ASHESI

A Market Research Study for the development of container housing units for the Ashesi Community

APPLIED PROJECT

Hamza Kamara

ASHESI UNIVERSITY COLLEGE

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DECLARATION

I hereby declare that this Applied Project Report is the result of my own research work and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature: ……………………………………

Candidate's Name: Hamza Kamara

Date: ……………………………………………………….

I hereby declare that the preparation and presentation of the Applied Project Report were supervised in accordance with the guidelines on supervision of applied projects laid down by Ashesi University College

Supervisor's Signature: …………………………………...

Supervisor's Name: Dr. Sena Agbodjah Agyepong

Date: ………………………………………………………

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EXECUTIVE SUMMARY

A new real estate developer is seeking to build container housing units as housing accommodation for students, staff and faculty of Ashesi University College, one of Ghana's leading private universities. To fulfill this, the developer needs to have knowledge of the target market, trends in existing housing accommodation and understand the potential of their project compared with competitive developments. Thus, the goal of this project is to conduct a market research study to provide insights into the Ashesi community to aid in the redefining of the developer's idea, opportunities within the target market and challenges that can be pre-empted. In conducting this market research, data was sourced from the Ghana Building Code; a building technologist; an architect; a design enthusiast; an operations manager and current and potential users of this development. Research methods took the form of literature reviews, desk research and guided interviews.

It was found that for a developer considering constructing housing accommodation would have to mimic to an extent the features that currently exists in competitive developments. References to existing features in the various competing developments is to aid the client in understanding buyers' expectations. Also, the dominant influencing factors for housing were price, proximity to the Ashesi University Campus and availability of desired amenities. Majority of student respondents were willing to pay between 2,500 - 4, 500 cedis and majority of the staff and faculty who partook in this research were willing to pay below 500 cedis for a housing unit constructed from containers.

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CHAPTER ONE

1.0 Introduction

This market research study is to give insights into container housing, market characteristics of the Ashesi Community, factors influence influencing housing choices of student, staff and faculty, gaps in the provision of housing accommodation and the desirability of container hostels and apartments for members of the Ashesi Community.

1.1 Background of Study

The housing regime in Ghana ranges between formal and informal housing (Arku, 2009). From a recorded 42% in 2000 to a 51.5% in 2010, it cannot be disputed that Ghana is urbanizing at an increasing rate (Ministry of Water Resources,Works and Housing , 2015). This rapid urbanization sees about 60% of the urban population being centred in the Greater Accra, Ashanti and Western Regions. In 2010, the Population and Housing Census recorded total stocks of houses for the country at 3,392,745 with approximately 57.7% of this are in rural areas. The stock of housing increased by 60.1% from the previously recorded figure in 2000 (Ghana Statistical Service, 2014). The Ghana Living Standards Survey categorises housing in Ghana into rooms in compounds, rooms, separate houses(bungalows), flats/apartments, semi-detached houses, several huts/buildings, tents/improvised buildings (kiosks/containers) and others (Bank Of Ghana , 2007).

The cost of housing provided by Ghana’s formal real estate market is above the means of majority of households. According to a report by the Inclusive Business Action Network, in 2015 the cheapest house on the formal real estate market costs USD 24,297 with approximately 1% of potential customers having adequate purchasing power (Kavaarpuo & Sarfoh, 2016). Rental rates within the capital city tend to price out middle and low-income earners and lending rates among commercial banks stands at above 30% excluding virtually all expect those on high incomes. Affordable housing is one buzzword in conversations on the way forward for the nation's housing sector. Affordable housing in its definition is an interplay of household income and expenditure which should not exceed a ceiling relative to the overall average. Moreover, the term affordable housing construes different meanings for the various players along the housing value chain (Sarfoh, Kavaarpuo, & Ayitio, 2016).

To financiers, affordable housing means price relative to cost incurred, for households, it is determined by price, build quality and location and lastly for developers, it is a function of the quality of building fabric and its price relative to the income of the target group (Kavaarpuo & Sarfoh, 2016). Increasing demand for affordable housing has led to the development and search for alternative construction materials to provide more housing units to fill in the teething housing gap. In developed parts of the world, the need for affordable housing has led to the proliferation and adoption of low-cost building technologies such as shipping containers also known as intermodal steel building unit (ISBU). This alternative solution presents an eco-friendly, sustainable and creative solution to the housing crisis. Nonetheless, this phenomenon presents room for policy making, regulations and zoning issues, testing feasibility on location basis and its desirability in the Ghanaian market. It is for this reason that

1.2 The Client

The client is a start up called The Shack established up by two young entrepreneurs looking to explore opportunities in the real estate sector. They are looking to explore affordable housing and a mixed use development for early career starters and university students and start-ups, using container housing or cargo architecture. The Shack plans to build 25 units of container housing as a pilot project on a 70 x 55 feet land, which they plan to lease near the Ashesi University College in Berekuso, Eastern Region. The Shack subsequently plans is to them duplicate such developments in inner cities or out of town locations within Accra. The client is looking to study how feasible their pilot is at Ashesi University

1.2.1 Problem Statement

An efficient housing market is imperative to national development and a good quality of living standards of individuals (Aryeetey, 2015). For this reason, measures need to be taken by governments to ensure the prosperity of the real estate and housing sector. Prosperity can be guaranteed with the introduction of effective policies, the promotion of public and private partnerships and the like. It is estimated that 700,000 housing units are needed annually to cater for the housing deficit Ghana faces. This study seeks to check the market's readiness for alternatives such as container housing to traditional housing models, and the possible construction of homes with shipping containers and existing traditional construction materials to reduce the cost of housing at Ashesi University College for students, staff and faculty of the university.

1.2.2 Project Objective

The clients seek to use shipping containers as a suitable alternative material to constructing students hostel and staff accommodation for members of the Ashesi University College. He would like to have an idea of the target market's desirability to patronise a container development, its suitability to the landscape, the existing perceptions of container housing and determine how to position and differentiate their development from competing developments.

1.3 General Environment (PESTLE analysis)

1.3.1 Political

The black star in the Ghanaian flag created after independence signified that it was going to be a rising star/ beacon of hope in Africa. It is of no surprise that Ghana is currently considered as one of the more stable countries in Africa. The Mo Ibrahim Index of African Governance which ranks the performance of countries using a rubric of satisfactory levels of citizens politically, socially and economically has ranked Ghana 7th in its 2016 index. On Safety and Rule of Law, Ghana placed 6th but was ranked 14th, 23rd, 11th and 5th in the sub-categories of Rule of Law, accountability personal safety and national security respectively. (Ghana Investment Promotion Centre, 2018)

Under the administration of British rule, housing schemes were financed by the central government. Subsequently, the Department of Social Welfare and Housing was created with the mandate of setting housing policies and implementing housing schemes. The creation of seven subsidized housing estates located in Accra, Takoradi and Kumasi can be attributed to the work of the Department of Social Welfare and Housing. These seven housing estates were however accessible to war veterans, urban public and civil servants and colonial administrators (Arku, 2009).

Under the regime of Ghana's first President post independence, Osagyefo Dr. Kwame Nkrumah, the state was highly involved in the provision of public housing. In addition, there was a cap on rent Two institutions namely the State Housing Corporation (SHC) and the Tema Development Corporation (TDC) for development in the various regions, the port and industrial town of Tema respectively. The Bank for Housing and Construction and the First Ghana Building Society were built to provide financial support for public housing (Ghana

Statistical Service, 2014). Ghana's housing sector was being controlled by a 7-year development plan policy document. [what did it spell out]

Between the mid 1980's and the early 1990's, the state's policy was geared towards creating a conducive environment for the participation of the private sector in the delivery of housing. This was the economic liberalization era which saw less state involvement in the housing sector which subsequently led to the removal of the rent cap. This led to the formation of private real estate companies and the Ghana Real Estate Developers' Association.

The mid – 1990s to date has witnessed a deeper impression of the private sector in housing delivery in Ghana. A bulk of housing being provided by the private informal sector. State housing agencies were mismanaged with some of them going through phases of collapse and revamping under various administrations. This era is characterized by deeper incorporation of the Ghanaian economy into the global economy and the rapid urbanization and extensive expansion of Ghanaian large cities such as Accra, Kumasi, Tema, Sekondi-Takoradi and Tamale (Grant and Nijman 2002; Grant 2009). Similar to trends observed in other parts of the world, increasingly, globalization and urbanization are associated with higher land and housing prices as international interest groups and actors compete with national and local actors for land and housing (Owusu 2008).

The different ruling parties in Ghana have distinct political ideologies and these affect the policies they decide to adopt. It demonstrates that global real estate and property markets play an increasingly important role in international relations,

In the early phases of an upturn the industry may be in conflict over the issue of stricter regulations, but generally supports new government subsidies and programs designed to stimulate investment and increase production. The larger actors in the industry become more willing to lobby for legislation and public intervention in order to strengthen their private economic position

Election results, economic policies and international relations all have spill over effects on global real estate by (directly or indirectly) creating incentives for buyers to be drawn toward—or repelled from—various geographic markets (Certified International Property Specialist , 2017). Real estate investors take a keen interest on such political activities, pronouncements, formations and alignments…

Government policy and legal framework is critical as policies and actions by a government may lead to war, precipitate terrorism and civil disobedience and; create an environment for confiscation, expropriation and nationalization of assets. Partnering with locals is recommended as a political risk mitigating measure for foreigners with interest in the local real estate market. While real estate is a global asset, in terms of market dynamics it is affected by local factors. Partnering with someone with deep local knowledge and networks help mitigate political risk (buyrentkenya.com, 2017).

1.3.2 Economic

The Ghanaian economy is strongly correlated to global commodities such as cocoa, gold and oil which are the three main sources of income and foreign exchange. Price swings for these three resources, increased spending on domestic public sector wages, an electricity shortage and other external factors have combined to slow the pace of development in recent years, leading to a depreciating currency and a budget shortfall. The structure of the Ghanaian economy over the years has remained highly unchanged with the Services Sector still in the lead. For 2017, the share of Services in overall output is estimated at 55.9 percent, a marginal decline from 56.8 percent registered in 2016. The share of Industry is estimated at 25.6 percent, compared with 24.3 percent in 2016, while that of Agriculture is estimated at 18.5 percent, compared with 18.9 percent recorded in 2016. For 2017, the services sector grew at an estimated 4.7 percent. The business and real estate sub sector grew by 4.2% (Ministry of Finance, 2017). Furthermore, in a commentary published by Deloitte on the 2018 budget of

Ghana, it mentions that as part of Ghana's plan to increase access to housing, the Ministry of Finance is partnering with financial institutions to develop local mortgage and housing finance markets to offer affordable mortgages at subsidised interest rates beginning with public sector workers (Deloitte, 2017). This should inform real estate developers to develop opportune housing concepts and proposals that will meet the demand of potential buyers as well as the budgets of various levels of household incomes

1.3.3 Social

Ghana's population is rapidly becoming urbanized. In 2000, the urban population was marked at 42% from 35% in 1984. In 2010, 51.5% was recorded. About 60% of Ghana's urban population is concentrated in Greater Accra. According to the National Housing Policy document, there is a shortfall of about 1.7 million units as at 2000. This figure is expected to rise to 2 million by 2018. This shortage has led to the growth of informal and slum housing in cities as well as a reduced standard of living accompanied with adverse effect on health and safety (Ministry of Water Resources,Works and Housing , 2015) . However affordable housing projects are underway. The $200 million Saglemi Affordable Housing Development in Prampram within the greater Accra region is expect to produce 5,000 units after completion. In addition to this, another $200 million project being undertaken by Brazilian-owned Construtora is expecting to produce 9,000 units (Oxford Business Group, 2016). This is evidence that the public sector has recognized the disequilibrium between the incomes of households, mortgage packages and the prices of houses in Ghana. Container housing

1.3.4 Technological

The increasing interconnectivity of the world continues to emphasize the role of ICT. The ICT sector in Ghana encompasses the telecommunication industry, the broadcasting industry and the support services providers (National Communications Authority , 2017). The growth in Ghana's ICT sector is mainly driven by the ICT for Accelerated Development Policy primary goal is to support an ICT led socio-economic development process aimed at transforming Ghana into a middle income, information-rich and knowledge-based society.

The real estate sector is supported by a base of websites that enhance the interaction of players in the market and customers. Some of these include Jumia, tonaton, ghanaproperty.org, meQasa among many others.

Conversely, it has been noted that preference for imported building materials and technologies over proven local materials in a factor that is detrimental to the Ghanaian real estate sector.

This has led to the inadequate utilization of the vast local raw material resources and affects the credibility and rate of adoption of these local raw materials in the long remains a key challenge facing the sector. Government should evolve strategies to provide the necessary support and incentives for the production of local building materials to promote appropriate technology and ensure collaboration between research and industry (Osei, 2013).

1.3.5 Legal

The dominant form of land holding form is customary land which is representative of rights and interests to land held by stools, skins clans and families. It is estimated that the customary and formal land sectors of the institutional arrangement administer two broad categories of land tenure regimes, namely customary lands (stools, family, clan etc.) and public lands, constituting approximately 80% and 20% of the land area respectively (Ministry of Lands and Natural Resources, 2010).

Evidence of ownership of land in Ghana can be proved through the Deed Registration or the title registration system. Acquisition of land in Ghana by foreigners has no special procedure although the services of a lawyer are advised so that due diligence can be conducted. However, a foreigner cannot have freehold interest in a land or a lease beyond 50 years. Legal work in the real estate industry encompasses the following but is not limited to (1) conducting due diligence and searches on land in Ghana, prior to acquisition and development, (2) advise on tax incentives for companies involved in real estate, (3) joint venture agreements for development of real estate, sale and purchase of properties, (4) project development, (5) drafting of apartment sales agreements, financing, real estate marketing agreements and (6) mergers and acquisitions of real estate based businesses (Ntrakwah&Co, 2016). In June 2016, the Parliament of Ghana held a second reading of the Real Estate Authority Bill 2014 to grant it a safe passage into its consideration stage for any proposed amendments. The bill seeks to regulate commercial transactions in the real estate sector, including the sale, purchase, rentals and leasing of real estate and fixed assets as well as real estate agents and practitioners.

One of the legal frameworks that guards the housing sector are the various housing policies. An inroad that is suggested by is by allocating a research fund to research into the development of local materials, building technologies, quality and standards, changing household tastes and preferences and land use planning. This research will go a long way to improve housing delivery for Ghanaians and sustain housing delivery (Boamah , 2014).

1.3.5 Environmental

The climate is Ghana is tropical with a dry and wet season. Temperatures are high and dry in the highlands, humid along the coast and hotter and drier northwards. The rain and the Harmattan winds are the other two significant weather events in Ghana. Ghana is facing serious sanitation and waste management challenges in addition to the prevalence of illegal mining, water pollution and deforestation. With regards to real estate, a serene environment with proper drainage systems, demarcated waterways, good roads, among others enhance a location chosen for real estate development. The use of shipping containers has a positive effect on the environment.

1.3.6 SWOT analysis

SWOT analysis is a management framework which inquires into strengths, weaknesses, opportunities, and threats (SWOTs), is the traditional means of searching for insights into ways of realizing the desired alignment which is expected to be profitable between a commercial venture and its environment. The traditional application of SWOT analysis suggests drawing up four quadrants each representing strengths, weakness, opportunities and threats and then listing favourable and unfavourable internal and external particulars. The user then ponders how these strengths may be leveraged to realize opportunities and how weaknesses, which exacerbate threats or impede progress, may be overcome (Valentin, 2001).

According to the article titled Making SWOT Analysis Work (1989), one of the qualities of SWOT is its ease of use as a funnel-like structuring device that helps sort out ideas about the future and a company's ability to exploit that future. Moreover, Piercy et al (1989), authors of the article are strongly of the view that the more defined the area for which SWOT is going to be used, the more productive the outcome. Some of these definitions could focus on the specific product market, specific customer segment, product policy in a given market or segment, pricing policy in a particular market and study of named competitions or similar competitors.

Uniquely to real estate development, a SWOT analysis is conducted to highlight the values and virtues of the development and appreciate the deterrents and obstacles to a proposed development's success (Miles , Berens, Eppli, & Weiss, 2007).

Table 1 SWOT Analysis of Project

Strengths	Weaknesses
1. Sustainable considerations with regards to the use of shipping containers is one strength of the development. The use of shipping containers reduces wastage. It also reduces the environmental impact of the development during its life cycle The use of shipping containers is environmentally friendly and helps in the preservation of natural land (Maphumulo, 2016). 2. Shipping containers are considered one of the strongest modular and mobile structures as they are able to withstand strong winds. 3. Shipping containers are easily transported, accessible and relatively flexible to work with. 4. The use of shipping containers offer savings in capital, reducing production time and resources. 5. The client has readily available finance.	1. Shipping containers have a limited lifespan of a little over fifty years as compared to conventionally built developments (Maphumulo, 2016). 2. Shipping containers require intensive insulation to ensure the unit remains cool or warm when necessary. 3. Specialist skills are required in the conversion of shipping containers to habitable units. 4. The available land for the project is being leased to the client. The developer is not the original owner of the land. 5. The client is a new developer with no background in real estate and very limited experiences insights.
Opportunities	**Threats**

1. The client has the opportunity to redefine perceptions of container housing. 2. With sustainability and durability as an asset, the client may gain a good reputation in the real estate industry. Sustainable perks could aid in accessing funding.	1. Political instability can affect the way in which land rights are handled, it can also reduce investor confidence in the real estate industry.

CHAPTER TWO: PROJECT NEEDS ASSESSMENT

2.0 Introduction

The term *needs assessment* is a general term for a three-phase process to collect information, analyse it, and create a training plan (Barbazette , 2004). There are three approaches to needs assessment. They are:

1. **Exploring what is**

   The first approach known as discrepancy - based needs, also termed as "exploring what is" (U.S. Department of Education:Office of Migrant Education , 2001). The reason for this is to substantiate what is already known about the target group, identify indicators that establish what is known, make a decision on the scope of the needs assessment, determine what kinds of information will help define the need, and where to find such information.

2. **Gather and analyse data**

The second phase is to gather and analyse data. The main aim of the second stage is to compare the ideal with what is or to determine if the proposed solution is best fit with the needs identified. "The major output from this phase is a set of needs statements in tentative order of priority, based on the criticality of the need, and its causes." problem finding and solving (U.S. Department of Education:Office of Migrant Education , 2001).

3. **Make decisions**

The third phase is dubbed "make decisions" and deals with innovation. The third phase bridges the analysis of the needs assessment to using its findings. It answers important questions such as: what needs are the most critical? what are some possible solutions? which solutions are best? (U.S. Department of Education:Office of Migrant Education , 2001)

Some of the reasons for conducting needs assessment include gaining information about a target population or community, deciding what needs are being met and which resources exist and determining what needs are not being addressed. Needs assessment also sets the criteria for generating solutions. Furthermore, needs assessment leads to action that will improve programs, services, organizational structure and operations, the choice of decisions or a combination of these elements (Barbazette , 2004).

2.1 Methods Used in Conducting Needs Assessment

The needs assessment was conducted mainly through guided face to face interviews and desk research. A guided interview which draws on the benefits of both informal and structured interview was applied as it gives the interviewer the freedom to deviate from the interview as needed to pursue fortuitous discoveries and fruitful directions. Also, guided interviews give more details and explanation to a subject as it permits follow up questions and place premium on the respondent's specific experience and knowledge. The objective for using face to face interviews was to understand in-depth the view point of selected research participants. These selected participants included the client, a building technologist, an architect and an individual with a container development.

The client is pivotal to throughout each phase of the project. It is very necessary to concretize the client's idea and assess the triggers for the proposed development. A good understanding of the developer themselves is necessary to achieving desired results.

In like manner, an architect's view was vital. Architects are experts at designing buildings that enhance the quality of life and user interaction with these buildings. The architect in question is one that is known too have a flair for merging traditional art forms and materials with modern techniques to create sustainable and flexible developments.

In addition, an individual with a container office and a build technologist were interviewed. The Ghana Building Code was also a good secondary resource as it showed what material was permissible for construction in the Ghanaian environment. The Ghana Building Code provides building professionals, developers and investors with common standards for public health, safety, fire protection, structural efficiency and environmental integrity and serves as a reference standard for designers, regulators, safety instructors and other stakeholders in the building and safety industry.

2.1 Findings from needs assessment

2.2.1 Findings from guided interviews

Interviews with the client were to find out their reasons for being keen on using container architecture as there were other alternatives where affordable housing is concerned. It was noted that the client came across a company offering housing options using shipping containers as an exoskeleton. The client further researched on the properties of container housing and believes it is suitable to replicate same for residential accommodation considering the existence of container kiosks used as convenient stores and the like. As such, for their first development, they would like to replicate seen forms of container developments.

Secondly, the client is environmentally inclined with a view that real estate development should enhance the natural environment and not harm it. Moreover, the proposed project site is being leased to the client and as such the client is seeking to have a sustainable development that enhances efficiency by moderating the use of materials, energy and the development space.

During the interview, the client expressed his view that students, staff and faculty of the Ashesi Community will demand innovative design combined with aesthetics, the concept of sustainability and attractive economics thus their aim to harness container housing to meet the needs of their target market.

The face to face interview with the architect revealed that the Ghanaian housing market is one that is highly consumerist. This has limited the evolvement of their housing market as majority of building materials and technologies are adopted from the Eastern and Western world. These building materials and technologies researched in the Eastern and Western world more often than not gain the approval of the International Organization for Standardization. Ghanaian users then begin to define these tastes according to what they see in the foreign markets. He further spoke about building technologies he has worked with such as the post and beam method, steel frames, wooden frames, glass facades and lastly reinforced concrete which he cited as common in Ghana. However, he cautioned that the adoption rate of building technologies is based on factors such as costs and perceptions.

The architect's impressions about the emergence of container housing was that it was proof about the possibility of anything and again the adoption of this technology by the Ghanaian market with reference to the existence of container kiosks and current request from his clients to offer proposed designs for container developments. He stated that with a 14-week delivery in an end to end process, an existing steel structure which makes for instant walls, roofs and floors coupled with the ingenuity of design to solve any challenges, container housing renders itself as a solution to the housing gap in Ghana. The given reasons make it possible for potential developers to explore using shipping containers for developments as it was evident that client's of the architect were requesting for such.

The face to face interview with the build technologist revealed that the process of constructing a container house is similar to that of a traditional building. The structure should be a patent container and not those constructed from inferior steel. The process included preparing concrete footings which will serve as a sub structure for the container. Depending on the space needed, the developer can bunch up more than one container. The shipping container then has to be cut for openings such as doors and windows. The partitioning of walls in the container can be done to suit the design of the developer. The walls, floors and ceiling of the container can be finished to the taste of the developer. The walls of the container need to be insulated. Materials such as plywood, polystyrene, gypsum or cement board can be used to finish the walls and ceiling. The floor of the container can be finished with a sand/concrete screed or with tiles. With constructing a container development in an area like Berekuso, the above processes apply. However, the developer has the option of developing the container elsewhere and transporting the finished container to the intended location.

In comparing container housing to regular cement based construction where costs, construction processes and the availability of technology and workmen are concerned, the building technologist stated that container developments tend to have cheaper initial and running costs. A greater proportion of the costs is incurred during the conversion of the shipping container to a habitable unit. The construction processes involved in container housing are unique although the materials needed in the process are readily available and there are commensurate and readily available skills among Ghanaian workmen.

In gaining insight into the look and feel of container developments, an individual who owned a container office in Labone was interviewed. The interviewee asserted that there was not much of a difference living and working from a container development compared to traditional sandcrete homes. The use of shipping containers offered the same functionality like any other development and for them the user experience has been excellent. The shipping containers also give room for adequate finishing and furnishing as it was narrated that others were impressed with the container development and usually could not detect the use of shipping containers. The owner has owned the development for almost a year and recounted their involvement in the designing, construction and finishing process. The developer mentioned that the cost of purchasing one container was about 15,000 cedis but was reluctant to reveal the cost of finishing his development. Nonetheless, some shortcomings were pointed out. One shortcoming for this particular individual was the incidence of fixed windows that could not be opened to allow ventilation. During power outages, the container heated up and made habitation uncomfortable. It can be deduced that the occurrence of mistakes should be reduced to the barest minimum as correction or reconstruction may be expensive. This can be avoided when a developer has their logistics well planned and a thorough design of their project.

For the purposes of maintenance, the interviews revealed the need for a developer to galvanize the container steel to prevent it the external part of the structure from damage and also giving it an easy to clean surface. As with conventional buildings, a developer can also set up a maintenance regiment to ensure routine checks of the container development and its amenities to increase the value and its life-span.

It was advised that any developer interested in container housing developments should seek to redefine the perceptions of Ghanaians. This speaks to the view noted by the architect that the calibre of Ghanaian clients he has worked with thus far consider the use of alternative building technologies other than reinforced cement concrete and blocks as a poor status symbol.

The build technologist advised that a developer who plans to embark any development more so container development should know their clientele, know their target market and be sure the proposed development is one that will turnover their investment. He cited failed attempts to introduce new building technologies such as wooden frames to this country and the difficulty in changing the tastes of the Ghanaian market. He cautioned against relying on “word of mouth” as a test of the market’s pulse and validation to proceed with the development. Rather, he emphasized the use of scientific analysis to assess the needs and demands of the target market. He advocated for strong aesthetic design of container developments with an emphasis on relatively lower costs. The incorporation of sustainable amenities and the sustainable perks of living in such a development will go a long way to boost the perception of container developments and future projects of the client.

2.2.2 Findings from desk research

To complement the needs assessment, a desk research was conducted. The Ghana Building Code is the reference for standards for designers, regulators, safety instructors and

Building Code is benchmarked against the Green Code and International Building Code.

Part 8 of the Ghana Building Code outlines the provisions for the use of new or alternative materials for construction. It starts that “any such material must be referenced to the Ghana Standards Authority for approval provided it is shown to be satisfactory for the purpose intended and at least the equivalent of that in this Part in quality, strength, effectiveness, fire resistance, durability, safety, maintenance and compatibility. Approval in writing shall be obtained by the owner or his agent before any new material is used. The Authority having jurisdiction shall base such approval on the principle set forth in this code and shall require that tests be carried out or sufficient evidence or proof be submitted, at the expense of the owner or his agent, to substantiate any claim for the proposed material.” It is important for the developer to comply with the rules and regulations of Ghana’s housing sector to safeguard their reputation as a player in the sector

Furthermore, according to the Intermodal Steel Building Units (ISBU) Association, ISO containers meets the standard for use as a building structure. An ISO container is a steel module constructed according to manufacturing standards set by the International Organization for Standardization (ISO) in compliance with criteria set by the International Maritime Organization. This informs the developer as to the kind of shipping containers to source for the development and affirms the safety of shipping containers as a building material (ISBU Association, 2006-20016).

2.2.3 Conclusions from needs assessment

Information garnered from the needs assessment conducted revealed that the trend of container housing is slowly gaining momentum as developers were beginning to turn to the use of containers for construction depending on the purpose and finances available for the intended development thus presenting opportunities in the market. In addition, the client was keen on using shipping containers for their development bearing in mind the positive impacts of its use on the environment and its economic advantages. The client held the belief that members of the Ashesi community will demand housing made from shipping containers. However, the adoption rates of alternative building technologies and successes of developments constructed using these technologies are hinged on public knowledge about the properties of these alternative building technologies, market indicators and perceptions about these technologies.

2.2.4 Proposed solutions

As a first time developer, knowledge of the needs and wants of the Ashesi Community will be necessary in refining the project idea. The client needs to be aware of the demographic data of the target market, their values, factors that influencing choices in the market, existing charges for accommodation, features of existing accommodation, perceptions and knowledge of the target market, market's willingness to stay in a container development, desired amenities and the like. The novelty of the use of shipping containers for residential purposes will mean that the client would have to assess its potential against competing and comparable developments. Furthermore, considering the materials, processes and skills elucidated to bring the client's project to fruition, the non-existent experiences of the client, unique to RED it is wise to have knowledge of the market as a developer cannot afford to sink costs into a development only to lose their investments.

CHAPTER THREE: MASTERY OF SUBJECT MATTER

3.0 Introduction

This chapter explores existing information about the problem identified, proposes frameworks for analysis and arriving at a solution. Also, this chapter serves as justification for the proposed solution.

3.1 Market Research

Market research is defined as the act of collecting information, analysing that information in a search for optimum solutions, seeking the most desirable equilibria and thus arriving at the most profitable solution justifiable by exact scientific tools.

During market research, the characteristics of the market affect the seller. (Kürthy, 1967)

The work of market research falls into the categories of data collection, fixing the data and analysis of the data to reveal trends and determinacies. Market research using non-quantitative methods should also be able to investigate human motivations that move buyers to be inclined towards certain types of goods and services. Among these motivations include taste, custom, degree of cultural sophistication, price and other factors.

In an article written by Day, (Day , 1967) many enterprises need market research in order to provide information regarding the desirability of a product whether it is an adaptation of an already existing product or a novel product concept to a specific environment. This research precedes the development process before any such idea is made tangible or realised.

Market research undertaken with target consumers assists in the process of formulating the new product and helps assess the fit of the total product with the rest of the marketing mix.

Market research generally provides information which will help the decision taker to make informed choices. Market research usually reveals hard information which is majorly statistical objective information about consumer sales, usage patterns or usage preferences. More often than not this kind of information is readily available from sources such as Government Departments, industry publications, previous retailer / service provider research and the like. In some cases, however, specially commissioned research surveys are needed to discover and define market opportunities. Soft data is also complementary to hard data in achieving a holistic market research. Soft data encompasses opinions, attitudes, emotions and prejudices which are difficult to elicit and not always amenable to statistical treatment.

Alan Wilson in Marketing Research: An integrated approach (Wilson, 2006) outlines the steps in the marketing research process that need to be completed in order to provide information that is valuable to the decision maker.

The seven marketing research steps proposed by Wilson are

- Identification of problems and opportunities
- Formulation of research needs/ research brief
- Selection of research provider / agency
- Creation of research design/ choice of research method
- Collection of secondary data
- Collection of primary data
- Analysis of data
- Preparation and presentation of research findings and recommendations.

Market research is enhanced by an in-depth understanding of market conditions, competitors' actions, the organization's own objectives, plans and capabilities, the nature of existing and new products or services and the awareness, attitudes and behaviour of consumers.

3.2 Market research in real estate

A developer's idea is faced with two probabilities; the probability of evolving into a desired project design for a specific site or face abandonment. Market research is one of the many functions that which combine other tasks to allow the developer feels reasonably confident of the project's feasibility. The figure below outlines activities the developer is expected to engage in or task a market researcher to do.

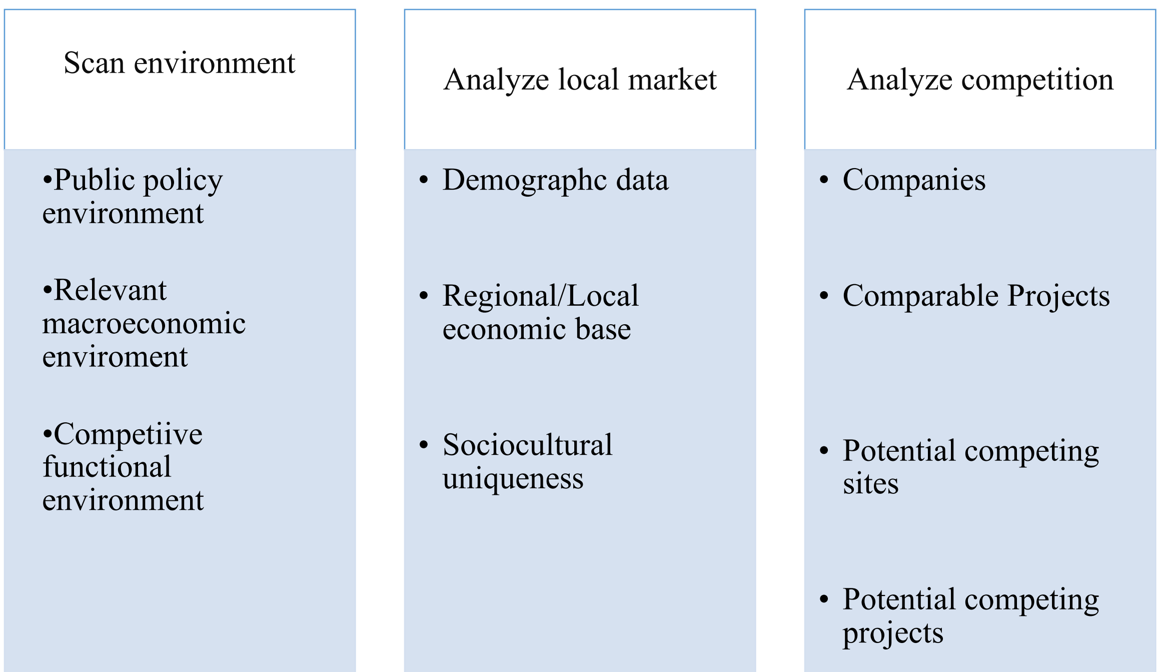

Figure 3.1

Real estate developers most often than not have a feel of the market when they initially consider a site or a development concept. Developers follow trends, observe other developers and highlight niches to fill in the market in coming up with initial ideas. However, ideas conceived by developers are not enough basis to sink costs that may not be recovered and yield losses.

Market research comes in to helps the developer answer questions that refine the project concept. (Novak , 1996)

According to Miles et Al (Miles, Netherton, & Schmitz, Real Estate Development : Principles and Processes, 2015), in real estate, a market study is the basis of any feasibility analysis. It analyses the long – term global, national, regional and local trends that were identified during the idea refinement of developers as relevant to the particular development.

A market research in the real estate industry should begin with an examination of national economic conditions coupled with international influences and projected trends keeping in mind the characteristics of the region or locality where the site is located.

The authors advised that market analysts not to do away with important national trends as they project demand for a particular site.

Subsequently, the market study should scope out comparable developments and determine features, functions and benefits of those existing properties that are in direct competition with the proposed development. The market study should essentially zone in on existing developments that pose as close competitors with the proposed development as this will provide useful market insights into the preferences of the target market.

However, specific to real estate, deductions made from a market research that reveal that a particular feature, function or benefit derived from an existing development should not assume such features as reasons for the success of competing developments.

The authors state that a market study in real estate should conclude with a projected absorption schedule for the market segments that are appropriate for the specific property. The basic question to ask is how many unites at what price over what time period will the target market be likely to absorb? Absorption schedule is defined as the time required for a development to be sold, rented or leased. It measures vacancy of a developed and represents the demand over a specified period, contrasted with supply.

Market research in the real estate industry should touch on the project description, site evaluation, analysis of market area, analysis of market economy, market demographics, supply and demand analysis.

Similarly in a book written by Dr. Abdul Hamid Mar Iman, the scope of a market research in real estate should cover market potential, recommendation of prices, project and product recommendations , identifying demand characteristics for the product. (Mar Iman, 2007) Relevant questions that need to be answered include :

- What is the population growth rate in the market area?
- What is the best configuration and size of units for the proposed development?
- How many units can the market absorb, at what price and over what length of time?
- What percent of market demand will the project capture and why?
- How should units be marketed to the target customers?
- What are the regulatory controls placed on this type of development?
- What is the communities position on the potential development in the proposed location?

In the same manner, Miles et al propose ten critical questions that every market research must answer whether it is for a new residential project, a retail centre, an office park or any other development (Miles , Berens, Eppli, & Weiss, 2007). These questions are:

1. What are the trends in this type of development?
2. What is the current market?

3. What is the depth of this market?
4. What are the market's perceived values?
5. What opportunities and challenges does the current market profile present?
6. How do you gain an understanding of your target market?
7. What are market positions, development programs, price points, absorption and lessons of competitive developments?
8. What are comparable developments?
9. What are the opportunities and challenges presented by the competitive and comparable projects?
10. What conclusion can be drawn about all aspects of the projects? Drawing conclusions on all areas of the project are grouped into the following subsections:

    a. The Market – Who are the buyers? What their characteristics? What do they want?
    b. Positioning – Where should the product fit in the potential buyers' mind relative to other choices?
    c. Opportunities for differentiation – Where can we stand out compared to other possible choices?

It is important that every market research does a good job at answering the above questions, to enable developers and members of the developmental team to market informed decisions. It is important to note that not all questions may be answered depending on the scope of the market research study, the resources available and the method used in conducting this research.

CHAPTER 4: FINDINGS AND RESULTS

4.0 Introduction

This section discusses the research approach used in conducting this market research study, sample, sampling procedures, data sources and data collection instruments. The chapter further analyses the findings and results of the market research study.

4.1 Research method and limitations

The research method adopts a conclusive research approach. Conclusive research design provides information that is inherently descriptive in nature. According to Wilson (2006), descriptive research provides answers to the who, what, where, how and when of market research. Findings from this kind of research depict what is happening, however they do not explain why it is happening. Descriptive research is apposite when objectives of the research being undertaken include a description of the characteristics of marketing phenomena. Descriptive research provides a cross sectional study of the market giving the researcher a snapshot of the market place being investigated. The choice of a conclusive research design using descriptive research was befitting for the objectives of the research objective; which is to gain insight on the market's willingness to patronize hostels and apartments designed from shipping containers.

4.2 Research findings

The target population of the study was made up students , staff and faculty of Ashesi University College who currently live around the Ashesi University campus or would potentially want to live closer to campus. Students, staff and faculty are the intended occupants of the proposed development. Thus, they were included to understand the nature of their current housing arrangements, features of their current and preferred housing units, rental rates, familiarity with container housing and willingness to stay in a hostel or house designed from containers, amenities they would want and rates they would pay.

A questionnaire was sent as a link through WhatsApp and email to individuals and groups who fell within the above mentioned criteria. This link was further forward by several respondents to their personal networks. In addition to this, a stand was set up on the Ashesi University campus to encourage more participants in the research. There was a total of 125 valid responses to this questionnaire.

4.3 Data sources

Data for this study was assembled from primary and secondary sources. The literature review was needed to gain an insight into what market research entails and how it is carried out specifically to the real estate industry. The primary data were obtained directly from student, staff and through the administration of a questionnaire and from real estate professionals through structured interviews. The primary source of data provides this market research with findings from relevant stakeholders of the Ashesi community and professionals either knowledgeable about container housing or have experienced in developing such.

4.4 Data collection instruments

Guided interviews and a questionnaire were the main instruments used in gathering data to satisfy the research objectives. These collection instruments are typical of a descriptive research approach. The use of these instruments aid in confirming insights, provide a structured way of collecting information and data. With these instruments, data analysis is formal and recommendations are conclusive (Dibb, Simkin , Pride , & Ferrell, 2012).

4.5 Market Research Study

The intent of the market research study was to provide information on the current housing arrangements, factors that influence housing decisions, existing amenities being provided by competitive and comparable developments, assess opportunities and ascertain the potential success of the proposed development with students, staff and faculty of the Ashesi University. The market research report outlines trends in housing units for the Ashesi Community, trends in housing and hostel arrangements of students, staff and faculty, analysis of the depth of the market, perceived values of the market, opportunities and challenges of the current market profile, the target market, and comparative analysis of comparable and competitive developments.

4.5.1 Ashesi University College

Ashesi University College currently located in Berekuso has a population of 870 students, 34 full-time faculties, 39 faculty interns and 63 administrative staff. The university since its inception in 2002 has grown from a population of 31 students to 870 in 2018. According to Ashesi's second decade strategic plan for 2012 – 2022, the university plans to grow the student population over a 1,000 students (Ashesi University College, 2018). Also, the current plan seeks to improve the availability of on-campus housing to over 60% of the student body from it's current ratio of 42% (Ashesi Foundation, 2018).

Ashesi University College has three semesters in its academic calendar. The first semester begins from August to December, the second semester starts from January to May. The third semester which is shorter lasts for six weeks between the months of June and July. There are two periods of vacations: May to August and December to January during which the university campus is closed down as majority of staff and students retire to their personal homes and countries of nationality.

4.5.2 Trends in housing units for the Ashesi Community

According to Mammadov (2015), there are four widely-used student housing types: (1) dorms or residence halls, (2) student apartments, (3) private houses, and (4) community houses (Mammadov, 2015). Dormitory or residence halls in universities are noted for giving priority to freshmen or international students. The residence hall also promotes the social life of students. The author notes that residence halls tend to be typically more expensive than the other housing types listed (Mammadov, 2015).

Ashesi University College currently adopts the use of residence halls which have a 528 bed capacity. In 2018, the capacity of these residences is expected to increase to 624 beds.

For staff and faculty, Ashesi has two units of three-bedroom apartment and two units of a one-bedroom apartment. These apartments are occupied mainly by foreign and visiting faculty.

The activities of private developers have led to the establishment of 9 student apartments, another type of student housing within a 0.84 kilometre stretch. Student apartments allow for higher density of students compared to private housing. Private housing is found within the Berekuso community closer to the Ashesi community.

4.5.3 Trends in housing and hostel arrangements of members of the Ashesi Community

A survey was conducted to gain a bird's eye of the the housing arrangements of the various students, staff and faculty of the Ashesi Community. From Figure 2.1 below, out of 99 student respondents, 4 students lived in a single room, 40 students lived in a double room, 21 students lived in triple room and 34 lived in a quad room.

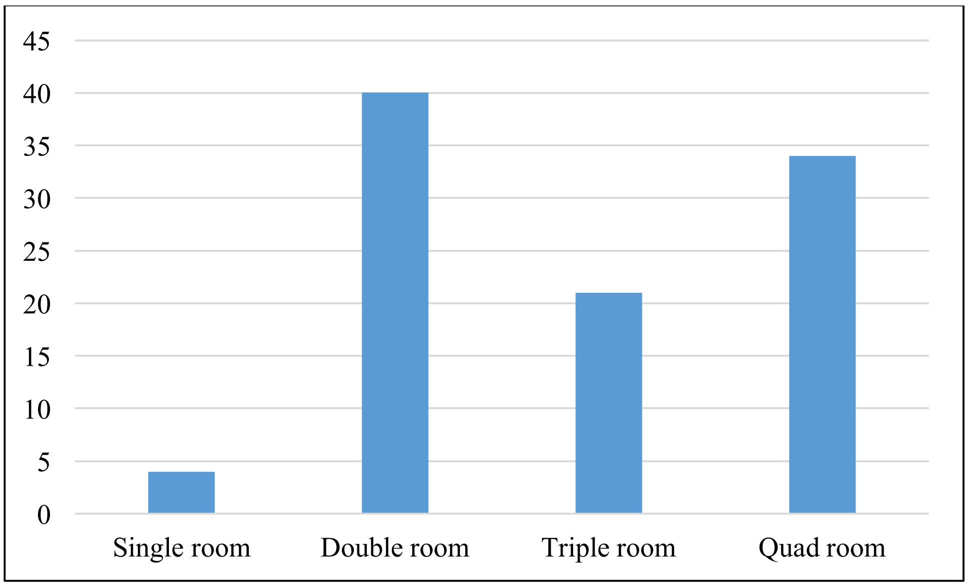

Figure 4.1 A bar graph showing the current hostel arrangements of 99 student respondents

A bar graph showing the current hostel arrangements of 99 student respondents

In like manner, the housing arrangements of 26 staff and faculty respondents were recorded. From Figure 2.2 below it can be seen that, 14 respondents were renting housing units, 7 respondents own their housing units and 5 respondents neither own nor rent. Staff and faculty who indicated that they neither own or rent could mean that they live with relative(s), live in an official residence or are sharing accommodation.

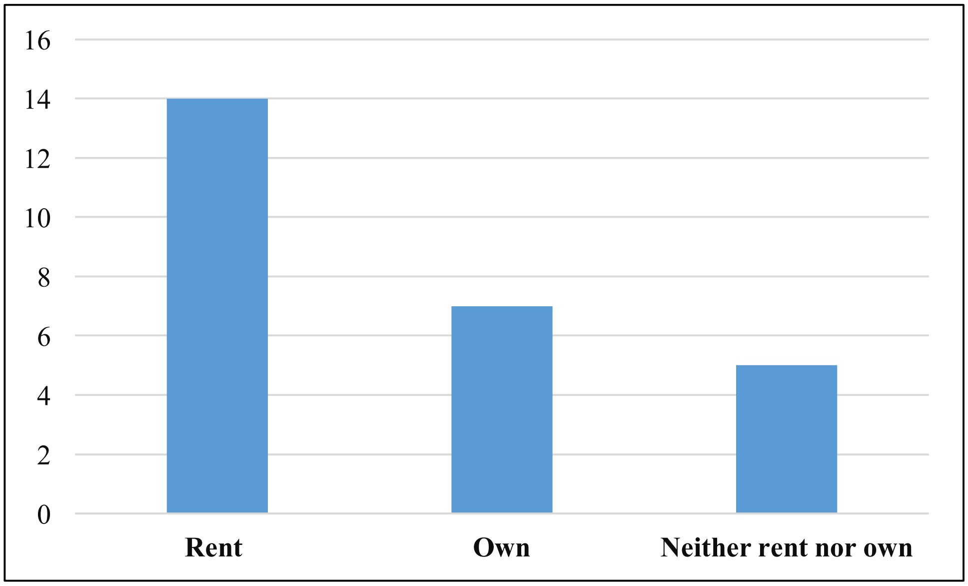

Figure 4.2 A bar graph showing the current housing arrangements of 26 staff and faculty respondents

4.5.4 Depth of market

The depth of the market is characterized by the size of the potential market and the percentage of the market that needs to be captured to reach set revenues. Developers need information on the penetration rate of the market, an analysis of demand and market share.

According to Ashesi's strategic plan, the number of students are expected to increase yearly. Real estate developers are thus highly likely to see an increase in the size of the market year in, year out. Increased partnerships and exchange partnerships with universities abroad will see students from abroad joining the Ashesi community and staying between three to twelve months. Thus Ashesi's aim to increase brain gain will also add to this market size. From this, it can be deduced that there will be continuous market for real estate developers so long as the project fits the location.

4.5.5 Market Perceived values

Customer-perceived value is defined as the customer's evaluation of the difference between all the benefits and all the costs of a marketing offer relative to those competing offers. According to Kotler and Armstrong, customers often do not judge values and costs "accurately" or "objectively". They act on perceived value. (Kotler & Armstrong, 2011). Some types of customer value are performance value, social, emotional, price, credit, financing, service, convenience and personalization value (Sheth & Mittal , 2004).In addition, internal factors are considered by potential users of a real estate development. (Misra, Dey, & Katiyar, 2013) . Internal factors are the features, specifications and facilities offered by builders (Misra, Dey, & Katiyar, 2013). The perception of the market was based on the internal factors students and staff considered when making a choice for accommodation.

From the questionnaire administered to 99 student respondents, it was seen that students were mainly influenced by price, proximity to Ashesi campus and availability of desired amenities in their housing decisions. Other factors that were mentioned included friendship ties, family ties, design of building, security, privacy, serenity, financial aid requirement and availability of space.

Table 1 below shows the influencing factors of 99 students in choosing hostel accommodation

Factors	**Number of Respondents**
Price	60
Proximity to Ashesi campus	66
Availability of desired amenities	63
Family ties	4
Friendship ties	24
Design of building	28

Table 2 below shows the influencing factors of 26 staff and faculty respondents in choosing housing accommodation

Factors	Number of Respondents
Price	25
Proximity to work place	21
Proximity to Central Business District	10
Availability of desired amenities	19
Family ties	3
Friendship ties	2
Design of buildings	15

In Table 2, it can be seen that from 26 staff and faculty responses, the main decision drivers were price, proximity to work place and the availability of desired amenities.

For the developer, this information gives an insight to the motivating factors of the target market as buyers. The proposed development should be designed to imbibe the values expressed by the target market and meet the desires of the buyer.

4.5.6 Opportunities and challenges of the current market profile

One of the most important things a developer should consider is the opportunities and challenges presented by every market profile. Miles et al (2007) suggest a SWOT analysis as a measure of prevailing opportunities and challenges. In addition, knowledge about the market perception and its willingness to patronize is imperative as misunderstanding of public perception can lead to failed projects. The study undertook to measure the knowledge of students, staff and faculty about container housing as well as their interest in staying in a

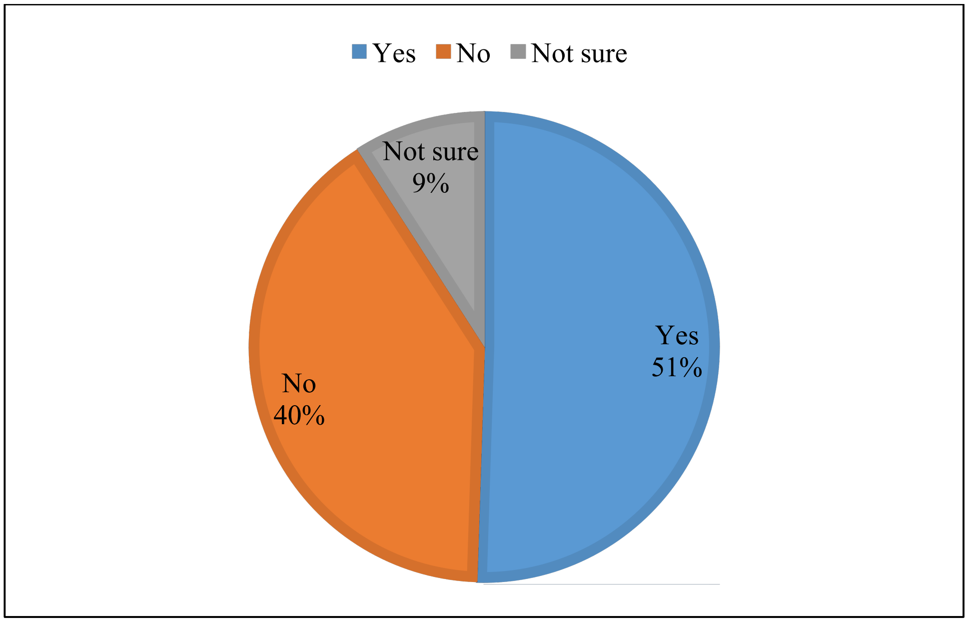

Figure 1 A pie chart showing the familiarity of container housing among 99 student respondents

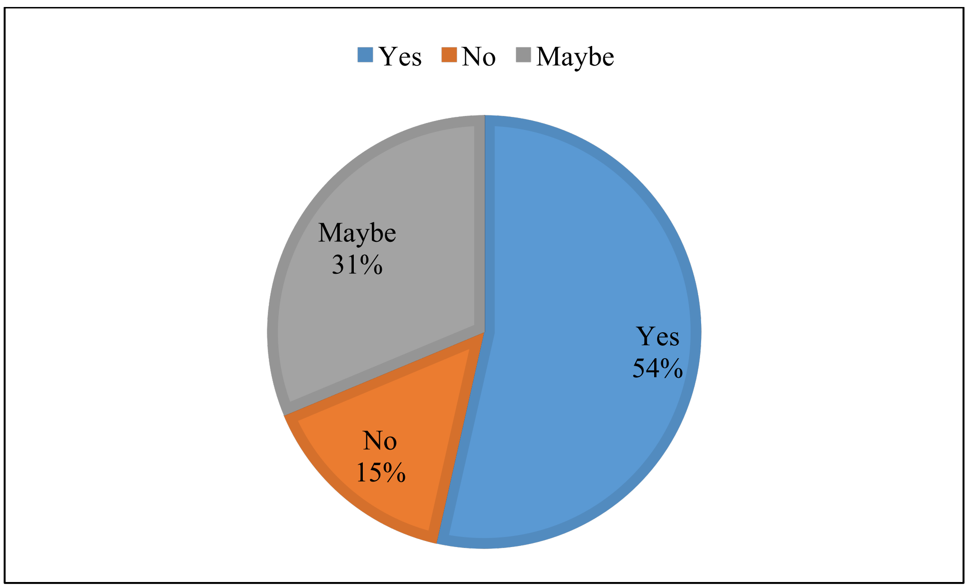

Figure 2 A pie chart showing the belief of 99 student respondents in the possibility of using shipping containers for housing

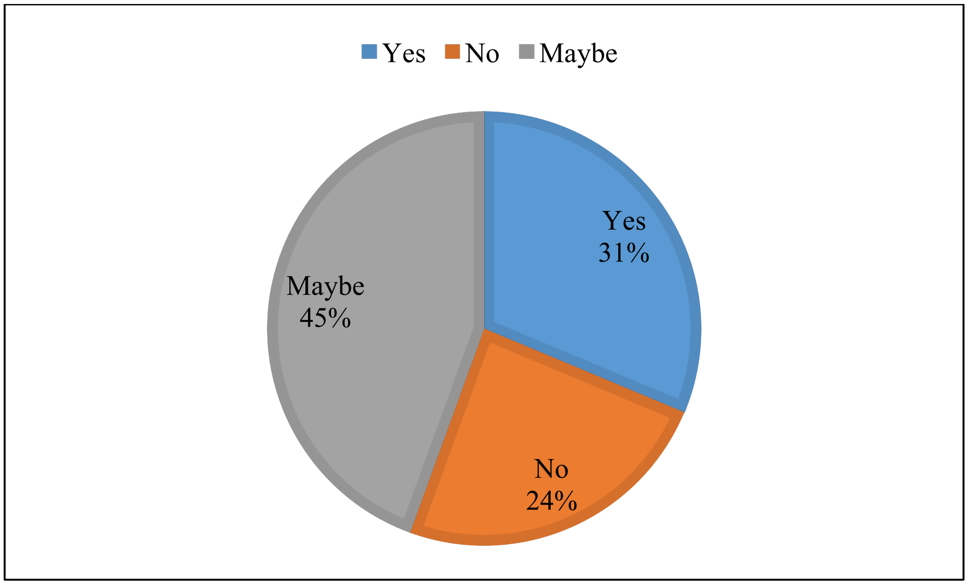

Figure 3 A pie chart showing the interest of 99 student respondents in staying in a hostel designed and constructed from shipping containers

According to the questionnaire administered, 41 out of 99 students indicated that they were familiar with container housing. 53 out these 99 students demonstrated their belief in the conversion of shipping containers to housing units. 31 out of 99 students, representing 31% of the respondents expressed their interest in staying in a hostel constructed from shipping containers.

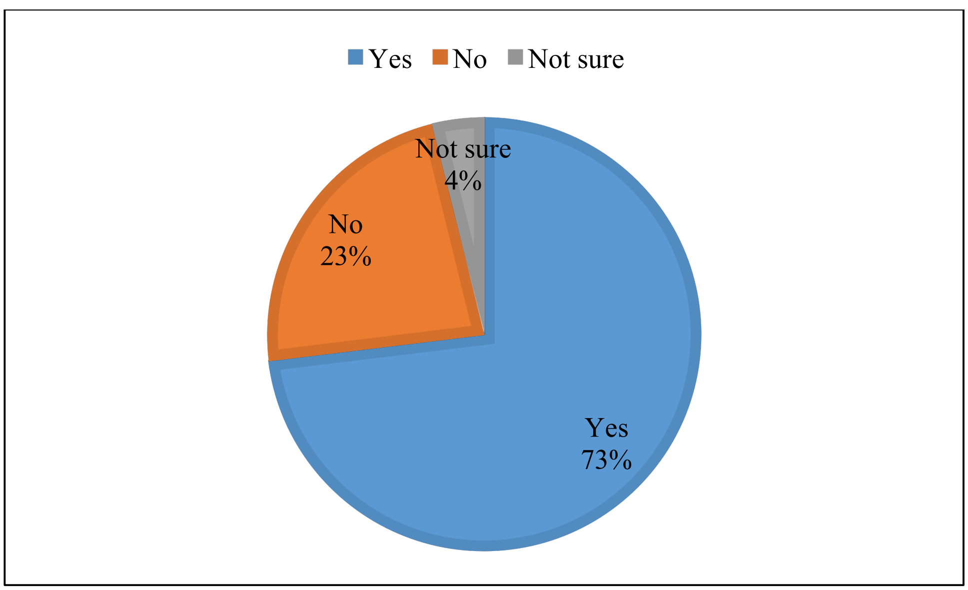

Figure 4 A pie chart showing the familiarity of container housing among 26 staff and faculty respondents

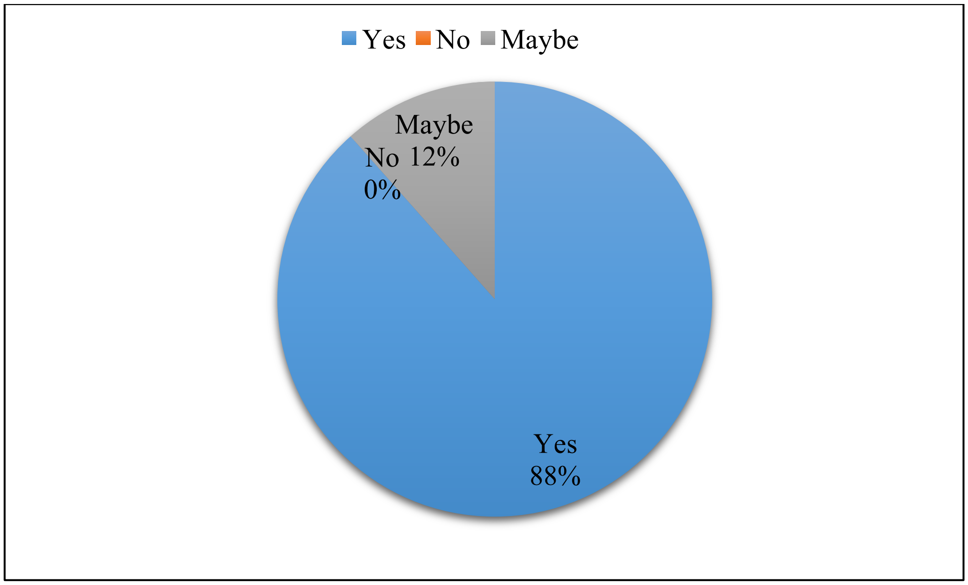

Figure 5 A pie chart showing the belief of 26 staff and faculty respondents in the possibility of using shipping containers for housing

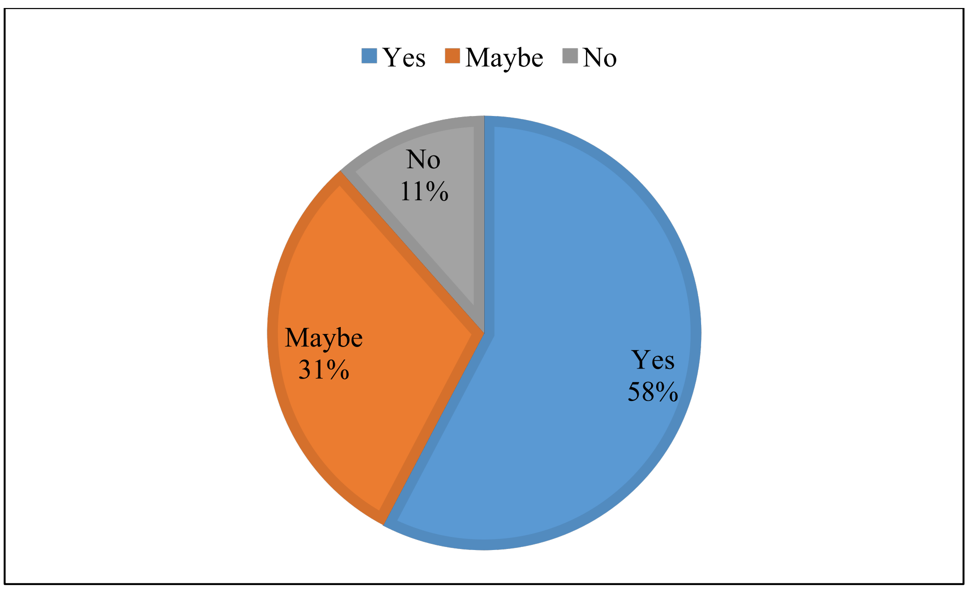

Figure 6 A pie chart showing the interest of 26 staff and faculty respondents in staying in an apartment constructed and designed from shipping containers

26 responses from staff and faculty showed that 19 respondents were familiar with the concept of container housing. 23 staff and faculty respondents disclosed their knowledge of the conversion of shipping containers to housing units. 15 out of 26 staff and faculty respondents expressed their interest in staying in an apartment constructed from shipping containers.

It can be deduced that familiarity and knowledge of container housing influences the interest of respondents to live in a container development. From this, the client in their development can offer housing options tailored towards students, staff and faculty rather than focus wholly on one of these groupings.

4.5.7 Target Market

The purpose of the market research study is to determine the variety of offerings by a developer and the desired amenities of potential users of the development. Moreover, a more precise target market determination has a bulls- eye effect on product positioning.

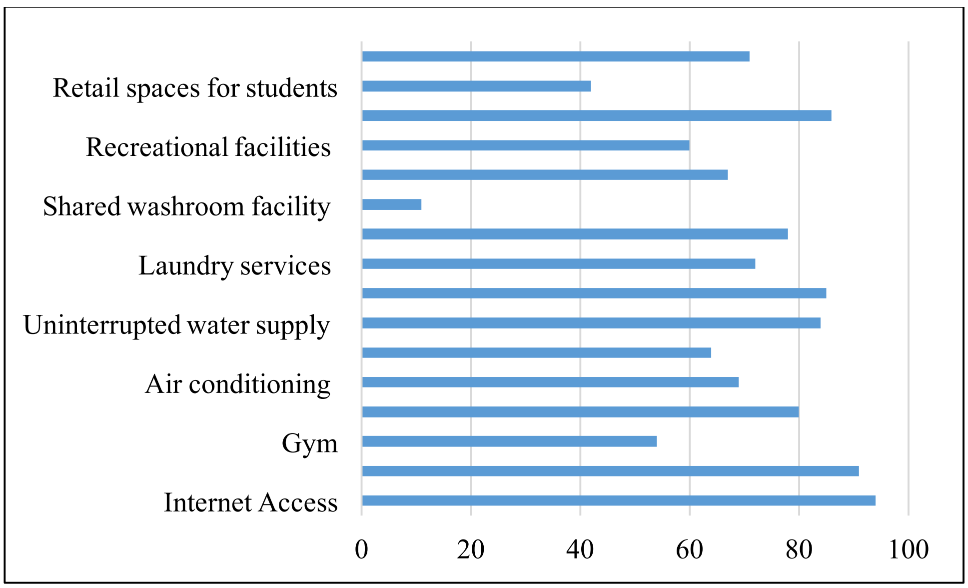

Figure 7 A bar graph showing the desired hostel features of 99 student responses

From the findings, the desired amenities included retail spaces for students, kitchen, recreational facilities, convenience shop, shared washroom facility, washroom en-suite, laundry services, cleaning services, uninterrupted water supply, car parking space, air conditioning, security, gym, back-up power supply and internet access. 14 out of these 16 desired amenities had over fifty students wanting to have them in a proposed hostel.

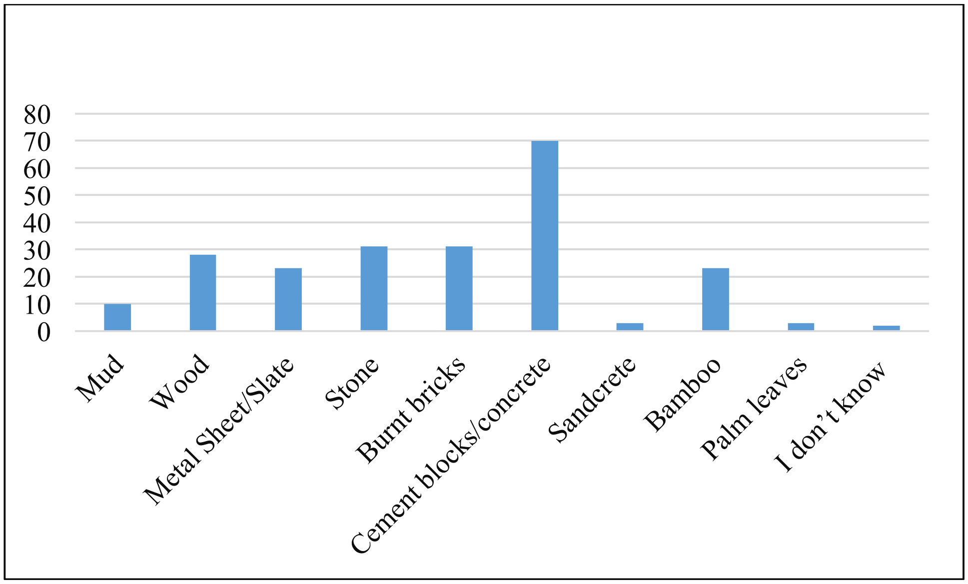

Figure 8 A bar graph showing the preferred housing materials of 99 student responses

The results show that 70 out of 99 student respondents would like to live in a development made from cement blocks/concrete. This building material is highly used across Ghana and could be the reason for majority choosing it due to familiarity and exposure.

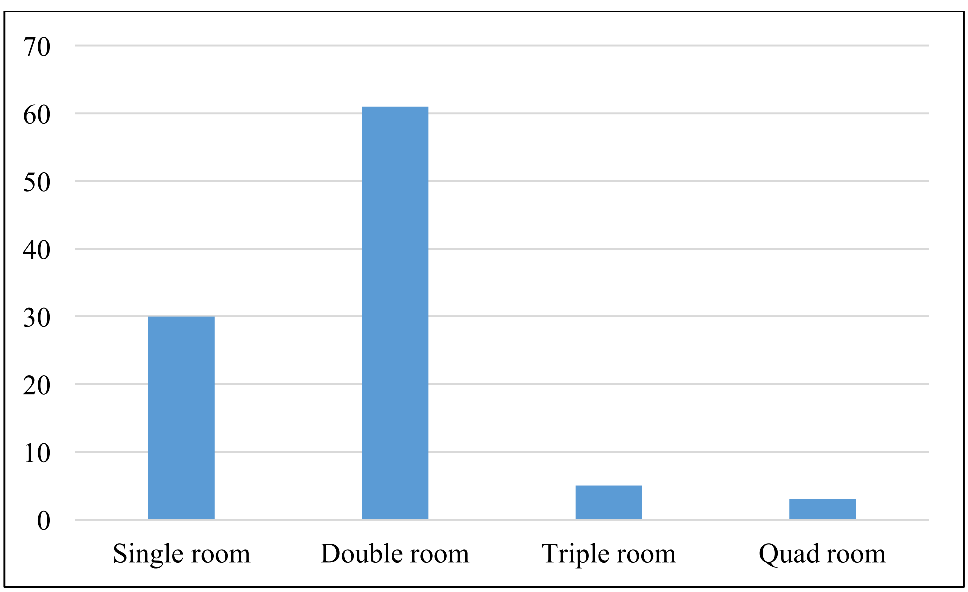

Figure 9 A bar graph showing the preferred housing arrangements of 99 student responses

From 99 student respondents, 61 students out of 99 students preferred to have double rooms. 30 students showed their preference for single rooms. The number of students who preferred triple and quad rooms substantially reduced. 55 students in total earlier indicated that they lived in triple and quad rooms. In contrast, a total of 8 students only indicated their interests in having triple and quad rooms in a new development. It can be inferred that the developer should focus on providing more single and double rooms compared to triple and quad rooms.

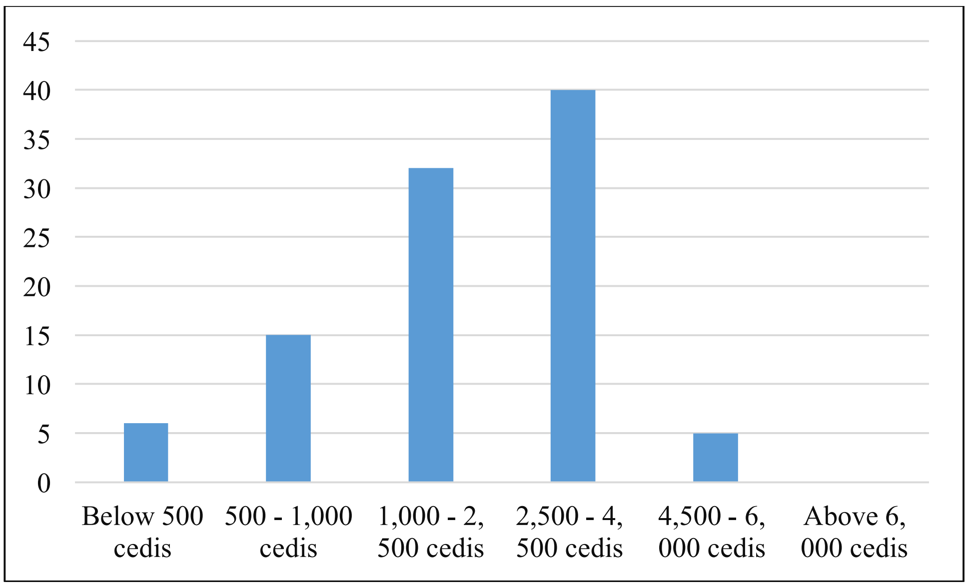

Figure 10 A bar graph showing the fees students are willing to pay for the selected housing arrangements in a hostel designed and constructed from containers

Table 3 This is what students will be willing to pay for a container room

Type of Room	Below 500 cedis	500 - 1,000 cedis	1,000 - 2,500 cedis	2,500 – 4,500 cedis	4,500 – 6,000 cedis
Single room	3	6	8	10	3
Double room	3	9	20	27	2
Triple room	2			3	
Quad room		3			

From the table above, it can be seen that majority of respondents who preferred single rooms were willing to pay between 2,500 – 4, 500 cedis a semester. 27 students out of 61 students who preferred double rooms were willing to pay between 2,500 – 4,500 cedis a semester.

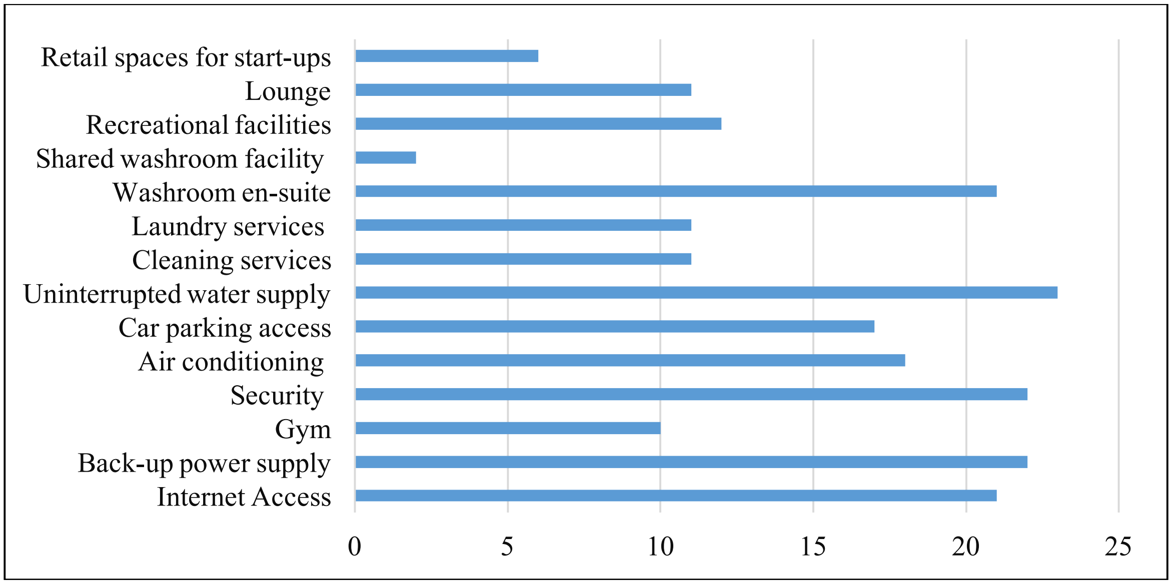

Figure 11 A bar graph showing the desired housing features of 26 staff and faculty responses

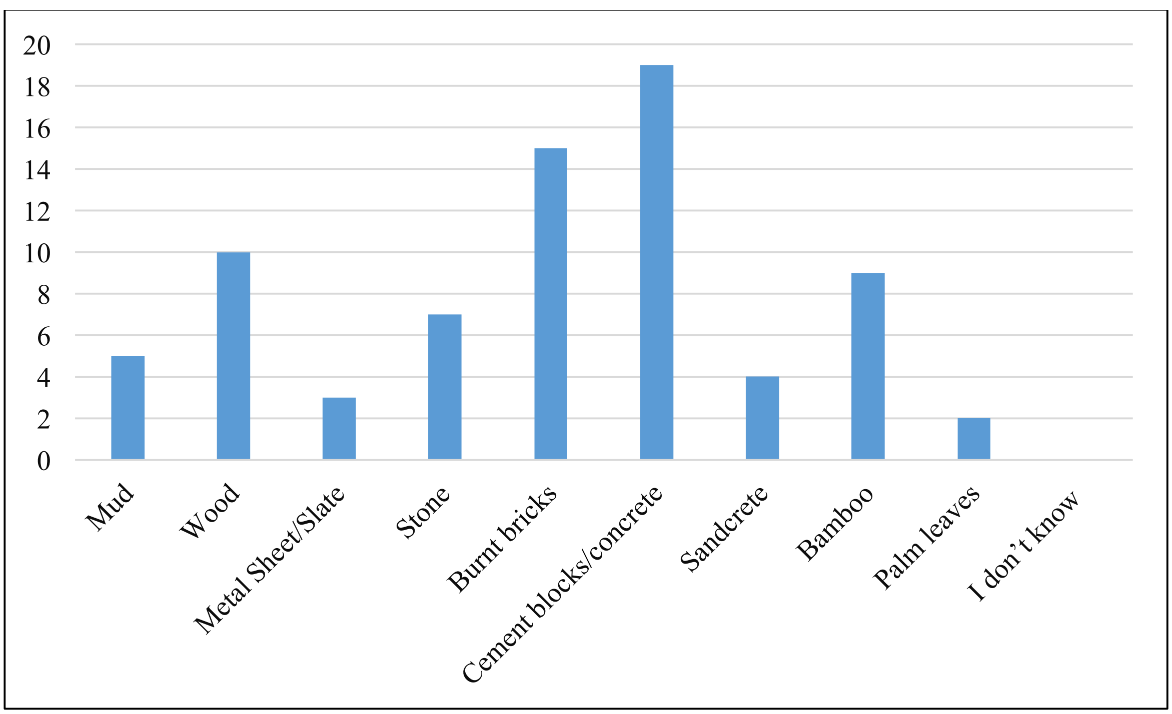

Figure 12 A bar graph showing the preferred housing materials of 26 staff and faculty

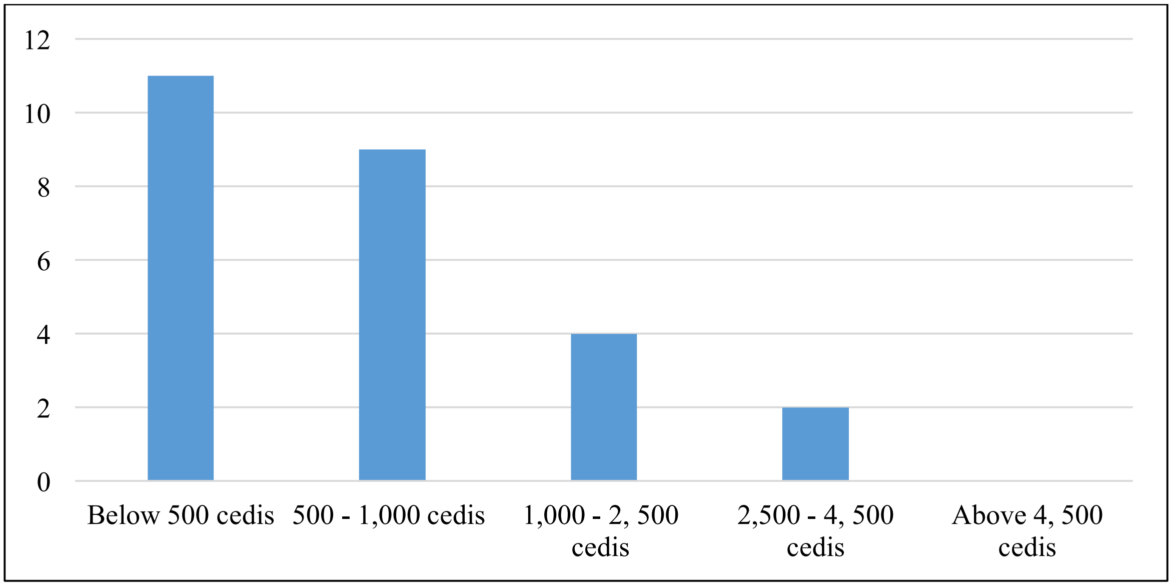

Figure 13 A bar graph showing the fees staff and faculty are willing to pay for an apartment designed and constructed from containers

4.5.8 Market positions, development programs, price points, absorption and lessons learned from competitive developments.

The market position of an offering is the sum of attributes ascribed to it by consumers– its standing, its quality, the type of people who use it, its strengths, its weaknesses and any other memorable characteristics it may possess, its price and the value it represents (Dibb, Simkin , Pride , & Ferrell, 2012).

A competitive development Competition within the industry usually refers to that the real estate rivals provide the same or similar properties to the consumer in the same area. Avenues of competition include the price war, the advertising war, the property management, product improvement and increased services (REN & ZHANG, 2006). Why consider competitive development?

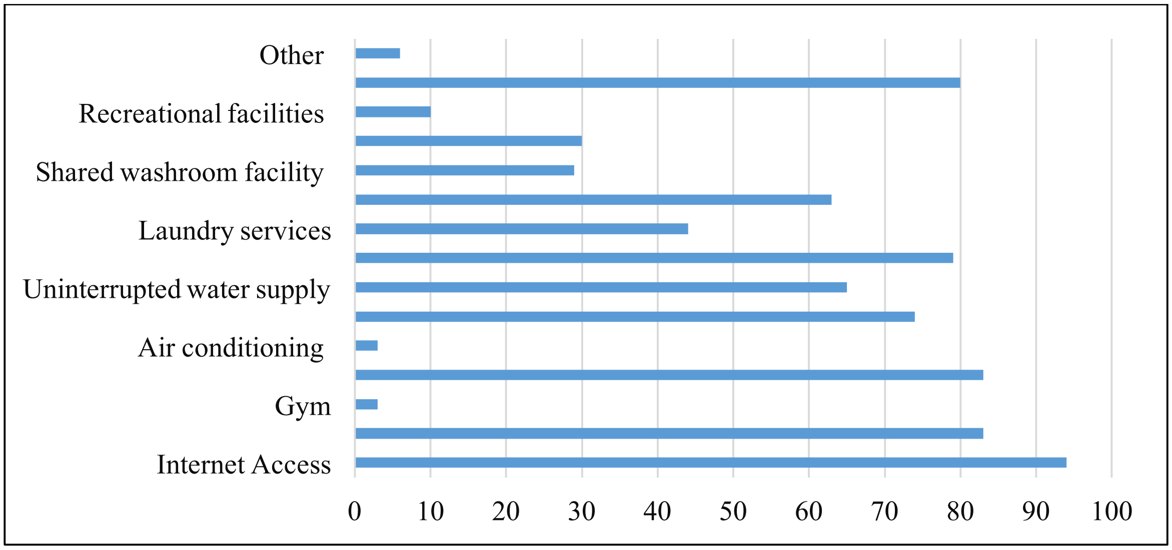

Figure 14 A bar graph showing the current hostel features of 99 student responses

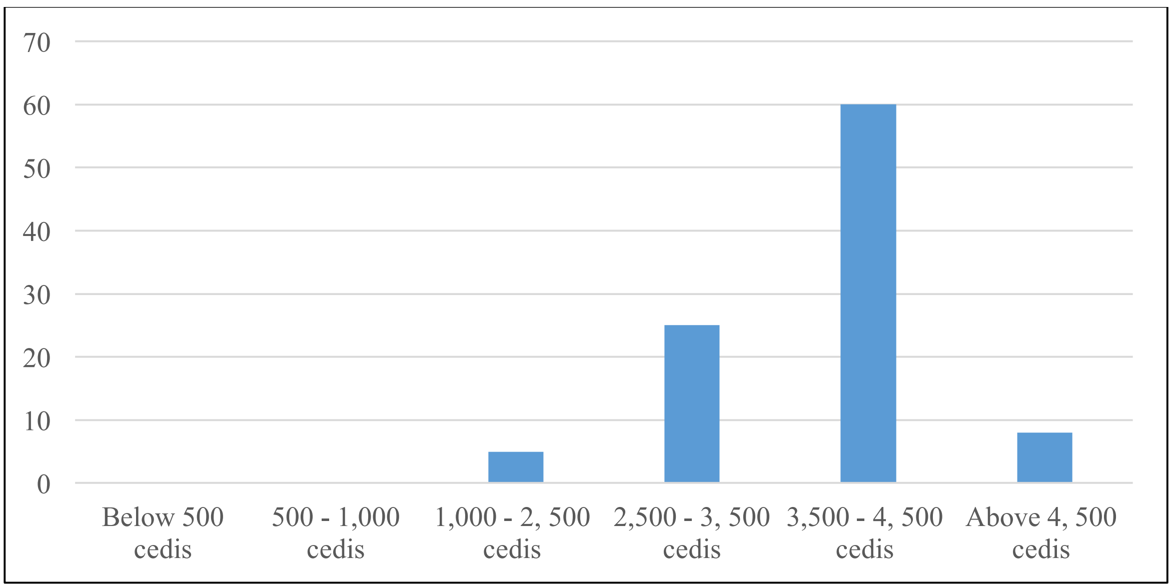

Figure 15 A bar graph showing what students currently pay for their hostels

Similarly, in a research conducted in 2016 by the Ashesi off-campus committee, six hostels were rated based on utilities which included internet, kitchen, water heating system, security, convenience store, cleaning services, study area, lounge area, in room baths and in room fridges. The average price of rooms of these six selected hostels range from 2,500 cedis to 4,000 cedis.

From this research, it was seen that convenience stores were unavailable in two out of these hostels. The service of convenience stores in the four hostels were rated poorly. Also, study areas in these six hostels received poor ratings as well as the level of security presence.

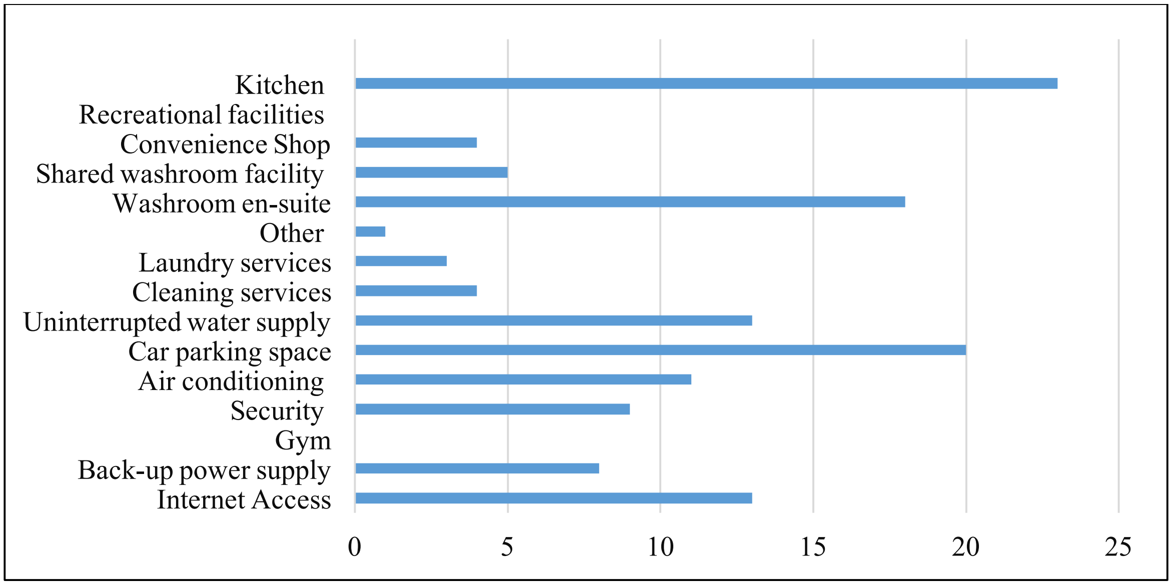

Figure 16 A bar graph showing the current housing features of 26 staff and faculty respondents

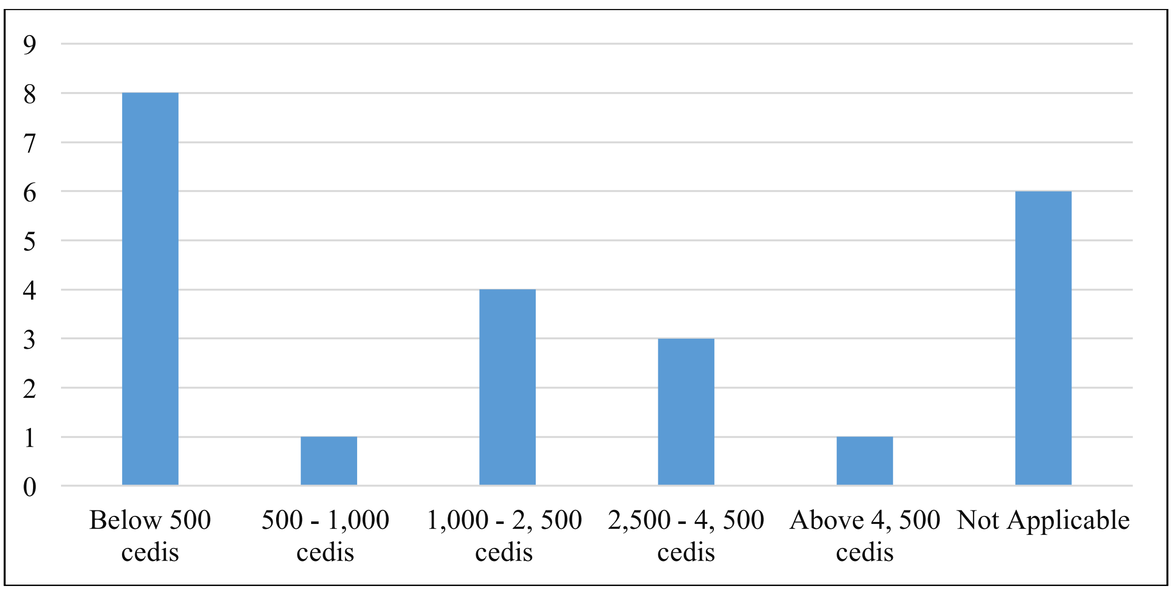

Figure 17 A bar graph showing the amount staff and faculty are currently paying for their accommodation

It can be deduced that for a developer considering constructing housing accommodation developments. References to existing features in the various competing developments is to aid the client in understanding buyers' expectations.

4.5.9 Comparable developments

Comparable projects are those that have similar traits to a developers proposed project but cannot be classified as competitive projects. It is essential to get a measure of the amenities, price points and product position of comparable developments. For comparable developments, this study focuses on clusters of rooms for rent in the Berekuso, the closest community to the Ashesi University campus.

From observational visits to three different rooms for rent in the Berekuso community, it was seen that amenities provided were very basic. Two of these rooms had shared washroom and kitchen facilities. Security, internet access and constant power supply were not provided for these rooms. The rooms available for rent are usually unfurnished. Furnishing is left to the tenants of these rooms. From informal interviews with owners of these rooms for rent, it was revealed that security was not offered as they believe that the Berekuso community is safe and these rooms are not isolated from the inhabitants of the community. These comparable developments are not within a kilometre of Ashesi University which make it less appealing to students as an ideal choice for accommodation.

4.6 Opportunities and challenges presented by competitive and comparable projects

Knowledge of competitive and comparable projects should inform a developer about the successes and failures of these developments, what to mimic, what to avoid and measures to mitigate challenges that cannot be done with. Additionally, it gives the developer ideas as to what to do differently. Comparing results , it can be seen that students, staff and faculty desire some amenities that are not being provided in current housing arrangements. These include recreational facilities, lounges, cleaning services, uninterrupted water supply, back up power, air conditioning and security. For the client, this will mean that the proposed project should have features already being offered by competitive and comparable developments including additional features that the target market either desires and does not have or ones that can be introduced to them.

Furthermore, looking at Figures 9 and 4, it is realised that there is a higher demand for double rooms and single rooms. There was a sharp decrease in demand for triple and quad rooms. Results show the current rates being paid by students, staff and faculty for their housing arrangements and what they will like to pay for a room or an apartment designed from shipping containers. It showed that majority of the staff and faculty respondents would prefer to stick to paying their current housing rates which below 500 cedis for this proposed development. Correspondingly, majority of student responses indicated their willingness to pay between 2,500 – 4, 000 cedis a semester. Majority of student respondents are currently paying between 2,500 – 4, 000 cedis.

The client can decide to provide more rooms to meet the demands of students, and have basic room options within the budgets of staff and faculty and decide to surcharge periodically for the use of additional features or amenities. Retail spaces can be incorporated into the design of the container development to be rented or leased out to tenants of this development or non-tenants of this development who are staff, faculty or students.

4.7 Conclusion

4.7.1 The target market

The target market aids in the conclusion of who the buyers are, what their characteristics and wants are. The target market for the proposed development are students, staff and faculty of the Ashesi Community. Results from the questionnaire sent out showed and quad rooms. Staff and faculty were either owned or rented their housing units. There were some staff and faculty who neither owned nor rented their current housing units.

Findings showed that 40 out of 99 student respondents were living in a double room. Majority of staff and faculty are renting their current accommodation. Motivating factors that influenced housing decisions included price, proximity to Ashesi campus, availability of desired amenities, family ties, friendship ties, design of building among others. The dominant factors from the study were price, proximity to Ashesi campus and availability of desired amenities.

4.7.2 Market positioning and differentiation

Market positioning answers the question of where the product should fit in the potential buyer's minds relative to other choices on the market (Miles , Berens, Eppli, & Weiss, 2007). The market position for this housing accommodation is to place itself as a mixed – use development. This is due to indicators of preferred features such as retail spaces, laundry services, recreational facilities and a lounge. It should also more single and double room option at a cheaper price as compared to existing developments.

It is important that the developer provides the common features provided by competitive and comparable developments and other features to emphasize their differentiation. The developer can employ sustainable energy sources such as solar energy, the use of rain water mechanisms and the like to uniquely present itself as an eco-friendly development and do well to convey an unparalleled value proposition to potential customers.

4.7.3 Price point

The price point deals with the ideal way of capturing value and how much the pricing should be captured. The developers aim to provide affordable housing compared to their competitors. Hence, from Table 3, it would be ideal to charge between 2,500 – 4,500 cedis for a single room.

For double rooms, it would be advisable to charge between 1,000 – 2, 500 cedis. For triple and quad rooms, the developer can choose to charge between 500 – 1,000 cedis. The developer can provide additional services that could be patronized or not as this will allow the potential buyer to have some level of customization in choosing their room options.

4.8 Who Should Use this Market Research, When Should It Be Used

CHAPTER 5: CONCLUSION

The goal of this project was to provide insights about a target market to a client to help them refine their idea and provide an overview of expectations. The has been achieved by providing the market with the necessary information to make a decision about providing container housing for the Ashesi Community. Limitations of this research include time. The period set out for completion within 12 weeks. This time constraint may have introduced some elements of bias or omission based on the data that was available. With regards to Ghana, there was limited information on the use of shipping containers for construction in Ghana or its suitability to the Ghanaian environment. Further research is recommended to determine occupancy rates, absorption rates and to create a development program that will ensure demand for the development while maintaining financial feasibility. In addition to this, a pilot test can be conducted with the use of miniature models of proposed designs of this development to gain better insights and also increase awareness of the use of shipping containers for housing.

Further research into development costs, life cycle costs, project financing cycle and capital structure are critical to the analysis and the final decision of the real estate developer.

References

Appiah-Adjei, S. (2017, November 11). *Ghana Standards Authority develops Nationa l Building Code*. Retrieved April 13, 2018, from Graphic Online: https://www.graphic.com.gh/news/general-news/ghana-standards-authority-develops-national-building-code.html

Arku, G. (2009). Housing Policy Changes in Ghana in the 1990s. *Housing Studies , 24* (2), 261-272.

Aryeetey, G. (2015). *Globalisation Of The Local: The Case Of The Housing Industry In Ghana.* University of Ghana. Accra: University of Ghana.

Ashesi Foundation. (2018, January 1). *2016 campus growth at Ashesi*. Retrieved April 14, 2018, from Ashesi Foundation: http://www.ashesi.org/blog/2016-campus-growth-at-ashesi/

Ashesi University College . (2018, January 1). *About Ashesi University College*. Retrieved April 14, 2018, from Ashesi University College: http://www.ashesi.edu.gh/about/ashesi-at-a-glance/quick-facts.html

Ashesi University College. (2018, 1 1). *Strategic Plan* . Retrieved April 14, 2018, from Ashesi University College: http://www.ashesi.edu.gh/about/ashesi-s-leadership/ashesi-s-president/strategic-plan.html

Bank Of Ghana . (2007). *The Housing Market In Ghana* . Research Department . Accra: Bank of Ghana.

Barbazette , J. (2004). What is Needs Assessment? In J. Barbazette, *Training Needs Assessment* (pp. 247-249). San Francisco: Pfeiffer.

Boamah , N. A. (2014). *Housing Policy in Ghana: The Feasible Paths* . University for Development Studies , Department of Real Estate and Land Management . Wa: University for Development Studies .

buyrentkenya.com. (2017, September 29). *How Political Risks Affect The Real Estate Market* . Retrieved April 11, 2018, from buyrentkenya.com: https://www.buyrentkenya.com/news/political-risk-real-estate-market/

Certified International Property Specialist . (2017). *Global Perspectives to Local, International & LifeStyle Real Estate.* National Association of Realtors . Washington, D.C.: National Association of Realtors .

Day , R. l. (1967). New Products and market research . *Management Decision , 1* (3), 21-24.

Deloitte. (2017). *Putting Ghana back to work : Ghana 2018 budget commentary and tax highlights* . Accra: Deloitte & Touche .

Dibb, S., Simkin , L., Pride , W. M., & Ferrell, O. (2012). *Marketing Concepts & Strategies*

Ghana Investment Promotion Centre. (2018, n.d. n.d.). *Political Stability* . Retrieved February 6, 2018, from Ghana Investment Promotion Centre: http://www.gipcghana.com/invest-in-ghana/why-ghana/political-stability.html

Ghana Statistical Service. (2014). *2010 Population & Housing Census : Housing in Ghana* Ghana Statistical Service. Accra: Ghana Statistical Service.

Giles , W., & Piercy, N. (1989). Making SWOT analysis work . *Marketing Intelligence & Planning , 7* (5/6), 5-7.

ISBU Association. (2006-20016). *ISO Containers*. Retrieved April 18, 2018, from ISBU Association : http://www.isbu-association.org/all-about-shipping-containers.htm

Kürthy, P. (1967). Market Research - Marketing . *Soviet and Eastern Europe Foreign Trade , 3* (4), 48-67.

Kavaarpuo, G., & Sarfoh, O. K. (2016). *Affordable Housing in Ghana - A Market Brief.* Federal Ministry for Economic Cooperation and Development (BMZ). Bonn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH Inclusive Business Action Network.

Kotler , P., & Armstrong, G. (2011). *Principles of Marketing* (14th Edition ed.). New York: Prentice Hall.

Mammadov, T. (2015). *Feasibility study of an alternative approach to recycle shipping containers.* Illinois State University . IIlinois State University .

Mar Iman, A. H. (2007). *Basic Aspects of Property Market Research.* Kuala Lumpur: Penerbit UTM.

Miles , M. E., Berens, G. L., Eppli, M. J., & Weiss, M. A. (2007). *Real Estate Development : Principles and Process* (Fourth Edition ed.). Washington D.C.: Urban Land Institute.

Miles, M. E., Netherton, L. M., & Schmitz, A. (2015). *Real Estate Development : Principles and Processes.* Washington: Urban Land Institute .

Ministry of Finance. (2017, March 2). The 2017 Budget Statement and Economic Policy of Governmnet . Accra, Ghana.

Ministry of Water Resources,Works and Housing . (2015). *National Housing Policy* . Accra: Ministry of Water Resources,Works and Housing.

Ministry of Water Resources,Works and Housing . (2015, March 14). National Housing Policy. Accra.

Misra, M., Dey, A. K., & Katiyar, G. (2013). Consumer perception and buyer behaviour for purhcase of residential apartments in NCR. *International Journal of Indian Culture and Business Management , 6* (1), 56-68.

National Communications Authority . (2017). *Determining the Contribution of the ICT/Telecommunication Sector to GDP in Ghana.* National Communications Authority . Accra: National Communications Authority .

Novak , L. R. (1996). *Market and Feasibility Studies : A How-To-Guide.* Portland : University of Oregon.

Ntrakwah&Co. (2016, n.d. n.d.). *Real Estate : Ghanaian Real Estate Law*. Retrieved February 6, 2018, from Ntrakwah&Co: https://ntrakwahandco.com/practice-areas/real-estate-law/

Ofosu-Appiah, B. (2017, March 27). *The role of Think Tanks in a democracy*. Retrieved February 7, 2018, from GhanaWeb: https://www.ghanaweb.com/GhanaHomePage/NewsArchive/The-role-of-Think-Tanks-in-a-democracy-522262

Oxford Business Group. (2016). *Ghana's government looks for an alternative housing solution.* Oxford Business Group. Accra: Oxford Business Group.

REN, X. T., & ZHANG, Q. G. (2006). *Analysis of the Competition Environment for Real Estates.* North China Electric Power University , School of Business Administration. Beijing : International Symposium on Advancement of Construction Management and Real Estate.

Sarfoh, K. O., Kavaarpuo, G., & Ayitio, J. (2016). *Affordable Housing in Ghana : Sector Study* . Federal Ministry for Economic Cooperation and Development (BMZ). Bonn: Inclusive Business Action Network.

Sheth, J. N., & Mittal , B. (2004). *Customer Behavior : A Managerial Perspective* (2^{nd} Edition ed.). Washington, D.C.: South-Western College Publishing.

U.S. Department of Education:Office of Migrant Education . (2001). Comprehensive Needs Assessment . *Materials adapted from "Planning and Conducting Needs Assessments : A Practical Guide (1995)* . Washington .

Valentin, E. K. (2001). Swot Analysis from a Resource-Based View. *Journal of Marketing Theory and Practice , 9* (2), 54-69.

Wilson, A. (2006). *Marketing Research : An integrated approach* . Edinburgh: Pearson Education Limited.

Interview Guide: Building technologist

- Can you describe the real estate development process?

- Can you describe the process of constructing a container house?
- What about a container house design and construction makes it suitable for a development?
- How was it like designing and constructing your first container house?
- What do you have to be careful about, when designing and constructing container homes?
- What were the sentiments of your first client when you proposed container development?
- What was the reaction of your first client after the completion of your work?
- Subsequently, what has been the reaction of your clients?
- Do you live or work from a container house?
- If yes, what is it like living in a container house compared with traditional sandcrete homes?
- How does container housing compare to regular cement based housing where the cost, construction process and the availability of technology and workmen, are concerned?
- How do you think container housing will fare at a location like Berekuso?
- How can one make sure a container house in an area like Berekuso is properly developed?
- To what extent can one finish a container development?
- What insulating materials would you recommend for container housing?
- How can it be best maintained?
- What advice would you give to a developer considering container housing development?
- How does one determine circulation & letable space in a container development?

Interview Guide: Architect

- How has housing in the Ghanaian market evolved over the years in relation to building materials/technologies, innovative offerings and user needs?
- What have been some of the most common technologies you have encountered in your line of work?
- What are your impressions about container developments?
- Do you think container houses are suitable for the Ghanaian environment?
- Considering variation in topography, how will construction of a container house differ between Accra and Berekuso?
- How different will constructing a container house in Berekuso be from constructing traditional buildings?
- How can one make sure a container house in an area like Berekuso is properly developed?
- To what extent can one finish a container development? (wall, ceiling, floor)
- What insulating materials would you recommend for container housing?
- How can it be best maintained?
- What advice would you give to a developer considering container housing development?

Interview Guide: Individual with container development

- Describe the construction process
- Is container development the only type of development you have lived or worked in?
- Why did you opt to use containers for this particular development?
- How long have you had it?
- Do people notice that your development is made from containers?

- If no, what is their reaction when they realize it is made from containers?
- What has been the user experience in the container space?
- What perceptions (good or bad) have been registered about your space due to the fact that it is made of containers?
- What have been the benefits of your container development?
- What have been the downsides of your container development?
- How much did it cost you to construct?
- Who constructed it for you?
- Were you involved in its construction and design process?
- What were your specifications during the design and construction phase? Have they been met?
- What goes into maintaining this development?
- Would you use containers for future developments?
- Is there is anything you would factor / do differently if you were to construct another such development?

Interview Guide: Client

- What is your motivation for embarking on this development project?
- What will you want to achieve with this development?
- Is this your first development?
- If no, what are some of your previous developments?
- What are your impressions about the affordable housing sector in Ghana?
- What building technologies have you utilized in the past/ seen other people embarking on a similar development like yours use?

- What is your motivation for using containers as the building units for this development?
- Have you lived or worked from a container house?
- How many units are you looking to develop?
- How much are you looking to invest in this project?
- How is this project going to be financed?
- Are you looking to sell such developments or rent out?
- Who owns the land/ what are the implications of this on the development?
- Is this a temporary use of the land or permanent?
- Who are you looking at renting/ selling this development to (think demographics)
- What are some of the value systems you have with respect to real estate development (e.g. value/cost driven, environmental concerns, etc.)
- How will you want the property to be managed once it is completed?
- At the end of this research, what will you want to know about this development? What deliverable will you want?
- Do you have a development team? What kind of professionals does the team consist of? / If not, what kind of professionals do you have in mind?