. Notwithstanding these, the researcher employed relevant quality criteria (as discussed in sections 3.4.1 and 3.4.2) to address the challenges to ensure transferability, validity and reliability of research findings.

5.7 Further research

The present study has been conducted on sociocultural factors and motivating or demotivating factors and how they influence perceived values of green areas in the Afigya Kwabre South District of the Ashanti Region of Ghana. It is recommended that, this study be replicated in other parts of Ghana where there are considerable green areas. Furthermore, the study recommends that a comparative study between green areas in two or more major cities in developing countries should be conducted in the future. Again, since the present study adopted a qualitative research approach, it is suggested that future studies adopt other research approaches such as mixed method and quantitative approaches to offset the limitations of qualitative study. Since small sample size was used in the current study due to the qualitative nature and selected interviews which makes generalisation of results very limited. It is suggested that a larger sample size be used in any future studies to address the limitational gap. Finally, the study revealed the role in chiefs and opinion leaders in the preservation of green areas as a very important one since all respondents displayed a sense of obedience to rules passed by chiefs. It is recommended to PBL-Netherlands Environmental Agency that, research is conducted on how chiefs, the indigenous people, local communities and district assembly can collaborate on the preservation of green areas to promote inclusive green growth as part of their quest to explore scenarios for inclusive green growth on the Kumasi landscape of Ghana.

5.8 Recommendations.

The following recommendations are made based on the finding and conclusions of the study by the researcher;

- The Assembly should to make conscious efforts provide access to inclusive and accessible open green and public spaces for all persons as all respondents of all ages and sex expressed interest in accessing and protecting such areas. Agricultural land areas must also be protected to ensure productive and sustainable agriculture.

- Efforts should be made by both traditional authorities and the Assembly to revise and uphold norms, beliefs and customs since they are found to aid in the preservation of green areas
- Assembly should encourage the planting to trees around buildings especially around buildings along water ways to replace depleted green areas and also educate the local folks on the need for green areas preservation and dangers of green areas depletion.

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Annex 1: Research Instruments and Time schedule

Name of Researcher: Vida Osei-Agyemang

Thesis Topic: Sociocultural factors and value of green areas: A case study of Afigya Kwabre District, Kumasi.

Focus District: Afigya Kwabre

RESPONDENT OVERVIEW:

Interview Guide No. and Category	Respondent	Sample		Specific Location
		Male:15	Female:15	
Guide 1: District Assembly Officials	Development Planning Officer	1		Kodie
	Physical Planning Officer	1		
Guide 2: Chiefs, Queen mothers & Opinion Leaders	Chiefs	2		Kodie
	Queen mothers		2	Buoho
	Opinion Leaders • 1 Linguist • 1 Elder • 1 Female Assembly member • 1 Female Pastor • 1 Imam • 1 Traditional priest	4	1 1 1	Ntribuoho(traditionalist) Kodie Heman
Guide 3: Household heads Teachers Students Residents	Male Households heads Female Headed Households Teachers Students Residents (shop owners, artisans, hairdressers etc.)	3 1 1 2	 4 2 1 3	Kodie Buoho Ntiribuoho

NB: PLEASE NOT THAT THE TEXT IN BLUE ARE JUST TO GUIDE IN ADMINISTERING THE QUESTIONS.

Introduction

My name is Vida Osei-Agyemang, a Ghanaian Master student studying at the Institute of Housing and Urban Development Studies at the Erasmus University in Rotterdam. I am carrying out this research as part of my master programme with the aim of explaining how

sociocultural factors influence perceived value of green areas in Afigya Kwabre District in the Ashanti Region of Ghana. I am interviewing you because of your knowledge and experience as a professional of the District Assembly. Our interview is aimed at gathering data for academic purposes. It will take not more than 45 minutes. With your permission, I will like to record our conversation to help me in my report later. Kindly be assured that all data will be kept with utmost confidentiality.

Preamble: What is your understanding of green areas? Please ask this question for their view on what green areas are before you explain to them as indicated below.

NB: For the purpose of this study green areas include parks and recreational areas, open spaces/vegetation, grass, gardens, lawns, wetlands, farmlands and woodland / forest areas.

INTERVIEW GUIDE 1: DISTRICT ASSEMBLY OFFICIALS	
Position of Respondent: **Contact #:** **E-mail:** **Time Started [ ] Time Ended [ ]**	
NO.	**QUESTIONS**
PART A: SOCIO-DEMOGRAPHIC CHARACTERISTICS	
1	• Gender [ ] Male [ ] Female • Age [ ] Below 20 years [ ] 20-35 years [ ]35 – 50 years [ ]50 – 65 years [ ] 65+ years • Educational level [ ] Non-formal education [ ] Basic education [ ] Secondary education [ ]Tertiary education • Occupation [ ] Please specify • Income level [ ] 100 – 500Cedis [ ] 500 -1000Cedis [ ] 1000 – 1500Cedis 1500 – 2000Cedis 2000 Cedis + • Ethnicity/Tribe [ ] Asante [ ] Bono [ ] Fante [ ] Frafra [ ] Other, please specify • Religion [ ] Christian [ ] Muslim [ ] Traditionalist [ ]Others, Please specify • Number of family member [ ] No. of Males [ ]. No. of females. [ ]
PART B: NORMS, BELIEFS AND CUSTOMS	
2.	Are you aware of an existing rule on the preservation of green areas? • Formal rule [ ] Yes [ ] No • Informal rule [ ] Yes [ ] No

	Which one are you more familiar with and what are the rules?
3.	Are there any generally acceptable rules guiding the protection and management of green areas in your district? If yes what are they? How acceptable are these rules to people? Why?
4.	Are there general community beliefs about green areas? What are they and why?
5.	Are there any myths or superstitions about green areas that you know about? Can you tell what they are? What about taboos? What are they?
6.	Does your religion say anything about How to use green areas? • How to maintain green areas? • How to protect the loss of green areas? What does it say?
7	Do parks, open spaces, farmlands etc. contribute to your way of worship in any way? How?
PART C: MOTIVATING, DEMOTIVATING FACTORS & RESIDENTS SATISFACTION LEVELS	
8.	How often do you visit green areas? What attracts you to visit such places?
9.	What social activities do you organise or engage in when you visit green areas? Why?
10.	What do you do/are you doing as an assembly to ensure that green areas are clean, safe and maintained?
11.	Are there any directives by the assembly on how close green areas are to be kept close to houses in the district (say within 100, 200 or 300 metres)?
12.	How close do you want green areas around your house or office? (e.g. say within 100, 200 or 300 metres etc.)
13.	How safe do you feel with the presence of green areas in your neighbourhood? Rate on a scale of 1 to 5 Why? How safe do you feel when using green areas? Rate on a scale of 1 to 5 Why? Has your organization done anything to increase or promote safety at places with green areas?
14.	Are there any factors or reasons that prevents the assembly from keeping green areas? What are some of the factors or reasons that prevents you from keeping green areas?
15.	Does green areas make you happy? [ ] Yes [ ] No How?
PART D: PERCIEVED VALUE OF GREEN AREAS	
16.	What does your do assembly to improve the benefits provided by green areas?

17.	Does green areas provide you with any of the following benefits? • Aesthetics benefits. How? • Cultural benefits. How? • Spiritual benefits. How? What do you do as an assembly to enhance these benefits
18.	Do you think there are any health benefits of green areas? What are they? What do you do as an assembly to promote these benefits?
19.	Do you think green areas are beneficial to the environment in any way? How?
20.	What is the state of green areas in the district ? Why? How has the assembly contributed to improve the state of green areas?
21.	Do you think that there is a loss of green areas in your district? Are you worried by the loss of green areas in any way? Why
22.	Do you think there is the need to preserve green areas? Why?
23.	Do you as an assembly make provisions in your spatial development plans for green areas? How well are these plans implemented?
24.	What measures are in place by the assembly to manage, protect and preserve green areas? Are these measures oral or documented? What sanctions are meted out to defaulters?
25.	What are the types of green areas in your District? What do you think about them? Do u like them?
26.	Are there any specific types that you would have preferred? Why?

Please follow up with pictures. Do not explain what the picture is intended to measure to respondents.

Picture A is seeking to measure Preferred Type of Green Areas

- What do you see in this picture?
- Which type do you prefer most? Why?
- Any particular reasons why you do not prefer the others?

Picture B is seeking to measure physical features and influence on affection for green areas.

- What do you see in this picture?
- Which one will you prefer to use and why?
- What could be the reason for the difference?
- What can the assembly do to prevent the deterioration?

Picture C is seeking to measure Concern for Loss of Green Areas

- What do you see in this picture?
- Does the difference worry you in any way?
- Where would you want to live and why?
- What could account for the difference in picture?

Picture D is seeking to measure people appreciation of beauty provided by natural landscape.

- What do you see in this picture?
- What do you like about them?
- Which one truly represents nature?

Picture E is seeking to measure factors that attracts a person to use a recreational park.

- What do you see in this picture?
- Which one attracts you most? Why?
- Which one will you want to visit? Why?
- What other feature would you have preferred in any of the parks?

Conclusion

Is there anything you will like to add? Can I contact you in case I need some clarification during my analysis?

Please can I include your name in the analysis of my data? [ ] Yes [ ] No

Name of Respondent:

Thank you for your time and attention. Once again, I wish to assure you that, this conversation is purely for academic purposes and will be treated with the confidentiality it deserves

INTERVIEW GUIDE 2: CHIEFS, QUEEN MOTHERS & OPINION LEADERS	
Position of Respondent: **Contact #:** **E-mail:** **Time Started [ ] Time Ended [ ]**	
NO.	**QUESTIONS**
PART A: SOCIO-DEMOGRAPHIC CHARACTERISTICS	
1	• Gender [ ] Male [ ] Female • Age [ ] Below 20 years [ ] 20-35 years [ ]35 – 50 years [ ]50 – 65 years [ ] 65+ years • Educational level [ ] Non-formal education [ ] Basic education [ ] Secondary education [ ]Tertiary education • Occupation [ ] Please specify • Income level [ ] 100 – 500Cedis [ ] 600 -1000Cedis [ ] 1000 – 1500Cedis 1500 – 2000Cedis 2000 Cedis + • Ethnicity/Tribe [ ] Asante [ ] Bono [ ] Fante [ ] Frafra [ ] Other, please specify

	• Religion [ ] Christian [ ] Muslim [ ] Traditionalist [ ]Others, Please specify • Number of family members [ ] No. of Males [ ]. No. of females. [ ]
PART B: NORMS, BELIEFS AND CUSTOMS	
2.	Are you aware of an existing rule on the that urges people to keep green areas? • Formal rule • Informal rule Which one is more abided by? Why?
3.	Are there any generally acceptable rules by your prescribed by the traditional council to guide the protection and management of green areas in your community? How acceptable are these rules to people?
4.	Are there general community beliefs about the presence of green areas at shrines or places of worship? What are they and why? How did they come about?
5.	Are there any myths or superstitions about green areas that you know about? Can you tell what they are? What about taboos? What are they? What sanction are meted out to defaulters by your outfit?
6.	Does your religion say anything about ; • How to use green areas? • How to maintain green areas? • How to protect the loss of green areas? What does it say?
7.	Does parks, open spaces, farmlands etc. contribute to your way of worship in any way? How?
PART C: MOTIVATING, DEMOTIVATING FACTORS & RESIDENTS SATISFACTION LEVELS	
8.	How often do you visit green areas? What attracts you to visit such places? Can you tell anything about your community?
9.	What social activities do you organise or engage in when you visit green areas? Why? Are many people engaged in these activities?
10.	How close do you want green areas around your house or office? (e.g. say within 100, 200 or 300 metres etc.)
	What do you do/are you doing as traditional council to ensure that green areas are clean, safe and maintained?
11.	How safe do you feel with the presence of green areas in your neighbourhood ? Rate on a scale of 1 to 5 Why?

	How safe do you feel when using green areas? Rate on a scale of 1 to 5 Why? Have you had complaints form you community in relation to this?
12.	What are some of the things that prevents you from keeping green spaces? What are some of the things that prevents you from using green areas?
13.	Do green areas make you happy? How? Can you share what the community think/feel?
PART D: PERCIEVED VALUE OF GREEN AREAS	
14.	Does green areas provide you with any of the following benefits? • Beautification. How? • Cultural benefits. How? • Spiritual benefits. How?
15.	Do you think there are any health benefits of green areas? What are they?
16.	Do you think green areas are useful to the environment in any way? How?
17.	What is the state of green areas in your community ? Why? How has the traditional council contributed to improve the state of green areas?
18.	Are you worried by the loss of green areas in any way? Why
19.	Do you think there is the need to preserve green areas? Why?
20.	What measures do you have in place as traditional council to manage, protect and preserve green areas? • Are these measures oral or documented. • How are these measures enforced? What sanctions are meted out to defaulters?
21.	What are the types of green areas in your District? Do u like them?
22.	Are there any specific types that you would have preferred? Why?

Please follow up with pictures. Do not explain what the picture is intended to measure to respondents.

Picture A is seeking to measure Preferred Type of Green Areas

- What do you see in this picture?
- Which type do you prefer most? Why?
- Any particular reasons why you do not prefer the others?

Picture B is seeking to measure physical features and influence on affection for green areas.

- What do you see in this picture?
- Which one will you prefer to use and why?
- What could be the reason for the difference?

- What can be done to prevent the deterioration?

Picture C is seeking to measure Concern for Loss of Green Areas

- What do you see in this picture?
- Does the difference worry you in any way?
- Where would you want to live and why?
- What could account for the difference in picture?

Picture D is seeking to measure people appreciation of beauty provided by natural landscape.

- What do you see in this picture?
- What do you like about them?
- Which one truly represents nature?

Picture E is seeking to measure factors that attracts a person to use a recreational park.

- What do you see in this picture?
- Which one attracts you most? Why?
- Which one will you want to visit? Why?
- What other feature would you have preferred in any of the parks?

Conclusion

Is there anything you will like to add?

Can I contact you in case I need some clarification during my analysis?

Please can I include your name in the analysis of my data? [ ] Yes [ ] No

Name of Respondent:

Thank you for your time and attention. Once again, I wish to assure you that, this conversation is purely for academic purposes and will be treated with the confidentiality it deserves

INTERVIEW GUIDE 3: HOUSEHOLD HEADS, RESIDENTS, TEACHERS AND STUDENTS	
Position of Respondent: **Contact #:** **E-Mail:** **Time Started [ ] Time Ended [ ]**	
NO.	**QUESTIONS**
PART A: SOCIO-DEMOGRAPHIC CHARACTERISTICS	
1	• Gender [ ] Male [ ] Female • Age [ ] Below 20 years [ ] 20-35 years [ ]35 – 50 years [ ]50 – 65 years [ ] 65+ years • Educational level [ ] Non-formal education [ ] Basic education [ ] Secondary education [ ]Tertiary education • Occupation [ ] Please specify • Income level [ ] 100 – 500Cedis [ ] 600 -1000Cedis [ ] 1000 – 1500Cedis 1500 – 2000Cedis 2000 Cedis +

	• Ethnicity/Tribe [ ] Asante [ ] Bono [ ] Fante [ ] Frafra [ ] Other, please specify • Religion [ ] Christian [ ] Muslim [ ] Traditionalist [ ]Others, Please specify • Number of family members [ ] No. of Males [ ]. No. of females. [ ] Ages [ ]
PART B: NORMS, BELIEFS AND CUSTOMS	
2.	Are you aware of an existing rule on how to maintain and keep green areas? • Formal rule • Informal rule Which one is more abided by? Why?
3.	Are you aware of any generally acceptable rules guiding the protection and management of green areas in your community? How do people find these rules?
4.	Are you aware of general community beliefs about the presence of green areas at places of worship? What are they and why? How did they come about?
5.	Are there any myths or superstitions about green areas that you know about? Can you tell what they are? What about taboos? What are they?
6.	Does your religion say anything about • How to use green areas? • How to maintain green areas? • How to protect the loss of green areas? What does it say? Do you agree with them?
	Are parks, open spaces, farmlands etc. of any importance to your way of worship? How?
PART C: MOTIVATING, DEMOTIVATING FACTORS & RESIDENTS SATISFACTION LEVELS	
7.	How often do you visit green areas alone or with your family? What attracts you to visit such places?
8.	What social activities do you organise or engage in when you visit green areas? Why?
9.	How close do you want green areas around your house or office? (e.g. Within 10mins walking distance etc.)
10.	Does the presence of green areas in your neighbourhood give you any reason to fear? Why?

	Do you have a bad past experience in relation to the use of green areas? Can you please share? Are you comfortable to walk alone around green areas in your neighbourhood? Why? Does it feel save to use green areas in your neighbourhood? How?
11.	What are some of the things that prevents you from keeping green spaces? What are some of the things that prevents you from using green areas?
12.	Does green areas make you happy? Why?
PART D: PERCIEVED VALUE OF GREEN AREAS	
13.	Does green areas provide you with any of the following benefits? • Beautification. How? • Cultural benefits. How? • Spiritual benefits. How?
14.	Do you think there are any health benefits of green areas? What are they?
15.	Do you think green areas are useful to the environment in any way? How?
16.	What is the state of green areas in your community ? Why?
	Are you worried by the loss of green areas in any way? Why
17.	Do you think there is the need to prevent the loss of green areas? Why?
18.	In your opinion, what can be done to preserve green areas?
19.	What are the types of green areas are in your District? Do u like them?
20.	Are there any specific types that you would have preferred? Why?

Please follow up with pictures. Do not explain what the picture is intended to measure to respondents.

Picture A is seeking to measure Preferred Type of Green Areas

- What do you see in this picture?
- Which type do you prefer most? Why?
- Any particular reasons why you do not prefer the others?

Picture B is seeking to measure physical features and influence on affection for green areas.

- What do you see in this picture?
- Which one will you prefer to use and why?
- What could be the reason for the difference?
- What can be done to prevent the deterioration?

Picture C is seeking to measure Concern for Loss of Green Areas

- What do you see in this picture?
- Does the difference worry you in any way?
- Where would you want to live and why?
- What could account for the difference in picture?

Picture D is seeking to measure people appreciation of beauty provided by natural landscape.

- What do you see in this picture?
- What do you like about them?
- Which one truly represents nature?

Picture E is seeking to measure factors that attracts a person to use a recreational park.

- What do you see in this picture?
- Which one attracts you most? Why?
- Which one will you want to visit? Why?
- What other feature would you have preferred in any of the parks?

Conclusion

Is there anything you will like to add?

Can I contact you in case I need some clarification during my analysis?

Please can I include your name in the analysis of my data? [ ] Yes [ ] No

Name of Respondent:

Thank you for your time and attention. Once again, I wish to assure you that, this conversation is purely for academic purposes and will be treated with the confidentiality it deserves.

A

Adopted from Rupprecht & Byrne, 2014

B

C

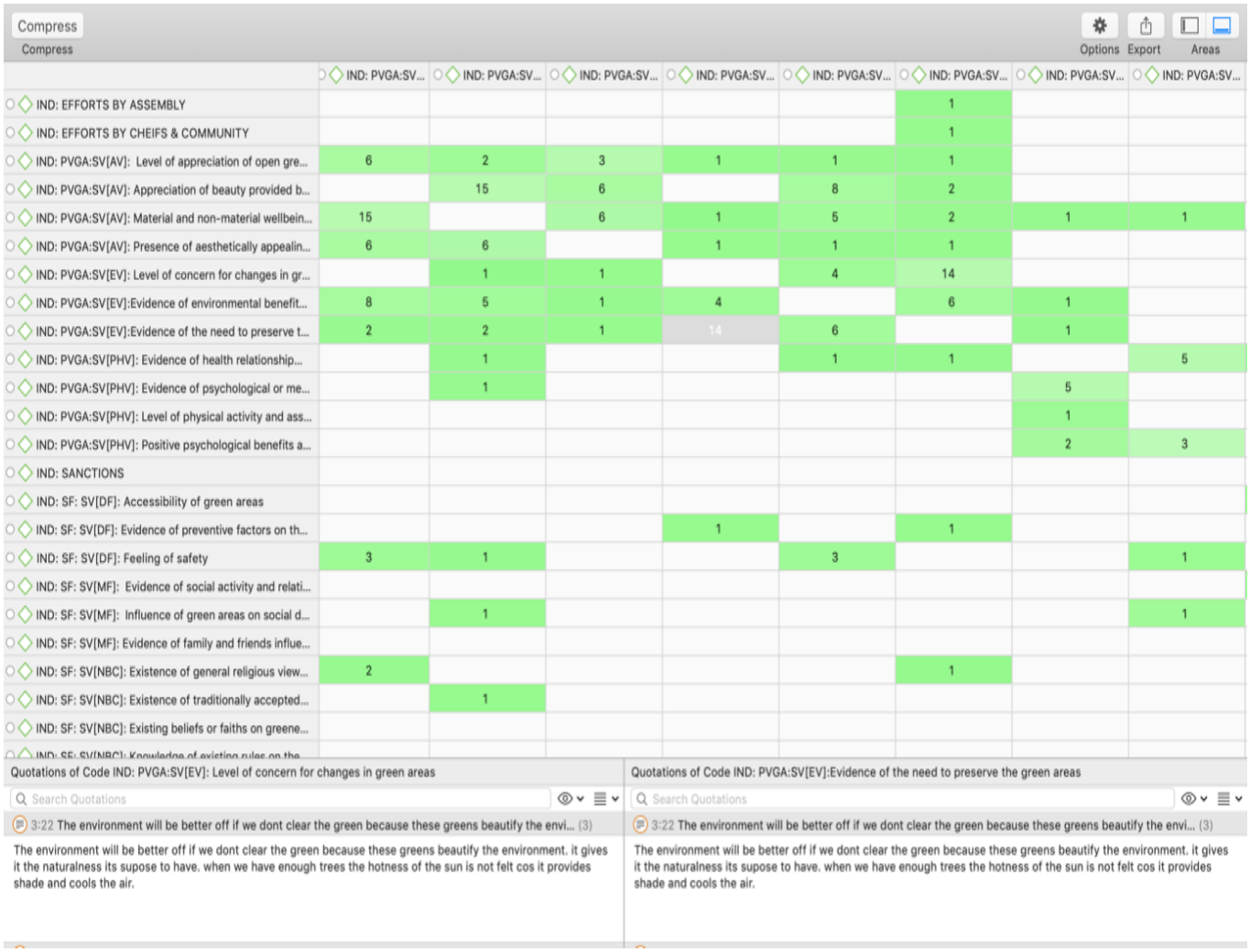
D

E

Work Plan

Dates	Tasks	Remarks
8th June 2020	Submission of 1st Proposal	Submitted completed
11th June 2020	'Go' or 'No Go' Decision	'Go' decision
12th June – 15th June	Work on Research instruments	Completed
16th June - 10th July 2020	Field Work	Completed with outstanding data
11th - 9th August 2020	Data Analysis	80% Complete
10th August 2020	Draft submission of Thesis	Incomplete Draft submitted
18th – 30th August 2020	Improving thesis bases on comments from supervisors	
31st August 2020	Final submission of Thesis	Not Submitted
16th November 2020	Final submission of Thesis	Submitted

Annex 2: Co-occurrence Table



	IND: PVGA:SV...	IND: PVGA:SV...	IND: PVGA:SV...	IND: PVGA:SV...	IND: PVGA:SV...	IND: PVGA:SV...	IND: PVGA:SV...	IND: PVGA:SV...
IND: EFFORTS BY ASSEMBLY						1		
IND: EFFORTS BY CHEIFS & COMMUNITY						1		
IND: PVGA:SV[AV]: Level of appreciation of open gre...	6	2	3	1	1	1		
IND: PVGA:SV[AV]: Appreciation of beauty provided b...		15	6		8	2		
IND: PVGA:SV[AV]: Material and non-material wellbein...	15		6	1	5	2	1	1
IND: PVGA:SV[AV]: Presence of aesthetically appealin...	6	6		1	1	1		
IND: PVGA:SV[EV]: Level of concern for changes in gr...		1	1		4	14		
IND: PVGA:SV[EV]:Evidence of environmental benefit...	8	5	1	4		6	1	
IND: PVGA:SV[EV]:Evidence of the need to preserve t...	2	2	1	14	6		1	
IND: PVGA:SV[PHV]: Evidence of health relationship...		1			1	1		5
IND: PVGA:SV[PHV]: Evidence of psychological or me...		1					5	
IND: PVGA:SV[PHV]: Level of physical activity and ass...							1	
IND: PVGA:SV[PHV]: Positive psychological benefits a...							2	3
IND: SANCTIONS								
IND: SF: SV[DF]: Accessibility of green areas								
IND: SF: SV[DF]: Evidence of preventive factors on th...				1		1		
IND: SF: SV[DF]: Feeling of safety	3	1			3			1
IND: SF: SV[MF]: Evidence of social activity and relati...								
IND: SF: SV[MF]: Influence of green areas on social d...		1						1
IND: SF: SV[MF]: Evidence of family and friends influe...								
IND: SF: SV[NBC]: Existence of general religious view...	2					1		
IND: SF: SV[NBC]: Existence of traditionally accepted...		1						
IND: SF: SV[NBC]: Existing beliefs or faiths on greene...								

Quotations of Code IND: PVGA:SV[EV]: Level of concern for changes in green areas

Search Quotations

3:22 The environment will be better off if we dont clear the green because these greens beautify the envi... (3)

The environment will be better off if we dont clear the green because these greens beautify the environment. it gives it the naturalness its supose to have. when we have enough trees the hotness of the sun is not felt cos it provides shade and cools the air.

Quotations of Code IND: PVGA:SV[EV]:Evidence of the need to preserve the green areas

Search Quotations

3:22 The environment will be better off if we dont clear the green because these greens beautify the envi... (3)

The environment will be better off if we dont clear the green because these greens beautify the environment. it gives it the naturalness its supose to have. when we have enough trees the hotness of the sun is not felt cos it provides shade and cools the air.

ANNEX 3: Pictures from field documentation

State of Green Areas around Ntiribuoho Primary School

State of Hemang School Park

Evidence of trees planted around Ntiribuoho Primary School

Rock out-crop at Buoho

Forest Vegetation in the

District

Degraded forest at Kodie

State of wetlands at Kodie

Annex 4: HIS copyright form

In order to allow the HIS 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.

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2. The number of pages for the thesis is about 50 (without annexes).
3. The thesis should be edited

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Your Name(s) : Vida Osei-Agyemang

Your Signature(s) : 

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