



ASHESI UNIVERSITY

A Business Feasibility Study for Equilibrium Partners: Accessing Market Entry into Selected
Tertiary Institutions in Accra for the Development of a 500-600 Student Rental Housing Unit

By

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of Bachelor of Science Degree in Business Administration.

Supervised by **Ms. Jewel N. Thompson**

April 2021

DECLARATION

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

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

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ABSTRACT

Given the inverse relationship between Ghanaian annual tertiary admission rates and current tertiary student rental housing, Equilibrium Partners Limited, a leading real estate developer, is looking to develop a 500 – 600 tertiary student rental housing unit for seven selected universities in the Greater Accra Region, namely, Ghana Institute of Management & Public Administration, University of Ghana – Legon, University of Professional Studies, Radford, Lancaster, Knustford and Webster University. With the stated market opportunity, the problem, however, is readily available data on the tertiary student rental housing market, integral in assisting Equilibrium Partners Limited assess the demand and profitability of the tertiary student rental housing market. Thus, the research aims to conduct a business feasibility study on selected tertiary institutions to provide Equilibrium with data-driven market & financial intelligence, which will assist the firm in making an informed decision on market entry.

The research scope focused on metrics like the available student housing within selected universities, size of the unmet demand from students, current market price point and the financial feasibility of Equilibrium's prospective development. In conducting the study, students & university officials (in charge of housing) of the selected institutions and private-owned hostel managers were representative of data sources. With a 500-sample size, the research methodology utilized was mixed methods. Given the qualitative and quantitative construct of the study, the mixed method approach allowed for tools like questionnaires and interviews to extract discrete and descriptive data from identified data sources to gain perspectives on the tertiary student rental housing market.

Key insights indicated that while demand was high, given the market's low willingness to pay, it was financially unfeasible for Equilibrium to make market entry.

LISTS OF FIGURES

FIGURE 1: SELECTED INSTITUTIONS GROUPED INTO GEOGRAPHIC ZONES	8
FIGURE 2 – SAMPLE OF QUALITATIVE EVIDENCE JUSTIFYING STUDENT RATIONALE ON 5-STAR RATING ON HAVING A HOUSING FACILITY ON OR NEAR CAMPUS.	24
FIGURE 3: REAL ESTATE DEVELOPMENT EIGHT STAGE MODEL	32
FIGURE 4: THE FOUR BASIC MARKET RESEARCH & FINANCIAL PROJECTION ANALYSIS IN THE EIGHT STAGE MODEL OF REAL ESTATE DEVELOPMENT	35
FIGURE 5: CONCEPTUAL FRAMEWORK.....	42
FIGURE 6– AVAILABILITY & QUALITY OF AMENITY AND SERVICES GAP AMONG THE SEVEN TERTIARY INSTITUTIONS BEING INVESTIGATED.	44
FIGURE 7 – PROPOSED RATIONALE FOR 26% PERCENTAGE DISTRIBUTION OF STUDENTS WHO COMMUTE FROM HOME.	73

LIST OF TABLES

TABLE 1: SELECTED TERTIARY INSTITUTIONS GROUPED INTO GEOGRAPHIC ZONES. 7

TABLE 2: A TABLE INDICATING DECISION METRICS OF THE THREE CAPITAL SPLIT SCENARIOS ... 62

LIST OF ABBREVIATIONS

EBT – EARNINGS BEFORE TAX

EM – EQUITY MULTIPLE

EGI – EFFECTIVE GROSS INCOME

EPL – EQUILIBRIUM PARTNERS LIMITED

GIMPA – GHANA INSTITUTE OF MANAGEMENT AND PUBLIC ADMINISTRATION

GZ1 – GEOGRAPHIC ZONE 1

GZ2 – GEOGRAPHIC ZONE 2

GZ3 – GEOGRAPHIC ZONE 3

IRR – INTERNAL RATE OF RETURN

NOI – NET OPERATING INCOME

PGR – POTENTIAL GROSS REVENUE

ROE – RETRUN ON EQUITY

UNIVERSITY OF GHANA - LEGON

UPSA – UNIVERSITY OF PROFESSIONAL STUDIES ACCRA

WTP – WILLINGESS TO PAY

TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
LISTS OF FIGURES	v
LIST OF TABLES	vi
LIST OF ABBREVIATIONS	vii
TABLE OF CONTENTS	viii
CHAPTER ONE: INTRODUCTION	1
1.1 Overview	1
1.2 Background	3
1.3 The Client	5
1.4 The Problem Statement	5
1.5 Project Objective	6
<i>1.5.1 Project Scope</i>	7
<i>1.5.2 Relevance of Study</i>	8
1.6 General Environment (PESTLE Analysis)	9
<i>1.6.1 Political</i>	9

1.6.2. <i>Economic</i>	10
1.6.3 <i>Social</i>	11
1.6.4 <i>Technological</i>	12
1.6.5 <i>Legal</i>	12
1.6.6 <i>Environment</i>	13
1.7 Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis	13
1.8 Organization of Report.....	15
CHAPTER TWO: PROJECT NEEDS ASSESSMENT.....	16
2.1 Overview of Needs Assessment.....	16
2.2 Understanding of the Identified Problem	17
2.3 Research Design	18
2.4 Research Scope	19
2.4.1 Study Population	19
2.4.2 Sampling Method	19
2.4.3 Sample Size	20
2.4.4 Data Collection Instrument	20
2.4.5 Data Analysis	21
2.4.6 Validity and Reliability	21
2.5 Ethical Considerations.....	22
2.6 Research Limitations	22

2.7 Findings from the Needs Assessment	23
2.7.1 Findings from Questionnaire.....	23
2.7.2 Findings from In-Person Interviews.....	24
2.7.3 The conclusion from Needs Assessment.....	25
2.8 Proposed Solution	25
CHAPTER THREE: MASTERY OF SUBJECT MATTER.....	27
3.1 Business Feasibility Research	27
3.2 Market Research & Financial Projection Analysis	28
3.4 The Real Estate Development Process.....	32
3.5 The Fit Between Market Research, Financial Projection Analysis & the Eight Stage Model of Real Estate Development.....	34
3.6 The Ten Critical Questions That a Real Estate Business Feasibility Research Must Answer	36
3.7 Empirical Review.....	37
3.8 How to Conduct a Real Estate Market Research & Financial Projection Analysis.....	40
3.9 Conceptual Framework	41
CHAPTER 4: FINDINGS & RESULTS	43
4.1 Data Analysis, Presentation and Report.....	43
4.2 Summary of the Market Research Component of the Business Feasibility Research.....	47

4.3 Conclusions Drawn from the Market Research Study Component of the Business Feasibility Research Report	57
4.4 Summary of the Financial Projection Analysis Component of the Business Feasibility Research Report.	59
4.5 Conclusions from the Financial Projection Analysis	63
4.6 Who Should Use This Business Feasibility Research Report and When Should It Be Used	64
CHAPTER 5: KEY INSIGHTS, RECOMMENDATIONS & CONCLUSION	65
5.1 Key Insights.....	65
5.2 Recommendation.....	67
5.3 Conclusion.....	68
Reference	69
APPENDICES	73

CHAPTER ONE: INTRODUCTION

1.1 Overview

Urban Studies draw parallels between townships and cities' contemporary evolution. Additionally, urban studies further narrow in on the fundamental interaction humans have with their physical environment. An important concept within the urban studies sphere is housing. In their 2016 publication titled *Key Concepts in Urban Studies*, Budd, Gottdiener, & Lehtovuori argue that housing is a commodified asset allotted by real estate markets in capitalist societies. Budd, Gottdiener, & Lehtovuori's perspective suggests that the concept of housing expresses property (land or buildings) ownership controlled and monitored by some form of demand and supply in capitalist-inclined settings.

In exploring a different perspective, specifically from the *Encyclopedia of Aging*, DeMedeiros & Rubinstein (2006) also argue that housing denotes "the physical structures and services, governmental and economic influences, and the symbolic characteristics associated with where one lives." DeMedeiros & Rubinstein's view suggests that housing provides some form of shelter which supports human living and interaction. Housing is essential in human interaction as it yields organic human dwelling places and habitations. In his theory of needs, American sociologist Abraham Maslow (1954) expresses the dire need for housing. Maslow (1954) posits that physiological needs consisting of access to food, clothing, and shelter are fundamental requirements for human survival. Thus, if these physiological needs are not fully satisfied, it becomes challenging for individuals to achieve higher needs. Maslow's input disagrees with Budd, Gottdiener, & Lehtovuori's (2016) theory on housing perspectives, as Budd, Gottdiener, & Lehtovuori argue that housing occurs only in capitalist societies. The stance taken in this study is

that the fundamental nature of housing makes housing a universal phenomenon regardless of societal classism, as argued by Budd, Gottdiener, & Lehtovuori. This chapter further expounds on the concept of housing and its importance to human development. Despite the importance of housing, there are some visible housing gaps which this study seeks to explore in the next paragraph.

The technical anthropology of these visible housing gaps is known as a housing deficit. As such, a housing deficit is an occurrence whereby there is a deficiency in the quantum of housing required to serve the populace in a specified area fully. Unfortunately, research by the WorldBank in 2015 indicates that the African continent is the least-urbanized and accommodates only 11.3% of the world's urban population. This statistic mirrors the number of Africans with housing challenges and needs. According to Bah, Faye & Geh (2018), African narratives on housing reveal an enormous housing deficit. Making inferences from their research, the authors argue that more than 17 African countries have housing deficits of 1 million housing units in excess. This suggests that in these 17+ African countries, there is a deficiency or lack in the number of houses required to accommodate the population of specified areas fully.

This study vividly recalls the issue of rising housing deficits immediately after the Second World War. In those instances, it was recommended for emerging economies to build more houses to replenish the demolished ones. Unfortunately, the African context has struggled to make this recommendation a reality. As such, housing deficits are currently a significant plague hampering the African continent's growth and development. It is imperative to state that besides the glaring issue of housing deficits, acute infrastructure deficits across the sectors of the African economy are actively existent. For instance, Oxford Business Group (2020) exemplifies Ghana's health infrastructure deficit. Consistent with Oxford Business Group's findings, the World Bank (2020)

working document on Kenya posits a need to sustainably provide \$4 billion annually (20% of the Kenyan Gross Domestic Product) to remedy Kenya's sectoral infrastructure deficit. These findings mean that the African urbanization challenge is a fine blend of sectoral infrastructure deficits in health, education, and severe housing deficits.

1.2 Background

Based on the discussion in the preceding section, this study believes that the African sectoral infrastructural and housing challenges are varied and are no different in Ghana. Zoning in on educational infrastructure, thorough research across Ghana indicates that students do not experience quality teaching and learning experiences due to low-quality building designs and educational infrastructure deficiencies. With Education Business (2020) arguing that lightening quality & aeration quality can affect a student's academic performance, Bluysen (2016) further contends a correlation between quality educational infrastructure and a student's academic performance.

Findings from research conducted by Education Business (2020) and Bluysen (2016) express the need for quality educational infrastructure. Unfortunately, early on in the Ghanaian educational context, the typical Ghanaian child is exposed to infrastructure deficits; this serves as a barrier to effective teaching and learning. Dalafu's (2018) research work found that at least 500 Ghanaian pupils sit on the floor to learn in Sanhuli Primary School in the Saboba district of the Northern Region of Ghana. The existence of similar educational infrastructure deficits even at the senior high-level institutions makes the situation more appalling. Perhaps, it is for this reason that the former president of the Republic of Ghana, John Dramani Mahama, had a political aspiration to build 200-second cycle institutions to help bridge the gap existing in the Ghanaian educational infrastructure.

Furthermore, there is a vivid display of significant student housing deficits in tertiary universities across the country. A classic example is the story put out by the Daily Graphic (2020), which reported that an excess of 9,000 newly admitted University of Ghana – Legon incoming students did not have their housing needs met. Though the university admitted over 11,000 students, the school only had a housing capacity of 1,790 for the first years. With the incumbent government's free senior high school initiative, 1.2 million additional Ghanaian children have access to second-cycle schooling. Given this, the admission rates of the various tertiary institutions are on the ascendency.

With a focus on tertiary institutions in the Greater Accra region, the region houses the country's highest number of tertiary institutions. UniRank's (2020) survey reports Accra to house 37 recognized tertiary institutions. UniRank's report presents a combined Accra-based tertiary student population above 1,964,000. However, this massive combined student population's housing demands are always under-satisfied, posing an imminent challenge to quality teaching and learning experiences within tertiary institutions in Accra. This imminent challenge mirrors Bluysen's (2016) perspective on the correlation between student academic performance and quality educational infrastructure in that a student with quality educational infrastructure generally performs better in their academic work compared to those with inadequate educational infrastructure.

In recent years, real estate developers have diversified their housing projects to tertiary education. The glaring housing deficit at the tertiary level serves as a massive market for these real estate developers. The Rent Act of 1963, Act 220, makes the concept of student housing rental feasible as this act regulates interactions between tenants (students in this case) and landlords (real estate developers). Logically, inferring from the perspectives above, it is apparent that satisfactory

housing conditions at the tertiary level are a crucial parameter enhancing quality teaching and learning experiences.

1.3 The Client

Equilibrium Partners Limited (EPL) is a leading and experienced infill real estate development firm located in the Greater Accra Region, Ghana. Over ten years, the client has hands-on experience in the real estate industry spanning the entire property investment and development processes. EPL is looking to develop a 500-600 student housing rental facility in Accra targeted at tertiary institutions to capitalize on the rising demand for comfortable student housing facilities near university campuses and basic social amenities. EPL wants to gain a perfect understanding of the size of the unmet demand of student housing deficits, key areas that have a lot of student housing, and their corresponding occupancy and vacancy rates within each school semester. EPL would also need insight into existing market price points. With all of these data well synthesized, the client can make an informed decision on the feasibility of producing a value-oriented product to gain an additional significant market share.

1.4 The Problem Statement

A continent-wide trend is a demand for accommodation from the rising number of tertiary level students throughout Africa. According to UNESCO (2017), there is an additional 2.5 million students in tertiary education than recorded data in 2012. This numerical change between 2017 and 2012 represents a 21 increase in percentage points in tertiary education throughout Africa. In Ghana, Atuahene & Owusu-Ansah (2013) argue that enrollment in tertiary education has seen a percentage increase from 4 to 20 in private universities, polytechnics and professional institutes. All Africa (2020) claims that Accra-based public and private universities have even threatened to

reduce their yearly admission rate to match their available accommodation size. The rising percentage increases in tertiary education in Ghana and the potential decrease in the annual tertiary rate of admission as a strategy to curtail tertiary education housing deficits expresses the need for additional housing in tertiary education hotspots in Accra. Based on the role that student rental housing plays in tertiary education, the client needs to understand the tertiary level rental housing landscape to capitalize on the market's growing demand. Thus, this study seeks to provide market and financial data that will assess the feasibility of developing student housing in selected tertiary education hotspots of Accra.

1.5 Project Objective

The primary aim of this research is to provide market feasibility intelligence, which will readily help EPL leverage the rising demand for comfortable tertiary education student housing facilities located within close proximity to university campuses and basic social amenities. The research thus seeks to answer the following questions to realize this project's aim:

1. What is the available student housing within selected universities and the size of the unmet demand from students?
2. What is the market's vacancy and occupancy rates during each academic semester?
3. What is the profile of students renting properties?
4. What are the price points for already existing housing facilities in selected tertiary institutions?
5. What are the available student housing projects in the pipeline for selected institutions, and what is their estimated year of completion?
6. What is the financial feasibility of developing student housing accommodation in selected tertiary institutions?

1.5.1 Project Scope

This research covered seven (7) universities in Accra, namely: University of Ghana (Legon), Webster University, University of Professional Studies, Accra (UPSA), Radford University, Lancaster University, Knustford University and Ghana Institute for Management and Public Administration (GIMPA). It is imperative to note that all seven schools above are within the same geographic area, the Madina-East Legon area and have significant housing deficits. Thus, the proximities of these selected institutions further expressed the need to focus on these seven institutions since solving their housing deficit need will have a more significant impact. These schools have been grouped into zones depending on their proximities to each other. Table 1 and *figure 1* below exhibit the categorizations.

Table 1: Selected Tertiary Institutions grouped into geographic zones.

Geographic Zones	Tertiary Institutions
Zone 1	Webster, Radford, Lancaster, Knustford
Zone 2	UPSA
Zone 3	GIMPA, Legon

Source: *Author's Own Classification, 2020*

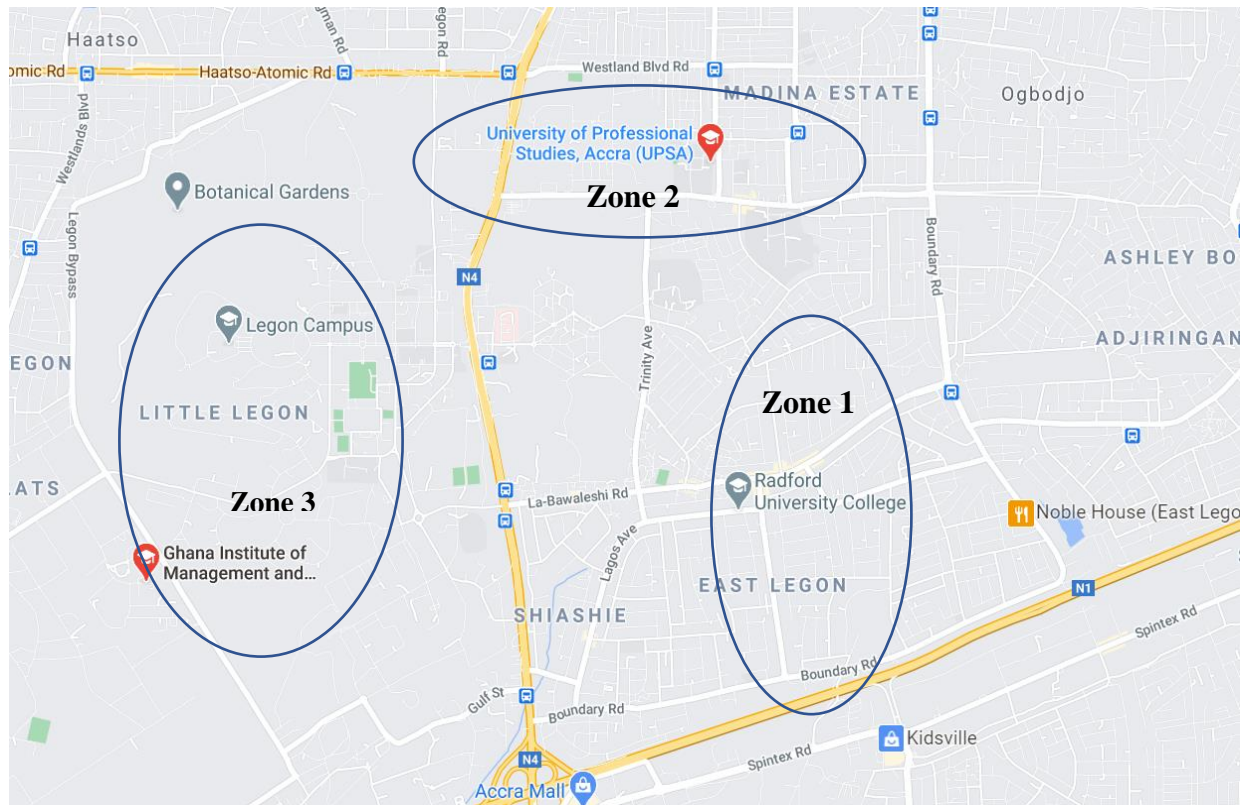


Figure 1: Selected Institutions grouped into geographic zones

Source: Google Maps

This research will make an analysis based on the distinct features of each selected tertiary institution classified in these zones.

1.5.2 Relevance of Study

The research would be vital in gaining an intrinsic and innate understanding of housing deficits in the selected tertiary institutions. These research findings would be pivotal for stakeholders to understand how to tackle tertiary-level housing deficits effectively. EPL desires to leverage the potential tertiary student rental housing market to create a more expansive portfolio. With the client's high risk-level awareness before any market entry, the study's findings fully satisfy the client's wishes as it provides market and financial intelligence to assess market

attractiveness. Thus, the research findings will afford EPL an avenue to make an informed decision on market entry based on the market's attractiveness. Additionally, given the current unmet tertiary student rental housing demand, findings from this study will serve as a barometer for decision-making by other large commercial real estate firms who want to make market entry into the tertiary student rental housing market.

1.6 General Environment (PESTLE Analysis)

A PESTLE analysis is used to determine the micro and macro environmental conditions which affect a specific business. United Kingdom-based Chartered Institute of Personnel and Development (2020) argues that a PESTLE analysis is a tool that gives first-hand insight into how an organization interacts with its immediate environment. Based on these perspectives, this project believes that an adequate understanding of the PESTLE framework potentially provides EPL with a significant competitive advantage in the market. This is because a good measure of changes in the macro-environment of EPL's business can help management to make strategic decisions. It is imperative to indicate that PESTLE is an acronym that stands for political, economic, social, technological, legal and environmental factors.

1.6.1 Political

Ghana is currently in its fourth republic and has experienced four different presidents. According to Oxford Business Group (2020), Ghana ranks amongst the few countries with near-perfect political and economic stability in sub-Saharan Africa. Ghana's constant smooth change of political power since the fourth republic validates the findings from Oxford Business Group. In 2012, Ghana had an election dispute; however, the Supreme court adjudicated the case. The

plaintiff (New Patriotic Party) accepted the ruling despite its loss to the defendant (National Democratic Congress).

Ghana's political and economic stability serves as an incentive for EPL to source foreign investments to easily finance this prospective project. This is because Ghana's political and economic stability serves as a form of risk control for foreign investments. The statistics gathered by research experts, Index Mundi in 2018, mirrors this argument. For instance, in 2016, the value of foreign direct investment increased from a \$2 billion surplus in 2015 to a surplus of \$3 billion.

Additionally, it is interesting to know that Ghana's political sphere can primarily affect the real estate industry. Ghana's construction sector has experienced growth predominantly because the government intends to create affordable housing and other relevant vital infrastructure like roads. Reports from Oxford Business Group (2020) indicate that Ghana's real estate market's potential is massive, primarily as recent government efforts and initiatives aim to establish a robust mortgage market and an increased stock in the affordable housing plan. The Oxford Business Group also cites Ghana Statistical Services' article, highlighting a 3% expansion of the real estate sector in real terms between 2015 and 2017. Additionally, there have been significant improvements in land registration and permit systems over the years (Rent Chamber, 2020). With these improvements, it is unlikely EPL may have litigation issues during the land acquisition negotiation stages should the market yield feasibility.

1.6.2. Economic

Within the real estate space, it is an axiom that the overall economic setting affects the real estate landscape. For instance, money supply is one primary macroeconomic variable that drives real estate prices. If the money supply in an economy is scarce, it stands to reason that it is difficult to borrow or lend money. Thus, only a few people can purchase homes, and only a few real estate

developers can embark on projects. Conversely, an increased money supply in an economy means there is a relatively more fluent exchange and general cash availability in the system. The effect is that the real estate industry's entry rate becomes relatively easy and makes the market too saturated. Analyzing Macrotrends (2020) research, it comes to light that Ghana's high inflation of 17.45% in 2016 saw a decline to 7.18% in 2019. This predicts a trend of falling inflation rate for Ghana. This declining pattern is massively beneficial to EPL. The trend will reduce EPL's cost of borrowing and check overall prices of goods and services (building materials in this context) in the country, further regulating money supply in the Ghanaian system.

1.6.3 Social

According to the World Factbook (2020), Ghana has a population of approximately 29,340,248 with a Gross Domestic Product Per Capita of \$4,700. Analyzing Ghana's demographic profile from the World Factbook research revealed that 57% of Ghana's population is under the age of 25 years. This suggests that more than half of Ghanaians are either enrolled in second-cycle institutions or are currently in tertiary institutions. The fertility rate of four children per Ghanaian woman reported by the World Factbook (2020) is a metric indicating that the population is growing, and the 57% figure of young people can potentially increase. Integrating this research with the incumbent government's free senior high school initiative that places 1.2 million more children in senior high school suggests that the annual senior high school graduate percentage is rising. Ghana's demographic features present significant demand for EPL, acting as an incentive to perhaps double investments made towards this project (should the market be feasible); to gain more market share.

1.6.4 Technological

Technological advancements generally give a broader, effective and more efficient market in the real estate industry. The global development of technologies like virtual realities has made it very easy to conduct a sale in the real estate industry. Locally, the increased use of technologies like social media marketing creates an avenue for real estate products. According to Global Digital Insights (2020), social media penetration within the Ghanaian context is pegged at 20% currently. In nominal terms, this percentage represents 6 million users in Ghana on social media as of January 2020 (Global Digital Insights, 2020). EPL can leverage Ghana's strong social media currency to cut down on marketing costs should the project be feasible for construction.

1.6.5 Legal

Drawing from a humanities repository, land tenure systems describe relationships between landholders or owners and the state. Food & Agriculture Organization of the United Nations (2020) observes two types of land tenure systems. The first is public lands regulated by the presidential figure of any given country for general use. The second is the customary tenure, which is land placed in chiefs' custody. Asamadu's (2003) article brings to light an 80% of land ownership by traditional Ghanaian leaders in the Ghanaian context. This suggests that the customary land tenure system consists 80% of land in Ghana. With this practice, the traditional leaders are full custodians of the respective land. This mirrors the concept of the principal-agent theory. In the theory, one person, normally labelled as the agent (in this case the traditional rulers), takes care and makes decisions on behalf of another person, who owns a given property; usually referred to as the principal (in this case, the township where the traditional rulers rule). It is imperative to indicate that within the Ghanaian practice, with the active consent of a landowner, a particular land can be

leased out for a mutually agreed period to a third party. However, if there is no renewal at the end of the mutually agreed holding period, the land is returned to its rightful owner. The inherent challenge with the customary land tenure system of ownership, as expostulated by Asamadu (2003), is the absence of legally documented paperwork on any leased or sold land. As such, the landowners wrongly sell their land properties to multiple owners. Logically, the Rent Act of 1963, Act 220, serves as a watchdog for relationships between landlords and their respective tenants. EPL can easily benefit from the customary land tenure system by leveraging its rich social currency garnered across ten years to pay a discount land price. However, EPL must be mindful of the inherent challenge associated with the customary system.

1.6.6 Environment

Lamudi (2014) argues that in Ghana, lands purchased in prime urban areas or close to urban areas tend to have a higher face value. Lamudi's (2014) finding aligns with Independent Property Value's (2020) research work, which ranked location as the primary driver for intrinsic land value. With the selected institutions all located in prime urban areas of Accra, EPL is likely to incur a high land expense, should the project be deemed feasible. Additionally, a significant portion of land, especially in the Legon area, is virgin land. In reducing deforestation, it will be worthwhile for EPL to consider greeneries during construction to avoid aggravated climate change issues in the future.

1.7 Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

SWOT is an acronym defining a firm's strengths, weaknesses, opportunities and threats. Information retrieved in mapping out this SWOT analysis is based on an analysis of the client and

a review of existing literature. This section, however, presents a summary of the SWOT. The full SWOT is attached in the appendix of this study (Appendix -Section 5, Table 1.1.5)

The client's significant strengths are (a) experienced industry knowledge, (b) an expensive social capital of local and foreign real estate developers and investors, who can potentially serve as co-project partners and (c) the cumulative student population of 80,649 serve as a direct demand for student housing in selected areas. Next, EPL's primary weakness, relative to this project (if proved feasible), is the potential high land expense incurred by default of the location of the selected institutions. Roping in opportunities, educational policies like the free senior high school increases the annual admission rate of tertiary institutions; this increases the potential demand for EPL to explore. Another significant opportunity is the ease of raising funds in the real estate industry with instruments like Real Estate Investment Trusts (REITS) or from bodies like the IMF for large and capital-intensive projects as this. Lastly, a critical threat identified is that the frequent changes in governments may lead to enacting new laws and policies that may adversely affect real estate developers. A potential increase in real estate development taxable income is an example of how new government policies may affect EPL.

Given the potential high land expense should the project pass the feasibility test, EPL can utilize its strength of strong industry local and foreign social capital by exploring the idea of co-developing partners to reduce land and overall project expense. Based on the rising demand opportunity on the market, EPL can leverage its industry knowledge to map out inexpensive alternative means of construction like exploring the idea of container housing. The result of this recommendation will be reduced project costs – which gives EPL capacity to channel more investments into the market for a larger market share of the tertiary student rental housing market. However, given Ghana's dynamic governance systems, EPL needs to make conscious efforts to be

tax efficient with the project, if deemed feasible. Logically, insights gleaned from the SWOT increase EPL's risk awareness level, further helping the firm make a holistic assessment of market attractiveness.

1.8 Organization of Report

This study combines the author's own research and research conducted by other scholars on tertiary student rental housing. The project report is divided into chapters and sections to explore different areas of the research problem. The paper thus encompasses five main chapters. Chapter one generally discusses the theme, critically employing tools like the PESTLE and SWOT to glean insight into the market. Chapter 2 is next; the chapter surveys the market to validate the research need, market gaps, and proposed solution. Having identified the gaps, if any, the subsequent chapter (chapter 3) categorically reviews the literature on the proposed solution. Chapter four sheds light on methodologies adapted in surveying the market and expounds more on the survey findings. The paper ends with the fifth chapter, which gathers project insights, recommendations, limitations, and conclusions inferred from this project's core findings.

CHAPTER TWO: PROJECT NEEDS ASSESSMENT

In this chapter, this feasibility study makes a detailed discussion on the project needs assessment. The chapter captures insight into what a needs assessment is and its relation to the feasibility study. The chapter also makes a thorough discussion exhibiting an understanding of the identified business problem, consequently synthesizing methods on how the needs analysis was conducted to validate limited tertiary student rental housing deficits as specified in the previous chapter. Next, this chapter ends by piquing insights into the findings from the needs assessment while indicating the proposed solution for this feasibility study.

2.1 Overview of Needs Assessment

In understanding a needs assessment, it is vital first to understand the need of EPL. EPL desires to leverage the potential tertiary student rental housing market to create a more expansive portfolio. The problem however is the absence of market data to enable EPL assess market attractiveness. Thus, EPL's high risk-level awareness before any market entry makes this feasibility study an asset to the firm.

The office of Migrant Education (2001) define needs assessment as a practical and systematic set of procedures used to analyze a particular need, critically examining the associated cause and effect relationships of the need and setting priorities for further future action. The office of Migrant's perspective of needs assessment suggests that needs assessment is a problem identifying and validating tool which provides solution patterns in an attempt to remedy the identified problem. In a different perspective, Watkins's (2008) viewpoint on needs assessment offers an easier way to comprehend the concept of needs assessment. Watkins (2008) posits needs assessment to be a tool for generating questions on a specific problem, making a comparative

analysis of answers retrieved and drawing well-informed conclusions on how best to remedy the identified problem. Thus, a needs assessment aims to re-think the priorities of research while validating the problem-solution fit-gap of the identified problem. In context, this needs assessment explores the associated causal effects and opportunities of developing a wholesome and collective student rental housing product to sustainably tackle the glaring problem of tertiary student housing deficit in the selected institutions.

Based on Watkins's (2008) perspective, a forward-thinking needs assessment (a) identifies the data and data sources needed for the feasibility study, (b) piques insight into the data gathered and (c) provides reasoning for the solution proposed to the identified problem. Thus, in determining the feasibility of the problem of limited student housing availability among the selected tertiary institutions for EPL, the following sections (a) identifies the data and data sources needed (b) draw insights on the data collected and (c) gives a strong rationale behind the proposed solution.

2.2 Understanding of the Identified Problem

In the past decade, there has been continuous growth in students going into tertiary institutions. The continuous growth is a consequence of an increasingly youthful population and the commitment by the government to raise tertiary education participation as a way to increase economic growth and reduce inequality, with the latest being the government's free senior high school policy initiated in 2017. The problem of limited tertiary student rental housing is attributed mainly to the fact that the primary focus of most Ghanaian tertiary institutions is on growing their academic facilities to match the teaching and learning needs of their enrolled students (Nyassor, 2017). The effect of the growing tertiary educational facilities results in a situation where these

tertiary institutions leave their student accommodation facilities market untapped. The untapped student accommodation market creates an ideal business opportunity for developers to collaborate in joint ventures to tap into the tertiary student rental housing market. However, the dilemma for EPL is whether or not making investments into this largely untapped market would be is feasible. To help ramify this dilemma, the client needs data-driven insights to help make an informed business decision. EPL requires a high-level understanding of market insights like the available student housing within the selected universities, the size of the unmet demand from students, market vacancy and occupancy rates, student profiles and the financial feasibility of this prospective development. The following section discusses how data collection methods and the study's research scope.

2.3 Research Design

This feasibility study employed a mixed methodology approach. Per the project scope, three primary data sources were identified: (a) the students, (b) university officials in charge of housing and logistics, (c) private hostel managers. The students are direct customers and beneficiaries of EPL's prospective development, given project feasibility is fulfilled. Thus, it was vital to engage the students in collecting discrete and numeric data on factors like rental rates, proximities (in minutes) of their current housing to key amenities like lecture halls, groceries, and others. The university officials in charge of housing and logistics were also crucial as they are indirect beneficiaries of EPL's prospective development (reduced student housing pressure on the institution). Thus, university officials were integral in understanding factors like the student population and profile of students. The last, private hostel managers, though potential competitors, were instrumental in the data collection process because they provided insights on key success factors of the market. Interlacing the research design with the research approach, a mixed

methodology was preferred because it allowed the use of tools like questionnaires to extract discrete and numeric data (quantitative data) from students for better perspectives on the project scope. Again, the mixed-method approach allowed for tools like interviews to be utilized in extracting information which gave descriptive and characteristic data (qualitative data) from university officials in charge of housing and logistics and private hostel owners, to put the customer and beneficiary experiences of the limited tertiary housing problem into perspective.

2.4 Research Scope

2.4.1 Study Population

The study population generally refers to the "group from which the sample is drawn" (Johnson & VanderStoep, 2009). As earlier indicated, the population for this study involved three main categories of people: (a) students of selected tertiary institutions, (b) university officials in charge of housing and (c) hostel managers of already existing housing facilities in the market.

2.4.2 Sampling Method

The sampling technique employed in the study is the stratified sampling technique. According to Johnson & VanderStoep (2009), a stratified sample involves selecting participants based on their membership in a group or stratum. Given that the identified data sources for this study were based solely on membership of any of the selected tertiary institutions, a stratified sampling methodology is most appropriate.

2.4.3 Sample Size

A sample is "the subset of people from the population, who take part in a research study" (Johnson & VanderStoep, 2009). The sample size for this research included 500 students, personnel from the housing and logistics administrative team in these identified tertiary institutions, and a maximum of three hostel managers for each tertiary institution. The rationale for 500 students was based on the respective tertiary institution population sizes. Tertiary institutions with 10,000+ population size like Legon, Gimpa & UPSA had a 100-student response rate target. Tertiary institutions with 200 - 1,000 populations like Lancaster, Radford, Webster and Knustford also had a 50-student response rate target. Selection for which hostel managers to engage at each tertiary institution was based on the top three most occupied private hostels as indicated by the students while filling the questionnaire.

2.4.4 Data Collection Instrument

The data collection method was dual. Questionnaires and interviews were utilized. The incorporation of the interview instrument assisted in generating qualitative data while incorporating questionnaires sourced quantitative data from our respective data sources. It is imperative to indicate that the interview instrument was semi-structured and questions for the interview sessions were open-ended, further helping to identify insights and justifications to participant responses. Given the semi-structured interview questions, the researcher did not follow a strict order of questions. Instead, the researcher allowed room for probing on critical responses, as given by respective interviewees.

Next, the questionnaire employed for this study was brief, logically arranged and made use of easy-to-understand language. Additionally, the questionnaire had attached a descriptive title that

gave prospective participants an overview of the questionnaire and insights into key details like the total estimated time needed to complete the questionnaire. The interview and questionnaire data collection instruments appropriately did have consent forms attached to first solicit for the approval of the prospective participant.

2.4.5 Data Analysis

The researcher analyzed the data provided by the interview instrument through the development of general themes and patterns identified among interviewee responses. Given Haggarty's (1996) viewpoint in that content analysis enables the researcher to synthesize qualitative data systematically and reliably develop general themes, content analysis was employed to understand these identified themes and further utilized deductive methodology to explain the research responses. Again, the researcher used statistical software like Microsoft excel in understanding relationships among qualitative data variables gathered from the questionnaire instrument to glean more perspectives.

2.4.6 Validity and Reliability

Consistent with Vanderstoep & Johnston's (2009) perspective, the validity of data collection instruments was assessed through content and construct validity. Two research experts evaluated the interview questions' content validity to ensure that included items were void of common errors such as double-barreled questions, complex sentences, and wrongly matched responses. The second validity test was performed by conducting a pilot test of the interview questions and questionnaire. During the pilot, participants were asked to affirm their understandability of the data collection instruments (interview and questionnaire) and their ability to answer them. For construct validity, and again consistent with the viewpoints of Vanderstoep & Johnston (2009),

the data collection instruments were well-matched with the objectives of this study. The researcher used the same interview questions and questionnaire for all research participants to avoid any inconsistencies during the analysis of the results. This undertaking by the researcher further ensured the reliability and consistency of the data gathered.

2.5 Ethical Considerations

The confidentiality of all respondents during the data collection phase was highly respected. Confidentiality was ensured by not requiring the names and other personal contact details of respondents during the interview sessions and administering the questionnaire. Participation was purely voluntary, and the participants had the free will to decide whether or not to participate in the research procedure. Before the interview session and administration of the questionnaire, participants were given a detailed brief about the purpose of the study. The researcher then sought participant permission first before inception. Lastly, participants had the liberty to withdraw from the study at any point in time. Feedback obtained from the data collection was solely used for this academic study.

2.6 Research Limitations

- ❖ Analysis of this report will not be accurate if the information provided by interviewees is false.
- ❖ The outbreak of the Covid-19 pandemic made it challenging to have access to people who made purchasing decisions like the hostel owners.
- ❖ This study is limited to only tertiary institutions located in the Greater Accra Region.

2.7 Findings from the Needs Assessment

With EPL's needs assessment and research methodologies employed by the researcher duly discussed above, the following section gives brief needs assessment insight of the students, university officials and private-owned facilities.

2.7.1 Findings from Questionnaire

The questionnaire captured data insights from the student perspective across the seven tertiary institutions. Feedback from the administered questionnaire revealed that an estimated 95% of students rated housing facility availability on or near campus a 5-star within a 1-star to 5-star range (5 star depicts high importance to the student, and 1 star depicts low significance to the student). The 95% rating describes a high level of relevance of these tertiary institutions' housing facilities. Given the already established premise from Bondinuba & Nimako's 2013 paper on the need for quality housing in higher education levels, the immense importance of housing to students of these seven tertiary institutions is unsurprising. Figure 2 below elicits excerpts of qualitative evidence justifying the rationale for a 95% 5-star rating of having on or near campus student rental facilities for the students of these selected seven institutions.

ID ↑	Name	Responses
1	anonymous	Having a housing facility near campus allows you to have easy access to the library and it also alleviates the stress associated with coming from home
2	anonymous	It's very important for it to be near campus making transportation to campus easier and movements as well. It can also help the students to learn for longer hours on campus because the student can leave at any given time to get back to the hostel and rest.
3	anonymous	Arriving early for class
4	anonymous	It makes studying in the school library easy and convenient

Figure 2 – Sample of Qualitative Evidence Justifying Student Rationale on 5-star rating on having a housing facility on or near campus.

Source – Author's Questionnaire Backend

An intrinsic analysis of figure 2, consistent with the entire feedback attained from the back-end of the questionnaire to this particular question, classifies factors like (a) easy access to school amenities like libraries, (b) cost-effective benefits expressed through transport cost savings; (c) punctuality to respective classes as key drivers justifying the pressing need of housing facilities to students of these identified tertiary institutions.

2.7.2 Findings from In-Person Interviews

The in-person interviews with the university officials of these seven identified tertiary institutions revealed that a broad student rental housing market was undoubtedly the way to promote effective teaching and learning at the tertiary level, aside from academic facilities. Radford university's correspondent, for instance, indicated that in this modern era where human capital is most needful, education had become of global essence, especially for developing countries. Therefore, investments into a more expansive student rental housing market were not only a temporal solution to bolster the issue of limited tertiary student rental housing, but a futuristic approach towards matching yearly tertiary admission levels to academic facilities and housing facilities. All seven university officials seemed to agree that at in an equilibrium where there is sufficient housing for all enrolled students, there would be a drastic drop in cases where students wrongfully engage in selling bed spaces to other students as well as perching (a colloquial term which describes a situation where a student lives in a room that he or she has not paid for). Next, most university officials engaged were highly bickered by the exorbitant pricing of some

private hostel owners. The university officials indicated that gaps in student housing had created a market where private developers could penetrate through collaboration with the school or individually to offer solutions. However, all seven university officials believe that these solutions should factor in their customers' student status and offer relatively affordable pricing to increase accessibility to students trapped in the student housing challenge. In schools like Legon, where some private hostels are on campus, the institution acts as indirect price regulators, giving a price benchmark, beyond which the private hostel owners cannot charge.

2.7.3 The conclusion from Needs Assessment

Drawing on the insights gleaned from the needs assessment, it is evident that there is a significant supply gap of tertiary student rental housing opportunities among the selected tertiary institutions presently. The market gap identified across these selected institutions is a strong incentive for EPL to make market entry. EPL's market entry incentive fueled by the tertiary student rental housing gaps justifies the firm's need for a feasibility research on the market as it aligns with the firm's risk-awareness culture before any market entry decision is made.

2.8 Proposed Solution

EPL needs data-driven insight into key market metrics like the available student housing within the selected universities, the size of the unmet demand from students, market vacancy & occupancy rates and financial profitability to make an informed market entry decision.

Based on the client's scope of information to ascertain an appreciable understanding of the selected tertiary student rental housing market, the proposed solution for EPL is a Business Feasibility Research Report that captures market & financial model viability. The Business Feasibility Research Report will provide comprehensive data-driven insight on whether or not the

student rental housing market in the selected tertiary institutions will be a profitable investment for EPL.

CHAPTER THREE: MASTERY OF SUBJECT MATTER

In this section, the study conducts a detailed literature review on critical elements which constitute a business feasibility research and how a business feasibility research could be applied within the real estate industry.

3.1 Business Feasibility Research

Thompson (2003) argues that a business feasibility research is "an organized setting for identifying problems and opportunities, determining objectives, describing solutions, defining successful outcomes and accessing the range of costs and benefits associated with a proposed solution for solving an identified problem." Thompson's (2003) viewpoint is aligned with Bridges (2019), who believes that a business feasibility research is a critical assessment of the viability and practicality of a proposed idea or project based on extensive market and financial analysis. Perspectives from Bridges and Thompson indicate that a feasibility business research interlaces market research intelligence with financial analysis to make informed business decisions. Gofton (1997) posits that only a fifth of diverse business ideas have commercial viability given any specific period. Thus, this paper believes that given the market intelligence and financial analysis components of business feasibility research, business feasibility research presents a framework for business owners and investors to safeguard their resources to prevent wastage based on business feasibility research findings. When a project or idea is feasible after feasibility studies have been conducted, the next step is to produce a working business implementation plan to support the objectives of the identified opportunity. According to Thompson (2003), the business feasibility research findings actively support the business planning and writing stage, significantly saving time and cost. A well-informed business feasibility research serves as a pool of business repositories for business planning which guarantees business competitiveness and sustainability.

Thompson (2003) postulates business feasibility research entail two key elements:

1. A Market Research Analysis of the Identified Gap
2. A Financial Projection Analysis of the Identified Gap

These two elements serve as the oil for any well-functioning business feasibility research. While the market research gathers market demographic and psychographic data on the target market, the financial projection analysis uses insights gleaned from the market research to conduct a cost-benefit analysis, forecasting cash flows to determine project profitability. Thus, though the business feasibility research provides investors and business executives the means to produce competitive products, the market research helps investors and business executives to map out customer-tailored products and services.

3.2 Market Research & Financial Projection Analysis

According to Grenier (2019), market research represents a collection of techniques used to gather and better comprehend a business's target market. Grenier (2019) further believes that these techniques are integral in designing customer-suited products and services, improving user experience, and forming a comprehensive marketing strategy that promotes industry leadership. Grenier's perspective suggests that gaining better insight into customer behavioral patterns and preferences could give industry firms higher competitive edges. Grenier's (2019) view is aligned with Albaum & Smith's (2010). Albaum & Smith (2010) also opine that companies that need an innate understanding of customers and what affects purchasing behaviour should be ready to tap into the power of market researching frameworks. Not only do market research assist companies to understand their customer bases better, however, market research can also be expanded to uncover critical insights about the company itself and its competition domain (Albaum &

Smith,2010). Based on Grenier's (2019) and Albaum & Smith's (2010) viewpoint, it is evident that market research could help firms explore blue ocean markets - uncontested markets mapped out by value innovation of product offerings (Grant, 1991). With this insight, this paper holds consistent Aaker et al.'s (2011) argument in that analysis gleaned from market research directly affects firms' decision-making processes.

Next, this study firmly upholds views from Chief Financial Officer Selection Team (2020), which propounds that financial projections help companies realize additional assets required to support increased revenue. Most integral is that a financial projection analysis ensures firm liquidity because it informs firms on additional debt financing or equity financing needed to remain solvent (Chief Financial Officer Selection Team, 2020). Dart Consulting (2019), however, provides an alternate insight of financial projection analysis. According to Dart Consulting (2019), market research is a strategic tool that ensures business sustainability. However, appropriate financial planning and forecasting breathe life into market research – it determines which opportunities identified within the market research would yield a profitable return on investor funds. Dart Consulting's (2019) perspective suggests that though market research identifies opportunities for potential business expansion, it is the financial projection analysis that assesses whether or not an identified opportunity would be worthwhile.

The above discussion shows that a good business feasibility research report supports firm management decisions through its market research and financial projection analysis elements. These fundamental elements can be placed into two separate branches :(a) identifying opportunity gaps with market research and (b) identifying opportunity gaps in long-term profitability with financial projection analysis (Thompson, 2003).

3.3 Market Research & Financial Projection Analysis in the Real Estate Industry

According to Grower (2017), real estate development reflects a holistic process in which an individual either builds new structures or renovates existing ones to increase value. Grower's (2017) view is consistent with Bulloch & Sullivan (2009), who argue that "real estate development is the process of creating value by making tangible improvements to real property." Grower and Bulloch & Sullivan's view on real estate development involves some form of appreciable value. However, Miles, Brens & Weiss (2007) postulate that real estate development encompasses a sustained process of meeting the infrastructure needs of society by bringing built space to fruition. The authors exemplified built space environment to be official buildings, residential buildings, among others. Miles, Brens & Weiss (2007) further indicate that real estate development only realizes its intrinsic value when the development solves infrastructure needs in society. Thus, Miles, Brens & Weiss's stress on real estate development solving society infrastructure needs is a prerequisite to Grower, Bulloch & Sullivan's value-oriented view of real estate developments. Although Miles, Brens & Weiss (2007) advocate for infrastructure-solving real estate development, the authors acknowledge that society's changing demographics and psychographics have made more relevant than ever the need for market research intelligence before any development. In his 2016 article, South African associate professor Samuel Azasu echoes the dire need for a market research before any real estate development. Azasu (2016) highlights a false reality that supply of developments creates their demand.

A classic example is the epic failure of the South African Modderfontein New City project predicted to alter the footprint of Johannesburg (Brill & Reboredo, 2018). The facts of the Modderfontein project revealed a Chinese developer, Zendai, which relied on intuition in an attempt to capitalize on the growing South African housing deficit. Brill's (2015) article indicated

that Zendai had bought a 1600-hectare site, North-East of Johannesburg and planned to carry out 55 000 housing units, 1, 468, 000 squared-meter of official space, interlaced with all needful amenities for a holistic urban life experience. Despite Zendai's optimism of Modderfontein functioning as a global business hub, the R84 Bn South African urban game-changer was an epic failure because there was zero market research conducted to pique insights into South Africa's residential market. Brill's (2005) private investigation into the collapse of Modderfontein revealed grave conflicting interests between South Africans and Zendai. Zendai's objective of high-end, mixed-used development product offerings did not fit with the city of Johannesburg's residential approach. Instead of a luxurious global hub, the city of Johannesburg preferred a more inclusive development, precisely aligned with their 2014 Spatial Development Framework.

Based on Zendai's South African experience, the need for a market research before any development are vivid. Given the costly nature of real estate developments, a developer's inability to establish demand for a development product would pose problems to the development financiers in the long term. Thus, not only does market analysis replace the excessive reliance on intuition and complacency due to past success in the real industry (Azasu, 2016) but market research also shields development financiers from colossal investment and development failures. Goodwin (2017) believes that market research is a key metric of real estate development evaluation; market research results form critical decision-making during and after any development.

Again, Miles, Brens & Weiss (2007) opine that real estate developments cannot happen without sound financial forecasting. The authors categorically argue that any real estate development value is a function of future cash flow inflows interlaced with market capitalization. For this reason, accurate financial projection analysis is a requisite after target market insights have been provided. A real estate development is a profitable investment only when its estimated value

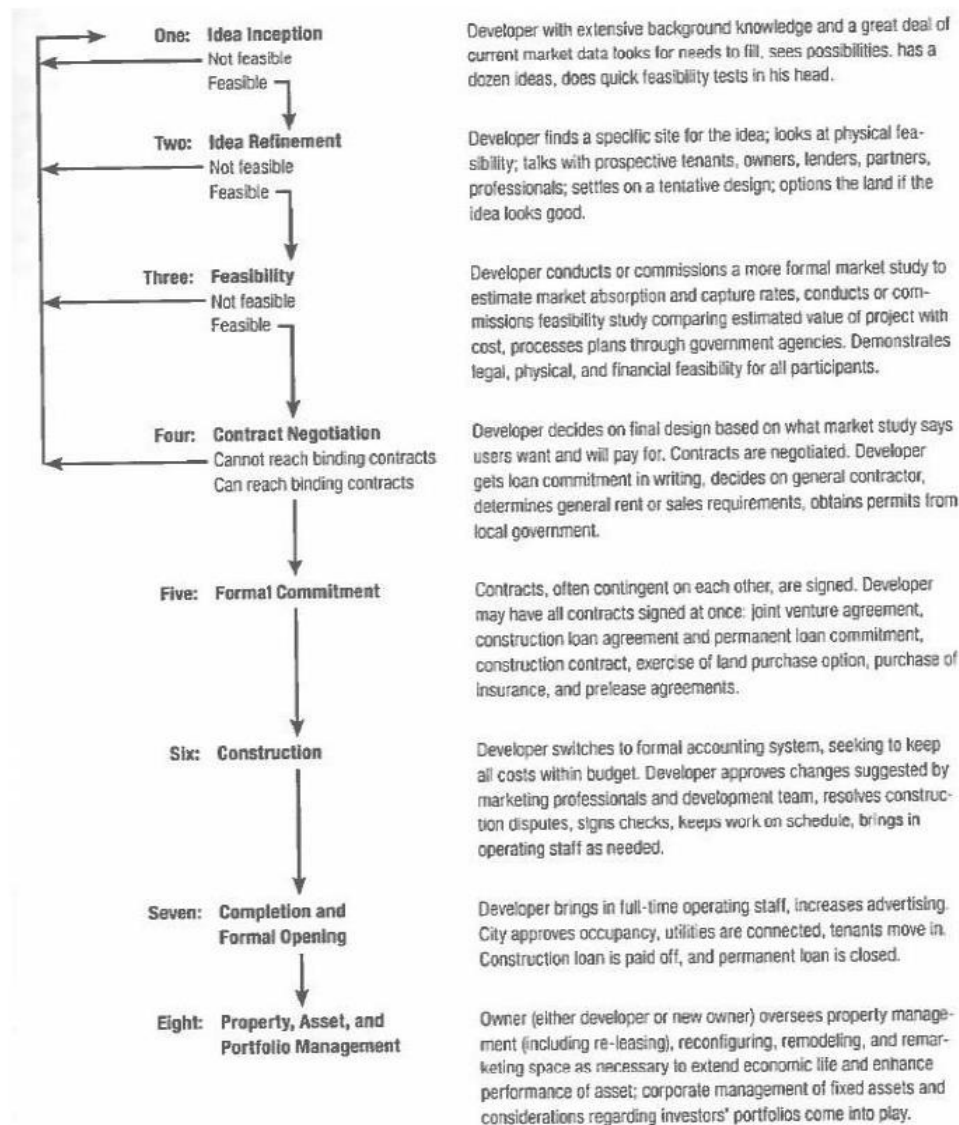
is greater than its estimated costs to be incurred (Miles, Brens & Weiss, 2007). Thus, developing infrastructure that addresses society's pressing needs requires a strong understanding of the target market's changing preferences, demographics, and psychographics validated by profitable future cashflows. These insights give rise to market research and financial projection analysis in the real estate development process.

3.4 The Real Estate Development Process

Cornell University (2020) argues that the real estate development model involves a sequential and iterative value addition process to real estate properties. The real estate development process commences from idea inception and climaxes at property management. In the context of this study, the idea inception will be developing a 500 – 600 student rental facility in addressing tertiary student rental housing deficits students face in the selected institutions. Given that the application of the findings of this study will involve all the stages of the development process, this process serves as a core framework in which the results of this study are modeled. Figure 3 below graphically depicts all the stages involved in the real estate development process.

Figure 3: Real Estate Development Eight Stage Model

Source: Miles et al., 2017



It is vital to indicate that this eight-stage real estate development model guides global and local real estate developers from the inception of their products to completion. The iterative nature of the model allows for the repetition of sequences to improve the real estate product within each stage. Though this process may differ among diverse real estate developers, the impact of this process cannot be understated for any successful real estate project.

3.5 The Fit Between Market Research, Financial Projection Analysis & the Eight Stage Model of Real Estate Development

The preceding sections infer that the market research and financial projection components of a business feasibility research give depth insight into any proposed project's conditions and viability. Dense data (historical, present, or futuristic) on any real estate development project is an asset to development project leads because they become more conscious of their decisions. In a sense, most real estate developers either perform secondary(unstructured) market research or primary(structured) market research. Secondary market research involves using information organized by external sources like government agencies and media about the identified opportunity gaps. Typically, public sources, commercial sources and educational institutions are the repository base for real estate developers during secondary market research (Sanchez Diaz, 2019).

Similarly, real estate development partners exemplify primary market research when the development partners themselves or a contracted third-party (by the development partners) profusely search and make sense of critical factors like macroeconomic variables, population growth dynamics, and consumer preferences others. Primary research usually takes the form of face-to-face interviews, ethnographic research, interviews and questionnaires. Figure 4 below alludes that market research and financial projection analysis are the bedrock of the entire eight-stage real estate development model. However, fundamental market research and financial projection analysis are broadly highlighted in the development process.

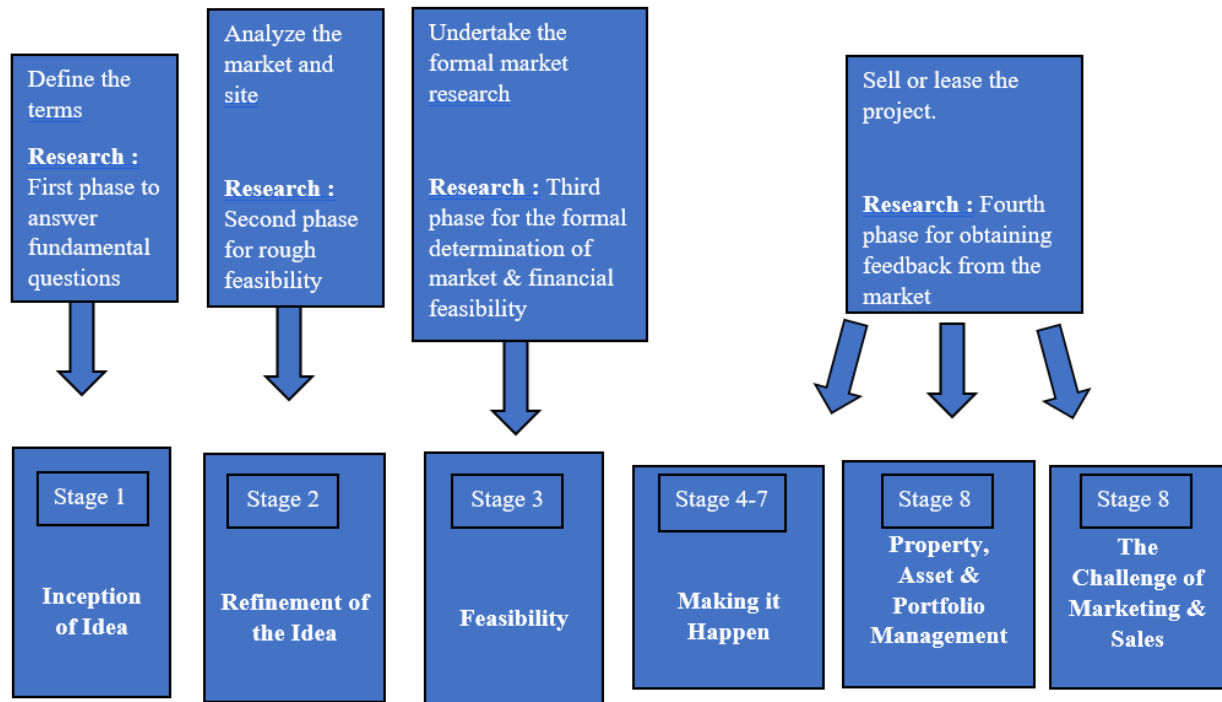


Figure 4: The Four Basic Market Research & Financial Projection Analysis in the Eight Stage Model of Real Estate Development

Source: Miles et al., 2007

From Figure 4, it is realized that primary market research is conducted before any real estate development immediately when the idea to develop a piece of property is conceived. Next, during the second stage of the development model, an analysis of the market is performed (market research 2). The third market research is used to undertake formal market research, which informs the developers about the market and financial feasibility of the project. The fourth phase of the market research is used during stages 4 – 8 of the eight-stage development model (contract negotiation, construction, property management & market lease, or sale of the property). For this feasibility study, the market research and financial projection analysis performed is a combined

effort from the first three stages of the real estate development model. This business feasibility research report satisfies phase one by providing EPL fundamental insights into the selected tertiary institutions' student rental housing market. The second phase is also satisfied because this research identifies potential geographic settings suitable for the prospective development and provides high-level insight into the target market. Lastly, the third phase is satisfied because, after the target market analysis, this study conducts a financial projection analysis of the prospective development to make holistic feasibility into solving the gaps in the tertiary student-rental market for the selected tertiary institutions.

3.6 The Ten Critical Questions That a Real Estate Business Feasibility Research Must Answer

In the fifth edition of the book, real estate development: principles and processes, Miles et al. (2007) rehearsed ten basic questions every real estate inclined business feasibility research must answer, regardless of the type of development (residential, official, among others). Development teams need to understand and appreciate the methodological approaches used in addressing these ten basic questions.

1. What trends are associated with this form of development?
2. What is the prevailing market?
3. How can the depth of the market be accessed?
4. What are the perceived values about the market?
5. What challenges and opportunities are associated with the target market?
6. How do you choose and understand the needs of the target market?

7. What are the price points, occupancy rates, and market positions of the market competition?

8. What are competitive product offerings?

9. What opportunities do competitive projects present?

10. What strategic decisions can be made from all aspects of the project? Using the feasibility findings to conclude, the prospective project can be classified into:

i. The Market - Who are the customers? What unique features do they have? What are their preferences?

ii. Positioning - Comparative to existing competition, how does the target market perceive the product offering?

iii. Identified opportunities for differentiation - How can we out-compete existing market competition?

iv. Price Point - How should our pricing reflect the value in our product offerings?

v. Occupancy Rates - How long do residents stay?

To make critical project accept or decline decisions, all real estate business feasibility research must answer fully satisfy these questions.

3.7 Empirical Review

Empirical research review derives knowledge insights from real-world experiences instead of theoretical backgrounds. Empirical studies in research are integral because they help to objectively access the efficacy of previously used methodologies (Penn State University, 2017). Due to difficulties in finding documented local real estate development business feasibility research

reports, a non-African country was used for this study. A Spanish case was reviewed. International Property Consultancy, JLL, put together this Spanish case.

Spain's student rental housing market at the tertiary level is similar to Ghana's market. It is a growing market with significant student rental housing deficits due to the increasing demand for education across Spain. For instance, JLL (2019) estimates that the gap between current supply and actual demand is a deficit of 400 000 beds, a 3.7% increase in the previous academic year. Spain's tertiary institutions, just like Ghana's, experience a yearly rise in admission levels. Like Ghanaian tertiary institutions, Spain's major colleges usually operate under concession rights whereby colleges own property or land; but lease them out for private developers to leverage their capital and experience to put up tertiary student rental housing facilities. JLL (2019) reports that these lands are typically leased for 40-year or 75-year agreement contracts to private operators (similar trend within the Ghanaian tertiary institution scope).

In the JLL case, a business feasibility research was conducted to understand the existing Spanish student rental market, the gaps, opportunities and existing competition. The rationale of the JLL research was to provide real estate developers and investors with market intelligence on the attractiveness of the tertiary student rental market to aid decision-making on whether or not to make market entry. The JLL research team gathered data from relevant players within the tertiary student rental market by interviewing students (the primary buyers of the market), existing private hostel managers and school administration. A reviewed article put out by JLL to explain the rationale behind their chosen data sources indicated that the primary buyers of the tertiary student rental market were enrolled tertiary institution students. Engaging the students was vital to revealing market drivers and metrics that influenced consumer behavioral preferences. Again, given that there are already existing market players, JLL found it insightful to understand the

Spanish student rental housing market dynamics like the intensity of competition and even propensity for substitute product offerings by engaging competitors. Lastly, JLL indicated that understanding the drivers of yearly tertiary admission levels, the size of tertiary populations and the size of the unmet demand was pivotal to unveiling research insights, thus the inclusion of tertiary administrators in their data sources. Also, given that these tertiary institutions normally operated with private real estate developers through concession rights by leasing out land under a specific period, it was vital to engage tertiary administrators to understand factors that influence and sustain these tertiary-private developer relationships.

Based on the published report by JLL after the completion of their research, Spanish real estate developers had a vast pool of information to make a go or no-go market entry decision on the student rental housing market across Spanish tertiary institutions. Thus, it is unsurprising to see real estate firms like RoundHill play on JLL's business feasibility research report in buying 12, 800sqm site in the Spanish capital to put up a student housing project slated for completion by 2023(IPE Real Assets, 2021). RoundHill's project is a 500-bed scheme and IPE Real Assets (2021) even asserts that RoundHill is actively seeking further investments to tap into Spain's tertiary student housing rental gaps. JLL's report comprises data on prospective occupancy rates, price points, product offering positioning and the target market. These four main metrics of the feasibility findings were vital in assisting Spanish real estate developers in concluding the tertiary student rental housing market (JLL, 2019). Thus, the innuendo drawn from the empirical review in this business feasibility research report shows how JLL's findings from Spain's tertiary-level student rental housing market were used in an overall determination of price points, market features, product offering positioning and occupancy rates.

3.8 How to Conduct a Real Estate Market Research & Financial Projection Analysis

Real estate-focused feasibility studies are ordered but a cumbersome process. There is an activity timeline that informs the development team on the tasks to be accomplished. Morpus (2021) outlines four clear stages to guide property development consultants on conducting feasibility studies. Morpus (2021) stages are as follows:

1. Conduct the preliminary analysis.

- ❖ Create an idea outline.
- ❖ What is the assessment of the market space for the prospective project?
- ❖ What is your competitive advantage?
- ❖ What are the associated risks involved?

2. Create a project scope outline.

- ❖ Is the research technically feasible?
- ❖ Is the research legal?
- ❖ What is the operational feasibility of the research?

3. Perform market research.

- ❖ What are the identified market opportunities?
- ❖ What are the available insights into the competition? (products, services, marketing channels, clientele database)
- ❖ What are the current needs of the target market?
- ❖ Has a similar project succeeded in the past? What costs were involved and how does success look like?

4. Conduct Financial Projection Analysis

- ❖ Where will financial resources be sourced from?
- ❖ What is the financial cost of the failure of the project?
- ❖ What is the break-even point for profits and when will it be realized?

5. Review feasibility research findings and present results to stakeholders for a go or no-go market entry decision.

Following Morpus's (2021) view, development teams need to map out feasibility procedures that will consider the relationships between real estate business feasibility research and the eight-stage model of the real estate development process. Boucher (1993) believes that this ensures total fulfillment of the respective aims of each stage of the development process.

3.9 Conceptual Framework

Conceptual frameworks represent tools used to give a visual view of thought processes and ideas in any given project. Thus, the conceptual framework in figure 5 shows the thought processes employed during this study. The conceptual framework below commences with the problem identification (performed by EPL). The identified opportunity to explore the tertiary student rental housing market, needed to be well-evaluated to gain a comprehensive insight into the opportunity.

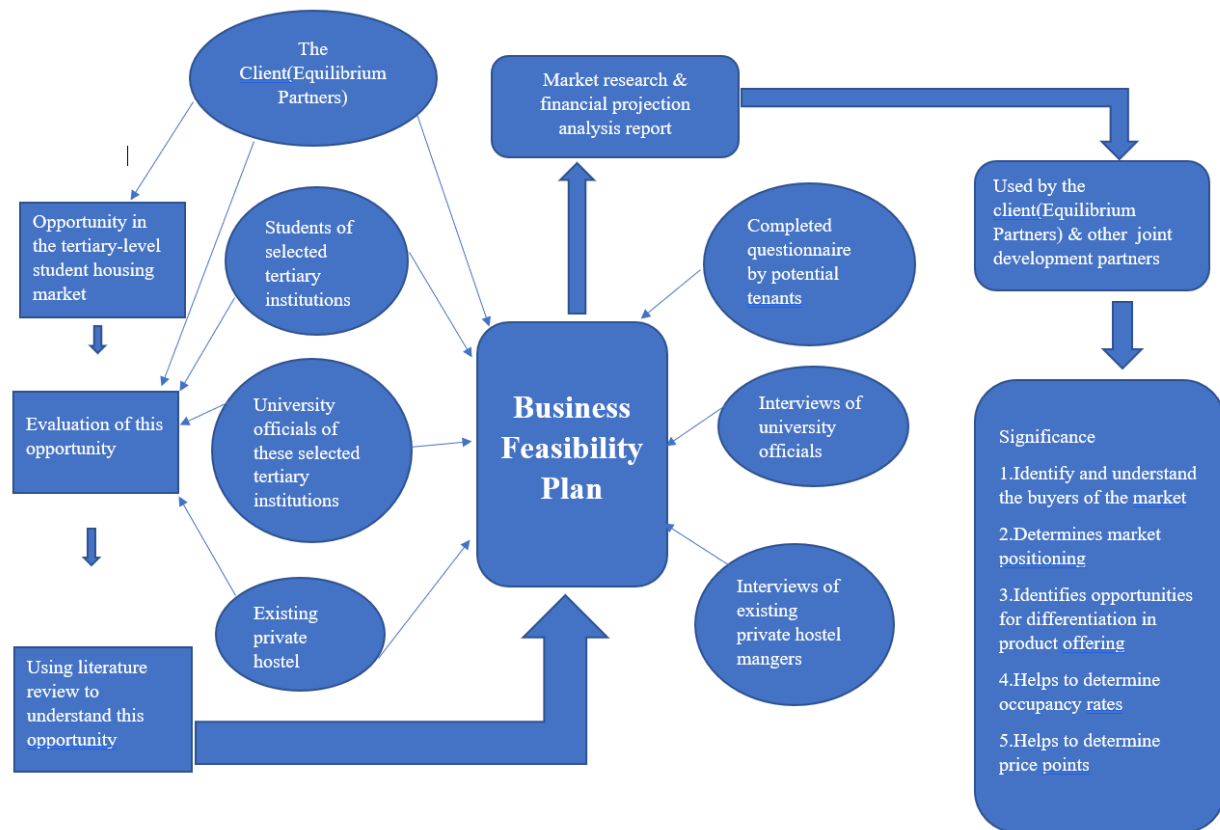


Figure 5: Conceptual Framework

Source: Author's Construct, 2021

For this feasibility study, the researcher realized that there were severe gap opportunities within the tertiary-level student rental market. There was cause for a business feasibility research report that will help EPL make an informed decision on whether this was an attractive enough market. Thus, the research design was mapped out to source relevant data from integral stakeholders in the form of students (the primary market customers), university administrative personnel and existing private hostel managers(competition). Following this extensive data collection phase, requisite data analysis proceeded which was integral to the business feasibility research report.

CHAPTER 4: FINDINGS & RESULTS

In this section, the researcher sheds light on data gathered from identified data sources. The chapter further presents a summary of the Business Feasibility Research Report. The full version of the Business Feasibility Research Report is attached in the appendix section of this document. Given that the research methodology, sample size and methods, data sources and data collection instruments have been discussed in chapter 2, the chapter commences with the researcher's data analysis.

4.1 Data Analysis, Presentation and Report

Based on the feedback received from the questionnaire, 46% of students prefer to live in private-owned housing facilities, with 27% and 26% having a preference for university-owned housing facilities and commuting from home, respectively. Given the follow-up conversations initiated with students from these universities, the percentage distribution of current housing accommodation of these students is unsurprising.

From these conversations, the researcher realized that though university-owned housing facilities are relatively cheaper and closer to lecture facilities, the 46% student preference of private-hostel facilities is largely due to factors like the type of room (one, two, or three in a room) and an amenity gap between what students want and the exclusivity of the already existing amenities of these housing units. An analysis of the data collated from the questionnaire is consistent with insights gleaned from the student conversations. For example, based on the questionnaire results, 64.5% of students residing in on-campus housing facilities live in four-in a room (three additional roommates), with an estimated 19.3% sometimes having four other roommates – meaning they live in five in a room. However, this revelation is pegged against the 53% of students in private hostels who have no roommate or have just one or two roommates.

Though 45% of students who live in private-owned housing facilities also reside in either four or five in a room, the amenity gap existing between what students want and what the private-owned housing facilities offer is considerably low (unlike university-owned housing units). Therefore, given the benefits in housing amenities, the 45% of students living in either four or five in-a-room housing units in privately-owned housing facilities is unsurprising. Figure 6 below maps out the amenity gap between students of these seven tertiary institutions and the respective housing facilities available for a graphic validation.

Figure 6– Availability & Quality of Amenity and Services Gap Among the Seven Tertiary Institutions Being Investigated.

Source – Author's Analysis on Data from Questionnaire Feedback

<i>Topmost Needed Amenities and Services from Student Perspective</i>	<i>Student Rating on Relevance of these Amenities and Services</i>	<i>Student Rating on Availability and Quality of these Amenities and Services in University- Owned Housing Units</i>	<i>Student Rating on Availability and Quality of these Amenities and Services in Privately- Owned Housing Units</i>	<i>Availability & Quality of Amenity & Services Deficit in University- Owned Housing Units</i>	<i>Availability & Quality of Amenity & Services Deficit in University- Owned Housing Units</i>
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<i>Quality Internet Connectivity</i>	72%	11.3%	15.8%	(60.7%)	(56.2%)
<i>Stable & Constant Water Supply</i>	71%	12.5%	30%	(58.5%)	(41%)
<i>Stable & Back- Up Power Supply</i>	66%	16%	24.7	(50%)	(41.3%)
<i>Good Security</i>	65%	17.8%	19.6%	(47.2%)	(45.4%)

Inferring from figure 6, it is evident that the students of these seven universities have a high relevance rating of the four amenities and services they ranked.

Unfortunately, both the university and private-owned facilities across selected institutions have significant student expectation deficits (higher in university-owned housing facilities). The student expectation deficits indicate that the present tertiary institution housing space across these seven schools has not fully hatched their innovation capacity ceilings. Since the private-owned housing units seem to be the closest to meet student expectations, the higher percentage distribution of students in private-owned housing units is of zero shock. Furthermore, with the majority of university-owned residents (52%) being first years, it is evident that a significant portion of freshmen students, probably due to already known information, prefer to start their tertiary education from privately-owned housing units from the onset. Again, the 52% majority (freshmen students being key occupants of university-owned housing units) could mean continuing

students leave university-owned facilities after their first year, possibly because their housing expectations have not been met. This assertion is consistent with the realization that just 18%, 23%, and 8% of university-owned housing unit residents are second-year, third-year and final-year students. This realization, however, is in sharp contrast (as expected) with the respective 63%, 17%, 15% and 5% first year, second year, third year and final year student group distribution in private-owned facilities.

Next, this study realizes that an estimated 26% of students across the seven universities under review either commute from home or live with friends or relatives. Figure 7 in the appendix section shows the percentage distribution of specific reasons, which aligns with why 26% of the sample size commute from home. Inferring from figure 7, the primary factor influencing students' decision to commute from home to their respective campuses daily is attributed to limited hostel options – representative of evidence validating the need for additional tertiary student rental housing units in the selected institutions.

Next, the in-person interviews with private hostel managers also revealed that given the tertiary institutions' growing yearly admission intake and their inability to house their students, the student rental market was expansive. As such, there seems to be a constant demand all year round. The private hostel managers engaged all seemed to agree that though location was a critical success factor in the market, the competition was not intense due to the demand for student-rental housing always on the ascendency. However, the private hostel managers acknowledged that customer satisfaction was integral in the market. Having product offerings that met the market's expectations allowed them to have pricing leverages over the students. Despite the lucrative nature of the student rental housing market, all private hostel managers engaged complained about poor student behaviour. 100% of all private hostel managers engaged had a rule book to guide behaviour within

the respective hostel facilities. However, private-owned hostel managers engaged acknowledged that the flexibility in these rules across the student rental market could sometimes serve as a product differentiation strategy for competitors. However, about 40% of the hostel managers seemed adamant about these product differentiation benefits as they had observed a strict rule book system.

From these interactions, it is deduced that there is an apparent problem of limited student housing across the selected tertiary institutions. It is also evident that there is a demand for price-sensitive student housing products that meet student expectations in the form of amenities and proximity to lecture halls and groceries. This demand brings to bear the opportunity gap which EPL can leverage. The next section draws key insights from the data analysis in writing a comprehensive market research report of the tertiary student rental housing market.

4.2 Summary of the Market Research Component of the Business Feasibility Research Report.

Despite the glaring gaps in the student rental housing market currently, market intelligence gathered during the market research indicated that the student rental market has significantly evolved over the last decade. There are two main reasons for these advancements: (a) the introduction of novel tertiary institution programs and (b) the proactiveness of the private sector towards improving the Ghanaian educational index by investing and starting tertiary institutions other than existing ones owned by the government. Currently, the selected tertiary institutions have a combined student population of 70 000 students, with Legon, UPSA & GIMPA recording the highest number of students. Unfortunately, the rise in demand for tertiary education has poorly matched the supply of student rental facilities. For instance, UPSA's Business Development Manager indicated that while the school had diversified its student programs to increase its

population to 15 000+, it had housing facilities to accommodate just 1,300 students, representative of a 91.3% deficit. A similar phenomenon is observed with schools like Gimpa, Legon and UPSA. Schools like Lancaster, Knustford, Radford & Webster, which have zero university-owned housing, also face similar student rental challenges. The critical difference is that GIMPA, Legon & UPSA have at least been able to meet (however insignificant) some level of housing demand. Thus, the glaring deficits have served as an incentive for private sector players to enter the tertiary student rental housing market.

Interactions with ten existing players in the student rental market at the tertiary level indicated that though there was a market-entry incentive in the form of unending rising demand, access to capital almost always served as a barrier to entry for potential market entrants. For existing market players, access to capital was a disincentive to increasing the number of properties they owned. According to the ten existing student rental market players engaged in this study, the volatility of interest rates within the Ghanaian macro-economic space made loan facilities to support their ventures a disguised curse. Thus, while 60% of the existing market offerings ranged from SSNIT investments, combined partnerships (local and foreign) and individual investments, about 40% of the current market offerings were conversions of townhouses and semi-detached houses. Further interactions with these market players revealed that the high market entry costs and operational costs stifled innovation strategies to put up high-rise buildings and even apply advanced building technologies like artificial intelligence, building information monitoring, among others, during construction.

Matching these student rental facilities trends from the supplier side to that of the consumers indicated a strong demand for student housing facilities on or near the campuses of the selected tertiary institutions. Figure 1.1.1 in section 1 of the Business Feasibility Research Report shows

that 75% of the 506 valid respondents rated having housing on or near their campuses a 5-star between 1-star to 5-star range (5-star depicts high importance), with just 2% giving a 1-star rating (no importance). This percentage distribution of figure 1.1.1 in the Business Feasibility Research Report further suggests that a strategic location for housing facilities is likely to be a market key success factor since 92% (5-star and 4-star ratings) desire a facility near their respective institutions. Figure 1.1.1 in the Business Feasibility Research Report indicates a meager 5% have a neutral stance on their housing facility's proximity to their campuses (3-star rating). This 5% could represent students whose lecture schedules require them to be on campus for only specific days of the week.

Section 2.0 of the Business Feasibility Research Report gives a holistic overview of who potential tenants of the student rental housing market are. This section takes an intentional interest in the fundamental features of the identified market. Additionally, to enhance easy apprehension of the findings, analyses hereafter are made according to the grouped geographic zones as represented by table 1 in chapter 1. GZ1 is representative of schools like Lancaster, Webster, Radford and Knustford. Within this geographic zone, it is well-identified that consumers (students) are populated within an age range of 16 – 30 years. From figure 1.1.2 in the Business Feasibility Research Report, it is evident that students within an age range of 16 – 20 years are majorly populated within GZ1.

Based on critical market data, it is observed that these age range student populations have a student program-type diversity with 50% (the majority) being Bachelor of Science programs which is inclusive of courses like computer science & mathematics, health science & technologies, among others. Postgraduate offerings are not a famous practice within this geographic zone, with a combined percentage of 3% (Master of Science, Master of Arts & Ph.D.). Therefore, the student

rental housing consumers in this zone spend an average of four years at their institution since the majority offer degree-typed program studies.

Based on the interactions with the existing market players, it was revealed that despite the tenant-diversity of occupants, there was a particular preference for (a) undergraduate students first before (b) postgraduate students. Thus, all occupants were mandated to provide their respective undergraduate student identification cards to validate their undergraduate tertiary institution membership before being given a housing facility. Current market players opined that though tertiary education had an immense form of freedom, the preference for undergraduate students was linked to the fact that hostel managers could exercise some form of control over undergraduate students. Unlike students offering post-graduate studies who are most likely to move into these properties with their families or receive frequent weekend visits from their spouses, a phenomenon frowned upon by 100% of private hostel facilities in this zone. The preference for undergraduates explains why the majority of the students within these zones were found in a 16 – 20 age range pursuing undergraduate studies. Logically, GZ1 has an estimated available size of 3 600 students. With figure 1.1.5 from the Business Feasibility Research Report displaying current housing arrangements of GZ1, the unmet demand from students is pegged at 50% since 50% of students in GZ1 commute to campus from their respective homes daily.

GZ2 is representative of UPSA. Within this geographic zone, unlike GZ1, where the age range was most populated between 16 – 20 years, it is well-identified that consumers(students) in GZ2 are settled within an age range of 21 to 25 years. Based on market intelligence gathered, it is observed that GZ2's age range student populations have an evenly spread student program-type diversity; with 24% (the majority) being Master of Arts, Master of Science and Bachelor of Arts programs, unlike GZ1, where there is a program-offering imbalance with 50% of GZ1 population

offering Bachelor of Science. Postgraduate offerings are a famous practice within GZ2, with a combined percentage of 48%. Just like GZ1, there were 0 cases of Ph.D. program offerings recorded in GZ2.

Based on the interactions with the Business Development Officer at UPSA, it was revealed that the institution was a professional one. Thus, it offered professional courses in fields like marketing, human resource, among others. The professional feature of UPSA explains why 48% of GZ2s respondents offer post-graduate courses. With an immense preference for undergraduate students being an observed market trend, this study alludes that 48% of students in GZ2 do not live in or around GZ2. Thus, the perceived 48% do not makeup GZ2's student rental market. For similar reasons in the GZ1 market, consumers of the student rental market in GZ2 were also mandated to provide their respective student identification cards to validate their undergraduate tertiary institution membership before their housing needs were met.

In conclusion, GZ2 has an estimated available size of 15 000+ students. With figure 1.1.8 from the Business Feasibility Research Report displaying current housing arrangements of GZ2, the unmet demand from students is pegged at 21%, since 21% of students in GZ 2 commute to campus from their respective homes daily. Given the myriad of student rental housing facilities spread across GZ2, the 21% unmet demand is perfectly understandable. However, the 21% figure may experience a dip in the coming years as existing players intend to expand their portfolios to match the demand.

GZ3 comprises two tertiary institutions, (a) legon and (b) GIMPA. In GZ3, as displayed by figure 1.1.9 in the Business Feasibility Research Report, it is evident that the age range of GZ 3 market consumers(students) yields an even distribution, unlike age range distribution in GZ1 and GZ2. However, given that these institutions are the two oldest tertiary institutions in Ghana

(Gimpa, 2021), these institutions have managed to leverage partnerships with the government to expand academic facilities and program-offering within the last five decades. Thus, these institutions are denser in terms of tertiary education accessible to the Ghanaian child.

Out of the 240 respondents recorded within this zone, figure 1.2.0 from the Business Feasibility Report indicates that the zone had 0 participants offering post-graduate courses. With 32% & 18% of the students offering Bachelor of Science and Bachelor of Arts respectively, 50% of student program offerings were skewed towards Bachelor of Laws. Like in the previous two zones discussed above, post-graduate offerings are not a famous practice within GZ3. However, the homogeneity among program offerings across the 240 respondents is nothing to be wary of, considering that the existing student housing rental players within this zone also have a significant preference for undergraduate students. Therefore, student rental housing consumers in this zone also spend an average of four years at their respective institutions since the majority offer degree-typed program studies.

Logically, GZ3 has an estimated available size of 50,000+ students. With figure 1.2.2 from the Business Feasibility Report displaying current housing arrangements of GZ3, the direct unmet demand from students is pegged at 17%, since 50% of students in GZ3 commute to campus from their respective homes daily. However, this 17% is not a true reflection of the size of the unmet demand within this zone. This is because there is a high cognitive dissonance stemming from the unmet expectations of consumers (the students) and the already existing housing facilities. Thus, with figure 1.2.3 from the Business Feasibility Research Report indicating that 75% of students occupying university-owned hostels are willing to move to private hostel options because of better amenity offerings from the private-owned hostel facilities, there is an indirect increased unmet demand. However, these movements would also be incentivized by moderate pricing of the

private-owned facilities as data gathered within this zone indicated that consumers were highly sensitive to pricing. Also, the 52% market share occupied by private hostel owners is a mirror image of the private-sector dominance within this zone.

Section 3.0 of the Business Feasibility Research Report sheds light on the depth of the selected tertiary institution's student rental housing market. There was a highlighted demand for additional housing units to accommodate student needs realized from interactions with officials of these tertiary institutions. However, engagements with major market players across the three geographic zones indicated that most of the consumers on the market lacked sufficient funds to pay for the kind of amenities they demanded. Market players in GZ3, for instance, highlighted the yearly payment of rent instead of their preferred choice of semester-based rent payment. Given that all the institutions in the identified geographic zones are located in prime areas like East Legon, Legon and the Madina environs, the costly nature of constructing and maintaining properties in these plush areas may account for the seemingly soaring pricing of student housing units across the selected institutions. Based on these insights across all three zones, the study deduces that there is gross demand for moderately priced student rental facilities that fully meet the market's perceived values; thus, these prospective tertiary student housing units should be relatively cheaper than those on the current market. The discovery further heightens the opportunity gap in the student rental market, which can be explored by private sector real estate developers and investors.

Moving on to section 4 of the Business Feasibility Research Report, perceived values of a market represent the key elements that are pivotal to the existing student rental market across the selected institutions and the unmet demand from these institutions. Perceived market values indicate to market analysts what exactly serves as motivation for market consumers to make product purchasing decisions. Analysis of table 1.1.4 from the Business Feasibility Report shows

that room-type is the most perceived value on the market. Given that students have a degree of liberty during their tertiary institution education, this study alludes that students are willing to share rooms with usually one person (two at most) that they can easily relate to. Thus, the 25% allocation towards room-type being a perceived market value is unsurprising. Other pivotal factors which the market valued most were exclusive study spaces, kitchen spaces, bathroom & toilet facilities, good security & quality internet connectivity, affordable pricing and proximity to town & campus.

Section 6 of the Business Feasibility Research Report discusses market positions and occupancy rates of competitors in the market. Competition in the student rental housing market constitutes three types (a) university-owned housing and (b) private-owned housing and (c) students who commute from home. For this study, the project scope and size made a daunting task of identifying relevant market positions of existing competition. Thus, the respective market positioning was determined by accessing to what extent existing product offerings across geographic zones fully meet the market's most perceived values of (a)proximity to town and campus, (b)exclusive study spaces, kitchen spaces & bathroom and toilet facilities, (c)two-in-a-room units(d)affordable pricing (e) good security and quality internet connectivity. To assess the extent to which existing product offerings across geographic zones fully met the market's perceived values, the study employed a value curve as drawn in figures 1.2.4, 1.2.5 & 1.2.6 of the Business Feasibility Research Report. On the vertical axes is a scale with a 0 – 5 range which measures the competition's ability to meet the market fully perceived values; with 0 indicative that competition can barely satisfy market perceived values and 5, telling that the competition can comfortably satisfy market perceived values. Based on figures 1.2.4,1.2.5 & 1.2.6 from the Business Feasibility Research Report, it is evident that across all three geographic zones, existing market competition does not fully satisfy the perceived values of the market. However, overall,

the private-owned housing options meet market perceived values a lot better than university-owned housing alternatives. University-owned housing conveniently satisfies affordability and proximity metrics over an 80% - 100% percentile. Interactions with university officials validate this trend. Across all three zones, university officials indicated that the tertiary institution had an inherent obligation to ensure the housing needs of students. The inherent responsibility of tertiary institutions to bridge the accommodation gap stemmed primarily from parental pressure through constant accommodation inquiries. University-owned housing options thus took a socialist approach in tackling the student housing deficit. In this regard, the university-owned facilities were not profit-motivated, instead socially driven; and this explains why university-owned facilities scored high on the affordability metric. In tandem with the socialist approach, university-owned facilities had more four-in-a-room units to accommodate more students. However, it is imperative to indicate that the socialist method of university-owned housing initiates a trade-off between the comfort(quality) of amenities and available space. The trade-off explains the low – averaged score of the university-owned housing facilities on the exclusivity of kitchen space, study space, bathroom & toilet space, good security & quality internet connectivity and two-in-a-room type units across all the three geographic zones.

Next, given that interviews with university officials and private-owned facilities across all the three geographic zones strongly indicated that location was a prime element for market success, it is unsurprising to observe scores within the 80th – 100th percentile for proximity to campus and town by university-owned facilities across all three geographic zones. However, in sharp contrast, conversations with private-owned facilities across the zones indicated 100% profit-making features instead of being socially driven, unlike the university-owned facilities. Unlike the university-owned, the private-owned facilities did not compromise on quality, especially as high

levels of quality were a means of price justification on the market. In view of this, it is unsurprising to realize a 60th – 100th percentile score for market perceived values like the exclusivity of kitchen space, study space, bathroom & toilet space, good security & quality internet connectivity and two-in-a-room type units across GZ1 and GZ3. This highlights the trade-off between comfort(quality) levels and the space available, suggesting that across GZ1 & GZ3, private-owned facilities preferred to maximize comfort instead of space. These private-owned facilities had a more diverse room-type unit mix ranging from one-in-a-room type units, two-in-a-room type units, three-in-a-room type units (rare cases) and four-in-a-room type units. Though comfort metrics for GZ2 were low in the value curve, given that an estimated 65% of the GZ2 market seemed unbothered, the private-owned facilities in this zone currently enjoyed some undue profit benefits.

Logically, based on the value curve graphs, it is evident that current market competition has not fully maximized the market's perceived values, presenting a significant opportunity for EPL to create value-oriented product offerings targeted at the tertiary student rental housing rental market across these selected institutions.

Next, from table 1.1.6, the Business Feasibility Research Report estimated occupancy rates across the three geographic zones. The occupancy rates in zone 1, 2 & 3 were 70%, 86% & 95%. This indicates that student rental facilities across the three zones are most likely assured of tenants each academic calendar, with the highest assurance coming from GZ3, giving the zone's 95% occupancy rate.

Moving on to section 7 of the Business Feasibility Research Report, the study gleaned insights into the available student housing projects in the pipeline across selected institutions. According to table 1.1.7 from the Business Feasibility Research Report, while institutions in GZ3 do not have any pipeline student housing projects, institutions in GZ 1 & GZ2 do have some

pipeline projects. However, given that institutions in GZ3 are government-owned, this study believes that despite the 0 pipeline projects in GZ3, the government can easily mobilize funds to put up additional accommodation.

4.3 Conclusions Drawn from the Market Research Study Component of the Business Feasibility Research Report

Section 9 of the Business Feasibility Research Report brings to bear the conclusions drawn from the findings of the market research study section of this Business Feasibility Research Report. Deductions made from the market research study are categorized into (a) the target market, (b) market positions & differentiation, (c) price points and (d) occupancy rates.

The target market draws conclusions on which combination of geographic zones is suitable for EPL's prospective construction, assuming EPL makes a market entry. Based on the analysis made as per the data collected, the target market for this project is GZ3 which consists of tertiary institutions like Gimpa and Legon. The 50 000+ student population size and the 60% + unmet demand in GZ 3 makes this zone the most populated and the zone with the highest unmet demand in contrast to the 15,000+ & 3,600 population sizes with 21% & 50% unmet demand in GZ2 and GZ1 respectively. Inferring from figure 1.1.9 from the Business Feasibility Research Report, the market in GZ3 has an even age range percentage distribution between 16 – 30 years. Regarding degree types, with 32% & 18% of the students offering Bachelor of Science and Bachelor of Arts respectively, 50% of student program offerings are skewed towards Bachelor of Laws. The homogeneity among program offerings in GZ3, as figure 1.1.7 from the Business Feasibility Research Report displays is not a market threat, considering that the existing student housing rental players in GZ 3 have a significant preference for undergraduate students. Therefore, the buyers in

the GZ3 market spend an average of four years at their respective institutions since the majority offer degree-typed program studies.

The market position for the prospective development of a 500 – 600 student rental housing unit in GZ3 is to provide all the five-core market perceived values of (a)proximity to town and campus, (b)exclusive study spaces, kitchen spaces & bathroom and toilet facilities, (c)two-in-a-room units(d)affordable pricing (e) good security and quality internet connectivity and even more. This prospective development should meet market affordability as units will be priced based on the market's willingness to pay a GHC 2 000 – GHC 3 000 yearly rent. As rightly informed from the above discussions, this study alludes to GZ 3 as the most suitable zone for this prospective development. According to geographic population demographic analysis, GZ 3 has the largest student population and the most significant percentage of unmet demand. Should EPL assume market entry in GZ3, EPL would have used the geographic population demographic insight to differentiate itself through its location strategically. Additionally, by delivering product offerings with optimal market-perceived values, EPL assumes a primary market position relative to existing competition in GZ 3.

The price point is representative of how best monetary value can be captured from the target market. EPL's prospective product offerings should be moderately priced to decrease vacancy losses. This aligns with the affordability metric being a critical fundamental success factor for the target market. Table 1.1.8 from the Business Feasibility Research Report denotes price points which GZ 3 is willing to pay (WTP) for based on room types which significantly satisfies market values perceived. Accessing table 1.1.8 from the Business Feasibility Research Report indicates that 18.5% of GZ3 respondents preferred one-in-a-room type units and their WTP had a mean price point range of GHC 4 000 – GHC 5 000. Next, 74% of GZ3 exhibited a preference for

two-in-a-room type units and had a WTP mean price point range between GHC 2, 600 – GHC 3, 500. Lastly, 7.5% of the GZ3 market preferred three-in-a-room type units and had a WTP price range between GHC 1, 600 – GHC 2, 500. Thus, it is not enough for EPL to locate prospective product offerings in GZ 3. To attain maximum monetary value in GZ3, EPL's price points must be approximately similar to the mean price points that the GZ 3 market is willing to pay based on the room type.

In terms of occupancy rates, GZ 3's already calculated occupancy rate from section 6 of the Business Feasibility Research Report was used. Given that GZ3 is the ideal target market, the estimated occupancy rate is 95%.

The following section focuses on the second key element of a business feasibility research, the financial projection analysis. In this section, the study uses insights from the market research to make a financial projection assessment giving EPL's likelihood of market entry into GZ3.

4.4 Summary of the Financial Projection Analysis Component of the Business Feasibility Research Report.

As indicated by Thompson (2005) in chapter 3, a financial projection analysis uses vital insights gained from the market research to assess the market's profitability critically. It is imperative to indicate that the financial projection analysis is done in tandem with specific recommendations from EPL. After determining the project development cost, EPL required a 15-year net-income cashflow projection to gauge how profitable market entry into GZ3(the ideal market as informed by market research data) will benefit EPL. It is critical to state that findings from the market research directly informed the financial projection analysis.

Despite the 15-year projection made, this study considered three leading real estate financial metrics in its decision making, namely: equity multiple (EM), return on investment (ROE) and internal rate of return (IRR). Per industry norms, these metrics are the topmost metrics real estate investors and developers analyze to determine market entry and market profitability. The EM measures how much cash a real estate investor will get back from a given real estate deal. Thus, the EM in this study informs EPL how much cash they will make if they make market penetration into GZ3. Next, the ROE indicates a business's profitability comparative to the business's total equity investments. Thus, the ROE in this study is critical in informing EPL on the extent to which their equity investments will be profitable if market entry into GZ 3 is made. Lastly, the IRR is a percentage metric of the rate earned on each dollar EPL invests for the period of investments after the firm has made market penetration into GZ3. Based on industry knowledge, it is imperative to indicate that the IRR and EM complement each other – while the EM does not consider the time value of money, the IRR does.

Additionally, while the IRR does not describe the total cash a given investment will return, the EM does precisely so. Roping in these three metrics with real estate decision making, an EM greater than 1.0x means a real estate deal is financially feasible. It indicates that the real estate investor is making more cash than initial investments. With ROE indicative of how EPL can use its equity investments to generate profits (assuming market entry into GZ3), the industry-accepted ROE is between 15% -20%. ROEs that fall within this range are considered financially attractive as it implies that the given firm can effectively channel its equity investments into profit. Lastly, an IRR between 10% - 20% is deemed worthwhile across the real estate industry as it denotes whether the percentage rates earned on each dollar of EPL investment yield attractive returns.

Next, it is pivotal to indicate that the financial projection was first performed with an initial 40% equity and 60% debt capital split, as recommended by EPL (scenario 1). However, EPL yields net income loss cashflows with this strategy. Thus, the researcher employed two alternative capital split strategies (scenario 2 and scenario 3) to further probe EPL's financial feasibility in making a market entry in GZ3. In scenario 2, the financial projection analysis assumed a capital split of 100% equity. Thus, the total project cost of \$ 23341000 would be entirely financed by EPL. In scenario 3, the study found EPL's optimal capital split for this prospective project. Drawing from a corporate finance repository, an optimal capital split represents the right mix of debt and equity in a project which yields the maximum returns or minimal loss. Per the financial analysis modeled in Microsoft Excel, EPL's optimal capital split is 10% debt and 90% equity. This means that at 10% debt and 90% equity, EPL makes the least loss from this prospective project. In addition to the optimal capital split, the financial analysis proposed an interest-only loan approach on the debt component instead of an amortized debt. The difference between an amortized and interest-only debt is, while an amortized debt requires EPL to make equal amounts of repayment (principal & interest) across the 15 years, in an interest-only loan option, EPL makes equal interest repayments on the debt and in the last year of holding the debt, EPL pays the interest for that period plus the principal. The study believes that an interest-only debt strategy will ease the repayment pressure on EPL (given that only interest payments are required). This will allow EPL to invest its available funds into other short-term projects to generate profits towards servicing the principal amount outstanding in the last year of holding the debt.

Given these insights, table 2 below summarizes how these three main decision metrics will perform over 15 years, assuming EPL makes market entry into GZ3 per each capital split strategy employed.

Capital Split Scenarios	Decision Metrics	Decision Metrics Output
Scenario 1(40% equity, 60% debt)	EM	0.13x
	ROI	-1.82%
	IRR	-4%
Scenario 2(100% equity)	EM	0.61x
	ROI	0.61%
	IRR	-4%
Scenario 3(optimal debt level & interest-only loan strategy)	EM	0.39x
	ROI	0.26%
	IRR	-14%

Table 2: A Table Indicating Decision Metrics of the Three Capital Split Scenarios

Source – Author’s Financial Projection Analysis

Scenario 1 denotes an ROE of -1.82%, implying that equity invested by EPL into the prospective project is unproductive. Equity multiple is 0.13x which means EPL is making less cash than they invested throughout the forecast. The -4% IRR is representative of EPL’s unprofitable returns on its investments. In scenario 2, EM & ROE are positive. An ROE of 0.61% indicates that EPL is inefficient with its equity capital per the prospective project. The 0.61x(less than 1) EM depicts that EPL will get back less cash than its initial capital investment over the 15 years. Lastly, the negative-yielding IRR means that the aggregate amount of net income cash flows over the 15 years is significantly less than the EPL’s initial investment of \$23 341 000 invested. Lastly, analysis of scenario 3 denotes an ROE of 0.26%, implying that equity invested by EPL into the prospective project is unproductive, given the 15% - 20% industry ROE benchmark. EM of

0.39x indicates that EPL gets back significantly less cash than its initial capital investment. Lastly, the -14% IRR depicts unprofitable returns on EPL's investments, just like in scenario 1

The decision metric outputs for all three modeled capital splits indicate that market entry by Equilibrium into GZ3 is not financially feasible.

4.5 Conclusions from the Financial Projection Analysis

Having undergone the financial projection analysis, it is evident that EPL's entry into the student rental housing market, ideally GZ3(as duly informed by the market research), is not financially profitable to EPL over the 15-year projection recommended by EPL. In scenario 1(60% debt and 40% equity capital split), EPL makes net losses over the 15 years. Given this, it is not surprising to realize for scenario 1; EM is as low as 0.13x while ROE is -1.82% and IRR is -4%. In scenario 2(all-equity capital split), though EPL makes positive net income cashflows, these cashflows are significantly less than the total project cost. Thus, the 0.61x EM, 0.61% ROE and -4% IRR for scenario 2 are unsurprising. An optimal capital split, allowing EPL to go in for a 10% credit facility and 90% equity, interlaced with an interest-only loan structure, the firm makes positive cashflows. However, just like scenario 2, these cashflows are significantly less than the total project cost, as evidenced by the 0.39x EM, 0.26%ROE and -14% IRR. Across all scenarios, the study realizes that EPL's NOI is quite a high percentage (79%) of its EGI. This study strongly believes a reduced expense will reduce NOI, consequently increasing year on year EGI. Additionally, the market's unwillingness to pay higher price points for their market perceived values, interlaced with the yearly frequency of rental income instead of a semi-annual frequency, is primarily responsible for EPL's low EGI across the years.

4.6 Who Should Use This Business Feasibility Research Report and When Should It Be Used

EPL is the key user of this Business Feasibility Research Report in conjunction with potential partner development team members. Given the unit-mix types detailed in this business feasibility research report, this tool will be vital in mapping out a fundamental design for this prospective project. The Business Feasibility Research Report will help EPL in attempting to meet market perceived values. Additionally, this Business Feasibility Research Report will be instrumental in determining whether or not EPL could make market entry into GZ3 of the student rental housing market. Logically, the components of this Business Feasibility Research Report will inform EPL on market price point, product offerings and occupancy rates should EPL decide to make market entry.

It is imperative to state that given the financial unfeasibility of EPL making market entry into GZ3, the market entry assessment into selected tertiary institutions in Accra to develop a 500-600 student rental housing unit by EPL is unfeasible. Thus, an implementation table is unrequired.

CHAPTER 5: KEY INSIGHTS, RECOMMENDATIONS & CONCLUSION

Having conducted this feasibility study primarily to assist EPL in making a go or no-go market entry decision into the student rental housing market across the selected tertiary institutions, this chapter briefly highlights the key insights, recommendations and conclusions based on the findings of the feasibility study.

5.1 Key Insights

The goal of the business feasibility study was to provide market and financial intelligence on selected tertiary institutions, which will assist EPL in making a market entry decision of the tertiary student housing market. After synthesizing literature and analyzing the 506 student responses from the questionnaires and holding interview sessions with ten private-owned facility managers and university officials responsible for student housing, the following insights were realized:

- A. The lack of student housing across the three zones is a dire need for the market, evidenced by the market's 95% rating to affirm that having a hostel facility on or near their campus is of substantial relevance.
- B. Student rental housing is patronized by all age group ranges and degree types across all three geographic zones. However, while students championing demand for rental accommodation fall within a 21 – 25 age range, private hostel owners have a high preference for undergraduate students.
- C. Based on a 500-sample size of present and potential tenants, it is realized that 46% of the entire student housing market across all three zones prefer off-campus facilities (mainly because of the amenity offering gap that exist between university-owned hostels and private-owned hostels), 27% prefer on-campus facilities and 26% prefer to commute from their respective homes.

D. Across all the geographic zones visited, it was realized that 100% of selected institutions focused on the expansion of educational amenities, given the growing population sizes of these institutions stemming from the increased diversity in program offerings. Additionally, it was realized from the private hostel manager's perspective that the focus of these selected institutions on educational amenities created a market entry opportunity for private-owned facilities.

E. Based on a 500-sample size target, this study realized that there are five core perceived values of the market; (a)proximity to town and campus, (b)exclusive study spaces, kitchen spaces & bathroom and toilet facilities, (c)two-in-a-room units(d)affordable pricing (e) good security and quality internet connectivity.

F. Based on the study's findings, it is realized that while GZ3 has the highest occupancy rate, GZ1 and GZ 2 have occupancy rates of 70% and 86%, respectively. It is critical to indicate that the highest occupancy rate possible is 95%. This is because students have a cumulative four-month vacation period per the tertiary institution academic calendar – this allows for a vacancy loss during these periods, estimated to be 5%. Lastly, given that the selected institutions are located in East Legon, Legon and the Madina vicinity, these areas are the prime locations for existing private hostel facilities.

G. Based on the study's findings, it is realized that institutions in GZ3 do not have any pipeline student housing projects. Unlike GZ3, institutions in GZ 1 & GZ2 have some pipeline projects with estimated project completion timelines of August 2021 and December 2021, respectively. However, given that institutions in GZ3 are government-owned, this paper believes that despite the 0 pipeline projects in this zone, the government can easily mobilize funds to put up additional accommodation.

H. For EPL to capture value in the student rental housing market, the client needs to develop facilities in GZ 3. This is because GZ 3 has the highest population size (50,000 +) and highest unmet demand (60%+), compared to GZ1 and GZ2's 3, 600 & 15, 000+ population sizes and 50% & 21% unmet demand. Additionally, the GZ3 market exhibited a higher WTP relative to the market in GZ1 & GZ2.

I. Despite the market research findings affirming GZ3's market attractiveness, the financial projection analysis exhibits a high rate of unprofitability should EPL make market entry. The unprofitability is primarily attributed to the market's unwillingness to pay higher price points for their market perceived values, interlaced with the yearly frequency of rental income instead of a semi-annual frequency.

5.2 Recommendation

The following recommendations are offered based on the findings made from this business feasibility study. Additionally, recommendations are discussed regarding further research and analysis in relation to making an informed decision on whether or not EPL's entry into the tertiary student rental housing market is feasible.

1. Deduced from the results of this feasibility study, EPL's intention of making entry into the tertiary student rental housing market in GZ3 would be financially unprofitable to the firm given the low-price points of the market. Thus, given EPL's existing profitability in residential projects, it will be prudent for the firm to diversify into other sections of Ghana's residential market instead of the tertiary student rental housing market.

2. Next, despite the financially unattractive scope of GZ3, partitions exist in the market with especially, with 5.83% of GZ3 market indicating they would like to pay a price point range of

GHC 6,000 – GHC 7,000(Field Data, 2021). Thus, instead of looking to service the entirety of GZ3, EPL could decide to focus on this high-end of the market and create a product offering which meets all the core perceived values.

3. Again, based on field data, it is evident that 57% of the market in GZ3 would like to pay a price-point range of GHC 2 000 – GHC 3 000. With the emergence of ecofriendly and cost-effective means of property construction like container housing, EPL could decide to make GZ3 market entry by employing alternative cost-effective means of building. This will drastically reduce EPL's hard costs and allow EPL to service the low-end section of GZ3 market.

4. Given the colossal capital requirement required to make market entry into GZ3, the client can leverage his expensive social capital of local and foreign real estate developers who can act as partners to deliver on this project.

5.3 Conclusion

The study's primary aim was to provide EPL insights on the tertiary student rental housing landscape across the selected tertiary institutions. This Business Feasibility Research Report has fully met the study's goal by providing a EPL with depth market and financial intelligence. Thus, the study's findings will be pivotal in assisting the EPL to make a data-driven decision concerning the development of a 500 – 600 student rental housing unit across the selected tertiary institutions.

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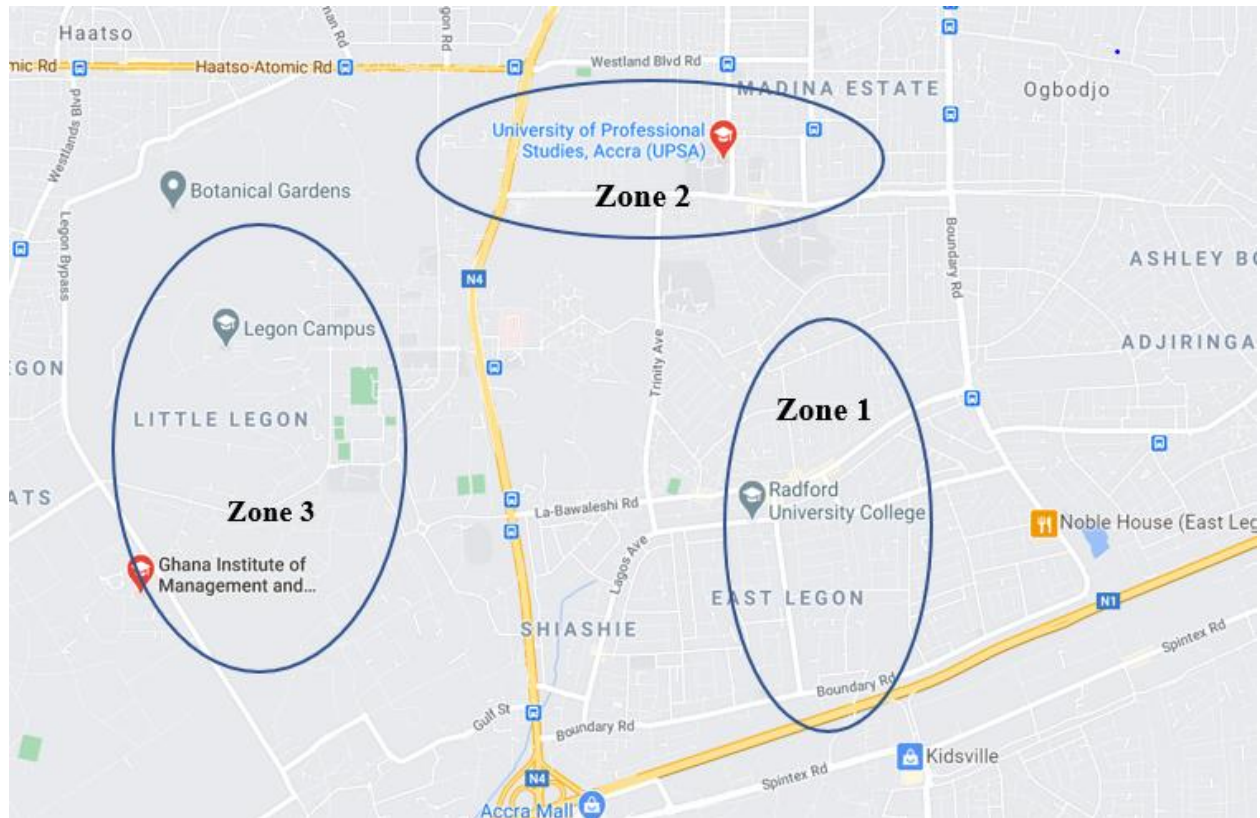
APPENDICES

Appendix 1

<i>Proposed Rationale for 26% Percentage Distribution of Students Who Commute from Home</i>	<i>Percentage Distribution</i>
<i>Lack of hostel options</i>	<i>35%</i>
<i>Exorbitant housing prices</i>	<i>27%</i>
<i>Convenience</i>	<i>24%</i>
<i>Health reasons</i>	<i>6%</i>
<i>Other</i>	<i>8%</i>

Figure 7 – Proposed Rationale for 26% Percentage Distribution of Students Who Commute from Home.

Source – Author’s Analysis of Data from Questionnaire Feedback



**A Business Feasibility Study for Equilibrium Partners: Accessing Market Entry
into Selected Tertiary Institutions in Accra for the Development of a 500-600
Student Rental Housing Unit**

Samuel Safo Owusu-Acheaw

April 2021

TABLE OF CONTENT

Business Feasibility Research Report	9
1.0 Trends in Student Rental Housing Market across the Selected Tertiary Institutions.....	9
2.0 Current Student Rental Housing Market across the selected Tertiary Institutions	11
3.0 Depth of the Selected Tertiary Institution’s Student Rental Housing Market	24
4.0 The Perceived Values of the Market	25
5.0 Strengths, Weaknesses, Opportunities & Threats (SWOT) Analysis	26
6.0 Market Positions, Price Points & Occupancy Rates of Competitors	29
7.0 Available Student Housing Projects in the Pipeline.....	39
8.0 Opportunities Presented by the Competitors.....	42
9.0 Conclusions Drawn from the Market Research Study	43
9.1 The Target Market	43
9.2 Market Positions & Differentiation	44
9.3 Price Point	44
9.4 Occupancy Rates	45
10.0 Financial Feasibility	46
10.1 Underlying Assumptions for Unit Mix.....	47
10.2 Unit Mix Metrics Assumptions	51
10.4 Capital Split Assumptions.....	58
10.6 Alternative Capital Split Strategy – Scenario 2.....	66

<i>10.7 Alternative Capital Split Strategy – Scenario 3.....</i>	<i>72</i>
<i>10.8 Who Should Use This Business Feasibility Research Report and When Should It Be Used.....</i>	<i>81</i>
APPENDICES	82

LIST OF FIGURES

FIGURE 1.1.1: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS OF THE IMPORTANCE OF HAVING A HOUSING FACILITY NEAR CAMPUS.	11
FIGURE 1.1.2: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS OF THE AGE RANGES OF GZ1 RESPONDENTS.	12
FIGURE 1.1.3: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS OF THE TYPE OF TERTIARY EDUCATION DEGREE OFFERED BY INSTITUTIONS IN GZ 1.	13
FIGURE 1.1.4: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS OF THE NATIONALITIES OF RESPONDENTS IN GZ1.	14
FIGURE 1.1.5: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS OF CURRENT STUDENT- HOUSING ARRANGEMENTS OF RESPONDENTS IN GZ1.	16
FIGURE 1.1.6: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS OF AGE RANGES OF RESPONDENTS IN GZ2.	16
FIGURE 1.1.7: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS OF THE TYPE OF TERTIARY EDUCATION DEGREE OFFERED BY GZ2.	17
FIGURE 1.1.8: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS OF CURRENT STUDENT- HOUSING ARRANGEMENTS OF RESPONDENTS IN GZ2.	19
FIGURE 1.1.9: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS OF THE AGE RANGE OF THE RESPONDENTS IN GZ3.	20
FIGURE 1.2.0: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS OF THE TYPE OF TERTIARY EDUCATION DEGREE OFFERED BY GZ3.	21
FIGURE 1.2.1: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS OF THE NATIONALITIES OF RESPONDENTS IN GZ3.	22

FIGURE 1.2.2: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS OF THE CURRENT HOUSING ARRANGEMENTS OF RESPONDENTS IN GZ3.	23
FIGURE 1.2.3: A PIE CHART INDICATING PERCENTAGE DISTRIBUTIONS RESPONDENTS IN GZ3, WILLING TO EITHER MOVE TO A PRIVATE-OWNED HOSTEL FACILITY OR REMAIN IN THEIR UNIVERSITY-OWNED HOSTEL FACILITY.	24
FIGURE 1.2.4: A VALUE CURVE GRAPH INDICATING THE EXTENT TO WHICH COMPETITION IN GZ1 SATISFIES THE MARKET’S PERCEIVED VALUES.	30
FIGURE 1.2.5: A VALUE CURVE GRAPH INDICATING THE EXTENT TO WHICH COMPETITION IN GZ2 SATISFIES THE MARKET’S PERCEIVED VALUES.	31
FIGURE 1.2.6: A VALUE CURVE GRAPH INDICATING THE EXTENT TO WHICH COMPETITION IN GZ3 SATISFIES THE MARKET’S PERCEIVED VALUES.	31
FIGURE 1.2.7: A BAR CHART INDICATING CURRENT MARKET PRICING AND THE WILLINGNESS OF CONSUMERS TO PAY FOR PRODUCT OFFERINGS THAT SATISFY MARKET PERCEIVED VALUES OF GZ1.	34
FIGURE 1.2.8: A BAR CHART INDICATING CURRENT MARKET PRICING AND THE WILLINGNESS OF CONSUMERS TO PAY FOR PRODUCT OFFERINGS THAT SATISFY MARKET PERCEIVED VALUES OF GZ2.	35
FIGURE 1.2.9: A BAR CHART INDICATING CURRENT MARKET PRICING AND THE WILLINGNESS OF CONSUMERS TO PAY FOR PRODUCT OFFERINGS THAT SATISFY MARKET PERCEIVED VALUES OF GZ1.	35
FIGURE 1.3.0 : A MICROSOFT EXCEL EXHIBIT OF UNIT MIX ASSUMPTIONS	51
FIGURE 1.3.1 : A MICROSOFT EXCEL EXHIBIT OF UNIT MIX METRICS ASSUMPTIONS	55
FIGURE 1.3.2: A MICROSOFT EXCEL EXHIBIT OF UNIT MIX ASSUMPTIONS	58

FIGURE 1.3.3: A MICROSOFT EXCEL EXHIBIT OF SCENARIO 1 CAPITAL SPLIT	58
FIGURE 1.3.4 : A MICROSOFT EXCEL EXHIBIT OF AMORTIZATION SCHEDULE	61
FIGURE 1.3.5: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT BASE YEAR PROJECTION	62
FIGURE 1.3.6: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 1 NET INCOME PROJECTION	62
FIGURE 1.3.7: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 1 NET INCOME PROJECTION	63
FIGURE 1.3.8: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 1 NET INCOME PROJECTION	63
FIGURE 1.3.9: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 1 NET INCOME PROJECTION	64
FIGURE 1.4.: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 1 NET INCOME PROJECTION	64
FIGURE 1.4.2: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 2 BASE YEAR NET INCOME PROJECTION	68
FIGURE 1.4.3: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 2 NET INCOME PROJECTION	69
FIGURE 1.4.4: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 2 NET INCOME PROJECTION	69
FIGURE 1.4.5: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 2 NET INCOME PROJECTION	70
FIGURE 1.4.6: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 2 NET INCOME PROJECTION	70
FIGURE 1.4.7: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 2 NET INCOME PROJECTION	71
FIGURE 1.4.8: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 2 DECISION METRICS	71
FIGURE 1.4.9: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 3	73
FIGURE 1.5.0: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 3 INTEREST-ONLY DEBT	75
FIGURE 1.5.1: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 3 BASE YEAR NET INCOME PROJECTION	76
FIGURE 1.5.2: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 3 NET INCOME PROJECTION	77
FIGURE 1.5.3: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 3 NET INCOME PROJECTION	77
FIGURE 1.5.4: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 3 NET INCOME PROJECTION	78

FIGURE 1.5.5: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 3 NET INCOME PROJECTION	78
FIGURE 1.5.6: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 3 NET INCOME PROJECTION	79
FIGURE 1.5.7: A MICROSOFT EXCEL EXHIBIT OF CAPITAL SPLIT 3 DECISION METRICS	80

LIST OF TABLES

TABLE 1.1.1: A TABLE DISPLAYING THE GENDER DISTRIBUTION OF RESPONDENTS IN GZ1.....	15
TABLE 1.1.2: A TABLE DISPLAYING THE GENDER DISTRIBUTION OF RESPONDENTS IN GZ2.....	18
TABLE 1.1.3: A TABLE DISPLAYING THE GENDER DISTRIBUTION OF RESPONDENTS IN GZ3.....	22
TABLE 1.1.4: A TABLE DISPLAYING A DISTRIBUTION OF THE MARKET PERCEIVED VALUES ACROSS ALL GEOGRAPHIC ZONES.	26
TABLE 1.1.5: SWOT ANALYSIS OF PROJECT	26
TABLE 1.1.6: A TABLE DISPLAYING THE OCCUPANCY RATES ACROSS ALL THREE ZONES.	39
TABLE 1.1.7: A TABLE DISPLAYING AVAILABLE HOUSING PROJECTS IN THE PIPELINE ACROSS ALL THREE ZONES.	40
TABLE 1.1.8: A TABLE DISPLAYING PRICE POINTS GZ3 IS WILLING TO PAY FOR BASED ON ROOM- TYPES WHICH SATISFY MARKET PERCEIVED VALUES.	45
TABLE 1.1.9: A TABLE DISPLAYING ASSUMED EXPENSES FOR CAPITAL SPLIT 1.	60
TABLE 1.2.0: A TABLE DISPLAYING ASSUMED EXPENSES FOR CAPITAL SPLIT 2.	68
TABLE 1.2.1: A TABLE DISPLAYING ASSUMED EXPENSES FOR CAPITAL SPLIT 3.	74

LIST OF ABBREVIATIONS

EBT – EARNINGS BEFORE TAX

EM – EQUITY MULTIPLE

EGI – EFFECTIVE GROSS INCOME

EPL – EQUILIBRIUM PARTNERS LIMITED

GIMPA – GHANA INSTITUTE OF MANAGEMENT AND PUBLIC ADMINISTRATION

GZ1 – GEOGRAPHIC ZONE 1

GZ2 – GEOGRAPHIC ZONE 2

GZ3 – GEOGRAPHIC ZONE 3

NOI – NET OPERATING INCOME

PGR – POTENTIAL GROSS REVENUE

IRR – INTERNAL RATE OF RETURN

ROE – RETRUN ON EQUITY

UNIVERISTY OF GHANA - LEGON

UPSA – UNIVERSITY OF PROFESSIONAL STUDIES ACCRA

WTP – WILLINGESS TO PAY

Business Feasibility Research Report

The primary aim of this study was to make a critical assessment of the student rental market across the selected tertiary institutions to gain depth insight into the market and make a go or no-go decision based on the attractiveness of the market. This business feasibility research takes Thompson's (2003) structure of (a) A market research analysis and (b) a financial projection analysis as duly discussed in chapter three of this study. The insights garnered in the feasibility research are synthesized by answering Miles et al. (2007) ten critical questions that every real estate feasibility research should answer, as discussed in chapter three of this study. Miles et al. (2007) ten fundamental questions shine light on the current features of the identified market, their opportunities and how new market entrants like EPL can capitalize on these identified opportunities.

1.0 Trends in Student Rental Housing Market across the Selected Tertiary Institutions

Despite the glaring gaps in the student rental housing market currently, market intelligence gathered during the market research indicated that the student rental market has significantly evolved over the last decade. There are two main reasons for these advancements: (a) the introduction of novel tertiary institution programs and (b) the proactiveness of the private sector towards improving the Ghanaian educational index by investing and starting tertiary institutions other than existing ones owned by the government. Currently, the selected tertiary institutions have a combined student population of 70 000 students, with Legon, UPSA & GIMPA recording the highest number of students. Unfortunately, the rise in demand for tertiary education has poorly matched the supply of student housing rental facilities. For instance, UPSA's Business Development Manager indicated that while the school had diversified its student programs to increase its population to 15 000+, it had housing facilities to accommodate just 1,300 students,

representative of a 91.3% deficit. A similar phenomenon was observed with schools like Gimpa, Legon and UPSA. Schools like Lancaster, Knustford, Radford & Webster, which have zero university-owned housing, also face similar student rental challenges. The critical difference is that GIMPA, Legon & UPSA have at least been able to meet (however insignificant) some level of housing demand. Thus, with these glaring deficits, a clear incentive for private sector players to enter the tertiary level housing market had been established.

Interactions with ten existing players in the student rental market at the tertiary level indicated that though there was a market-entry incentive in the form of unending rising demand, access to capital almost always served as a barrier to entry for potential market entrants. For existing market players, access to capital was a disincentive to increasing the number of properties they owned. According to the ten existing student rental market players engaged in this study, the volatility of interest rates within the Ghanaian macro-economic space made loan facilities to support their ventures a disguised curse. Thus, while 60% of the existing market offerings ranged from SSNIT investments, combined partnerships (local and foreign) and individual investments, about 40% of the current market offerings were conversions of townhouses and semi-detached houses. Further interactions with these market players revealed that the high market entry costs and operational costs stifled innovation strategies to put up high-rise buildings and even apply advanced building technologies like artificial intelligence, building information monitoring, among others, during construction.

Matching these student rental facilities trends from the supplier side to that of the consumers indicated a strong demand for student housing facilities on or near the campuses of the selected tertiary institutions. From Figure 1.1.1 below, 75% of the 506 valid respondents rated having housing on or near their campuses a 5-star (high importance), with just 2% giving a rating of 1-

star (no importance). This percentage distribution of the figure below further suggests that a strategic location for housing facilities is likely to be a market key success factor since 92% (5-star and 4-star ratings) desire a facility near their respective institutions.

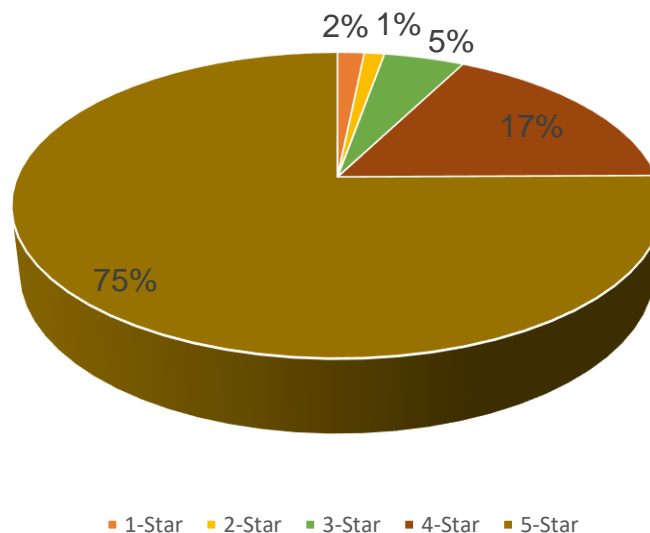


Figure 1.1.1: A pie chart indicating percentage distributions of the importance of having a housing facility near campus.

Source, Field Data, 2021

A meager 5% have a neutral stance towards the proximity of their housing facility to their campuses. This 5% could represent students whose lecture schedules require them to be on campus for only specific days of the week.

2.0 Current Student Rental Housing Market across the selected Tertiary Institutions

Given the overall observed trends in the tertiary student rental housing market, it is critical to give key institutional insights. Thus, to enhance easy apprehension of the findings of this business feasibility research report, the analyses hereafter are made according to the grouped geographic

zones as represented by table 1 in chapter 1. Now, results from the current market give a holistic overview of who potential tenants are. There is an intentional interest in the fundamental demographic features of the identified market.

Geographic Zone 1(GZ1)

GZ1 is representative of Lancaster, Webster, Radford and Knustford. Within this geographic zone, it is well-identified that consumers(students) are populated within an age range of 16 – 30 years. From figure 1.1.2, it is evident that students within an age range of 16 – 20 years are majorly populated within GZ1.

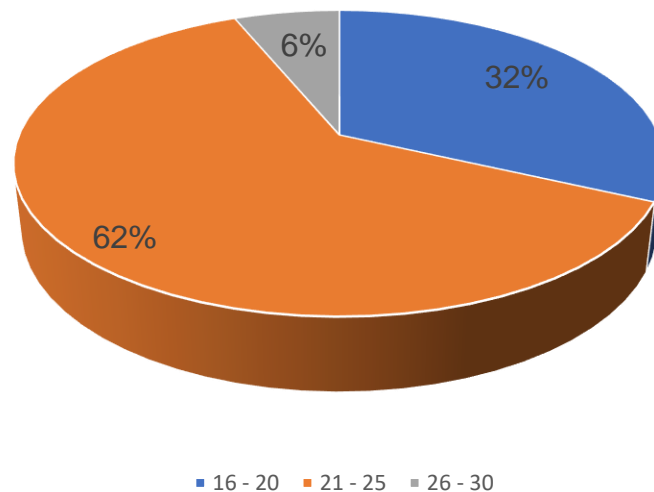


Figure 1.1.2: A pie chart indicating percentage distributions of the age ranges of GZ1 respondents.

Source, Field Data, 2021

Based on critical market data, it is observed from figure 1.1.3 that these age range student populations have a student program-type diversity with 50% (the majority) being Bachelor of Science programs inclusive of courses like computer science & mathematics, health science &

technologies, among others. Postgraduate offerings are not a famous practice within this geographic zone, with a combined percentage of 3% (Master of Science, Master of Arts & Ph.D.). Thus, it can be easily inferred that student rental housing consumers in this zone spend an average of four years at their institution since the majority offer degree-typed program studies.

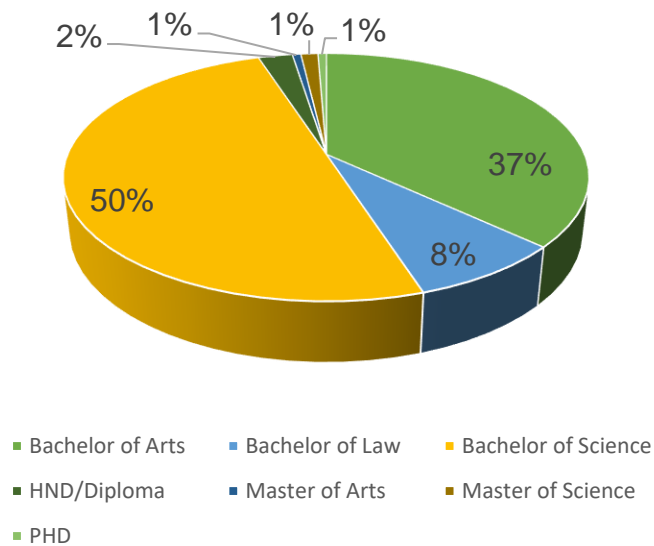


Figure 1.1.3: A pie chart indicating percentage distributions of the type of tertiary education degree offered by institutions in GZ 1.

Source, Field Data, 2021

In terms of nationality make-up, GZ1 represents a reasonably diverse population, as depicted by figure 1.1.4. However, Ghanaians remain dominant (86%). Given that these selected tertiary institutions are Ghana-located, the dominance of Ghanaian students within this zone is unsurprising.

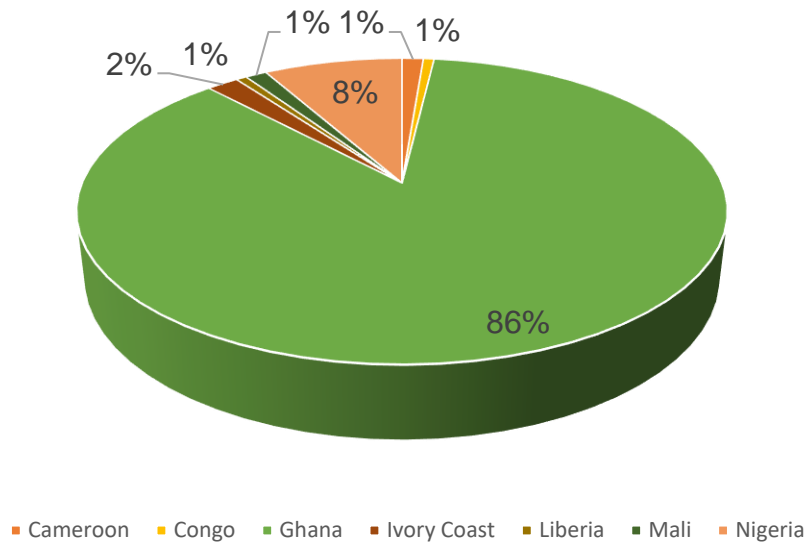


Figure 1.1.4: A pie chart indicating percentage distributions of the nationalities of respondents in GZI.

Source: Field Data, 2021

Based on the interactions with the existing market players, it was revealed that despite the tenant-diversity of occupants, there was a particular preference for (a) undergraduate students first before (b) postgraduate students. Thus, all occupants were mandated to provide their respective student identification cards to validate their tertiary institution undergraduate membership before being given a housing facility. The existing market players opined that though tertiary education had an immense form of freedom, the preference for undergraduate students was linked to the fact that they could easily check their behaviour, unlike students offering post-graduate studies who are most likely move into these properties with their families or receive frequent weekend visits from their spouses, a phenomenon frowned upon by 100% of private hostel facilities engaged in this zone. This explains why the majority of the students within these zones were found in a 16 – 20 age range pursuing undergraduate studies. Again, though these private facilities recognized the

nationality diversity make-up of their tenants, none of these private facilities had an intentional system in place to accommodate the probable dissimilar needs of international students.

Next, analysis of gender metrics of GZ1 constituents revealed an almost perfect gender-based student housing facility rental occupancy, with males making up 49% and females 51%.

Gender	Number of Respondents	Percentage of Respondents
Male	78	49%
Female	81	51%
Sum Total	159	100%

Table 1.1.1: A table displaying the gender distribution of respondents in GZ1.

Source: Field Data, 2021

Logically, GZ1 has an estimated available size of 3 600 students. With figure 1.1.5 displaying current housing arrangements of GZ1, the unmet demand from students is pegged at 50%, since 50% of students in GZ1 commute to campus from their respective homes daily.

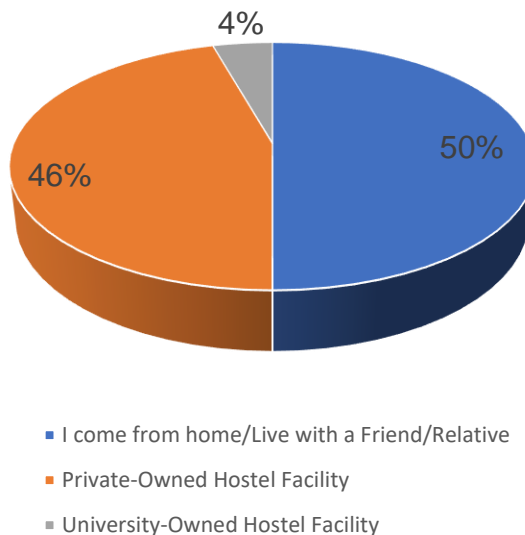


Figure 1.1.5: A pie chart indicating percentage distributions of current student-housing arrangements of respondents in GZ1.

Source: Field Data, 2021

Geographic Zone 2(GZ2)

GZ2 is representative of UPSA. Within this geographic zone, unlike GZ1, where the age range was most populated between 16 – 20 years, it is well-identified that consumers(students) in GZ2 are settled within an age range of 21 to 25 years shown in figure1.1.6 below.

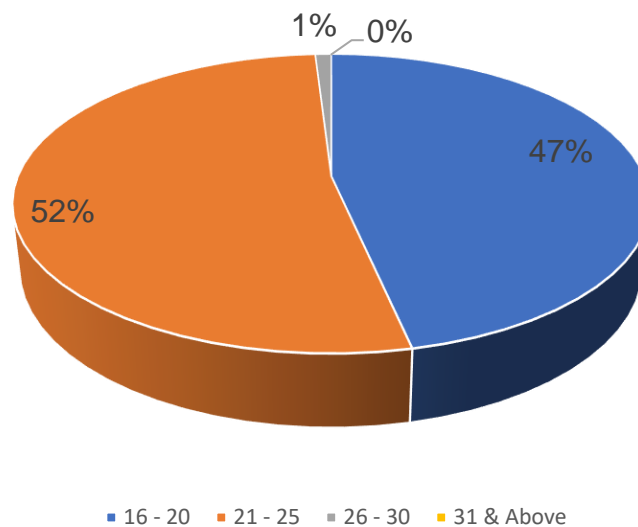


Figure 1.1.6: A pie chart indicating percentage distributions of age ranges of respondents in GZ2.

Source: Field Data, 2021

Again, based on market intelligence gathered, it is observed from figure 1.1.7 that GZ2's age range student populations have an evenly spread student program-type diversity with 24% (the

majority) being Master of Arts, Master of Science and Bachelor of Arts programs, unlike GZ1 where there is a program-offering imbalance with 50% of GZ1 population offering Bachelor of Science. Postgraduate offerings are a famous practice within GZ2, with a combined percentage of 48%. Just like GZ1, there were 0 cases of Ph.D. program offerings recorded in GZ2.

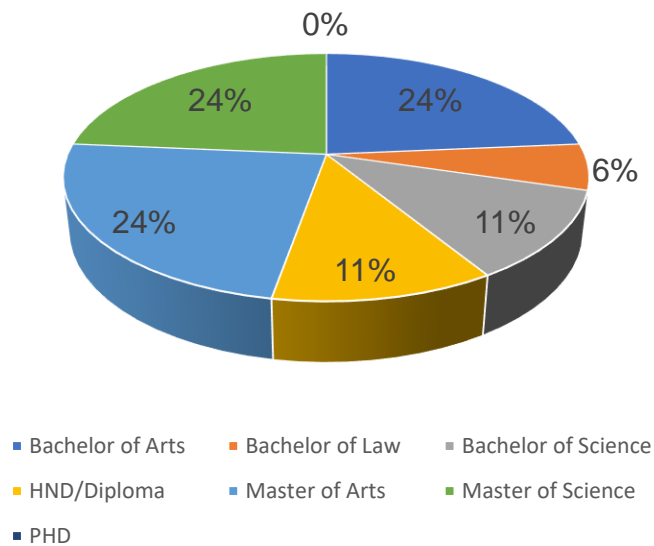


Figure 1.1.7: A pie chart indicating percentage distributions of the type of tertiary education degree offered by GZ2.

Source: Field Data, 2021

In terms of nationality make-up, despite UPSA's constructive efforts to organize fairs across West Africa, out of the 104 UPSA respondents from the 506 research participants, 100% were Ghanaians. However, given the surge in accessibility to Ghanaian tertiary education, GZ2's homogenous nationality is nothing acute.

Based on the interactions with the Business Development Officer at UPSA, it was revealed that the institution was a professional one. Thus, it offered professional courses in fields like marketing, human resource, among others. The professional feature of UPSA explains why 48% of GZ2s respondents offer post-graduate courses. With an immense preference for undergraduate students an observed market trend, this study alludes that 48% of students in GZ2 do not live in or around GZ2. Thus, the perceived 48% do not makeup GZ2's student rental market. For similar reasons in the GZ1 market space, consumers of the student rental market in GZ2 were also mandated to provide their respective undergraduate student identification cards to validate their undergraduate tertiary institution membership before their housing needs were met.

In terms of GZ2's gender insights, market research summarized in table 1.1.2 below revealed that males dominated more in GZ2 as 59.6% of respondents entailed males comparative to the 40.4% females in the zone. Constituents showed an almost perfect gender-based student housing facility rental occupancy, with males making up 49% and females, 51%.

Gender	Number of Respondents	Percentage of Respondents
Male	62	59.6%
Female	42	40.4%
Sum Total	104	100%

Table 1.1.2: A table displaying the gender distribution of respondents in GZ2.

Source: Field Data, 2021

In conclusion, GZ2 has an estimated available size of 15 000+ students. With figure 1.1.8 displaying current housing arrangements of GZ2, the unmet demand from students is pegged at 21%, since 21% of students in GZ 2 commute to campus from their respective homes daily. Given

the myriad of student rental housing facilities spread across GZ2, the 21% unmet demand is perfectly understandable. However, the 21% figure may experience a dip in the coming years as existing players intend to expand their portfolios to match the demand.

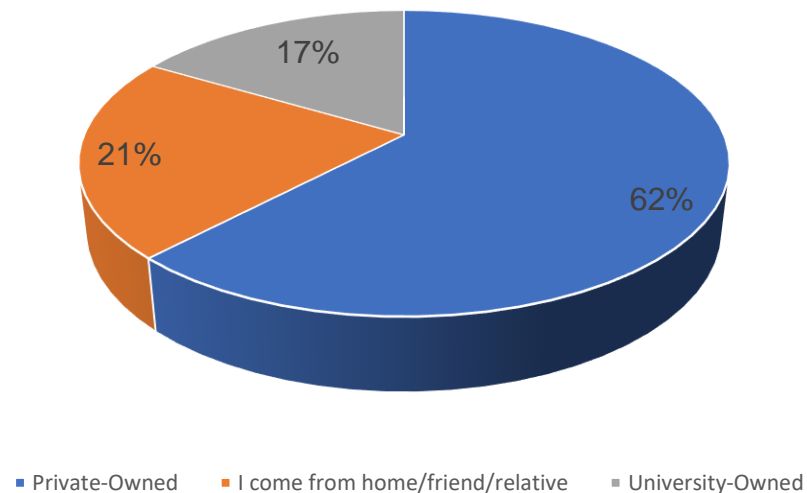


Figure 1.1.8: A pie chart indicating percentage distributions of current student-housing arrangements of respondents in GZ2.

Source: Field Data, 2021

Geographic Zone 3(GZ3)

GZ3 comprises two tertiary institutions, (a) legon and (b) GIMPA. In GZ3, as displayed by figure 1.1.9 below, it is evident that the age range of market consumers(students) yields an even distribution, unlike age range distribution in GZ1 and GZ2. However, given that these institutions are the two oldest tertiary institutions in Ghana (Gimpa, 2021), these institutions have managed to leverage partnerships with the government to expand academic facilities and program-offering

within the last five decades. Thus, these institutions are denser in terms of tertiary education accessible to the Ghanaian child.

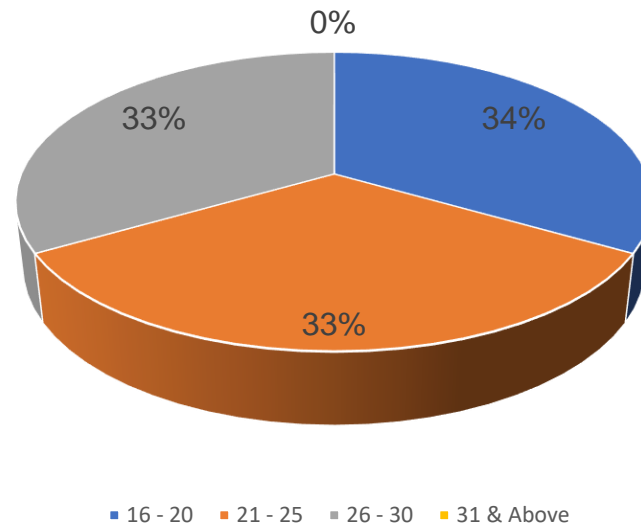


Figure 1.1.9: A pie chart indicating percentage distributions of the age range of the respondents in GZ3.

Source: Field Data, 2021

Out of the 240 respondents recorded within this zone, figure 1.2.1 indicates that the zone had 0 participants offering post-graduate courses. With 32% & 18% of the students offering Bachelor of Science and Bachelor of Arts respectively, 50% of student program offerings were skewed towards Bachelor of Laws. Like in the previous two zones discussed above, post-graduate offerings are not a famous practice within GZ3 per the 240 responses attained for this study. However, the homogeneity among program offerings across the 240 respondents is nothing to be wary of, considering that the existing student housing rental players within this zone also have a significant preference for undergraduate students. Thus, it can be easily inferred that student rental

housing consumers in this zone also spend an average of four years at their respective institutions since the majority offer degree-typed program studies.

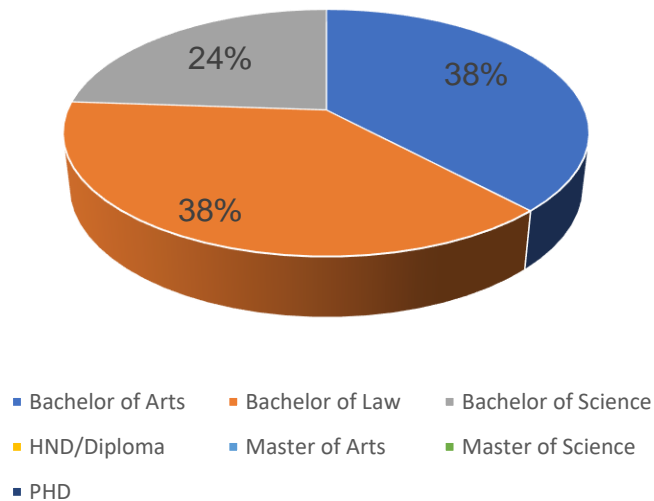


Figure 1.2.0: A pie chart indicating percentage distributions of the type of tertiary education degree offered by GZ3.

Source: Field Data, 2021

Unlike GZ2, GZ3 harnessed some form of nationality diversity, though not as significant compared with the nationality diversity of GZ1. Thus, from figure 1.2.2 below, though Ghanaians remained dominant (98%), a 2% Nigerian inclusion was observed within the market.

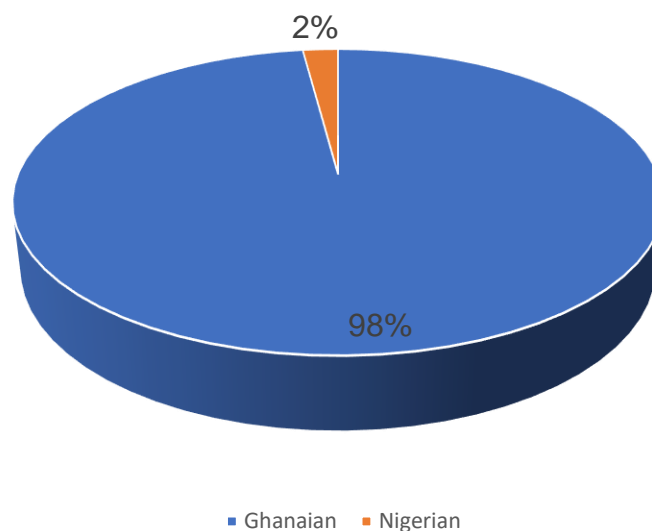


Figure 1.2.1: A pie chart indicating percentage distributions of the nationalities of respondents in GZ3.

Source: Field Data, 2021

Speaking to existing players within GZ3 revealed that just like GZ1, though housing facilities were conscious of the diversity make-up of their tenants, none of these facilities had an intentional system instituted to accommodate the probable dissimilar needs of international students.

Roping in GZ3's gender metrics revealed that the zone was populated by females (60%), as displayed in table 1.1.3 below.

Gender	Number of Respondents	Percentage of Respondents
Male	96	40%
Female	63	60%
Sum Total	240	100%

Table 1.1.3: A table displaying the gender distribution of respondents in GZ3.

Source: Field Data, 2021

Logically, GZ3 has an estimated available size of 50,000+ students. With figure 1.2.3 displaying current housing arrangements of GZ3, the direct unmet demand from students is pegged at 17%, since 50% of students in GZ3 commute to campus from their respective homes daily. However, this 17% is not a true reflection of the size of the unmet demand within this zone. This is because there is a high cognitive dissonance stemming from the unmet expectations of consumers (the students) and the already existing housing facilities. Thus, with figure 1.2.4

indicating that 75% of students occupying university-owned hostels are willing to move to private hostel options because of better amenity offerings from the private hostel facilities, there is an indirect increased unmet demand. However, these movements would also be incentivized by moderate pricing of the private ones as data gathered within this zone indicated that consumers were highly sensitive to pricing. Also, the 52% market share occupied by private hostel owners is a mirror image of the private-sector dominance within this zone.

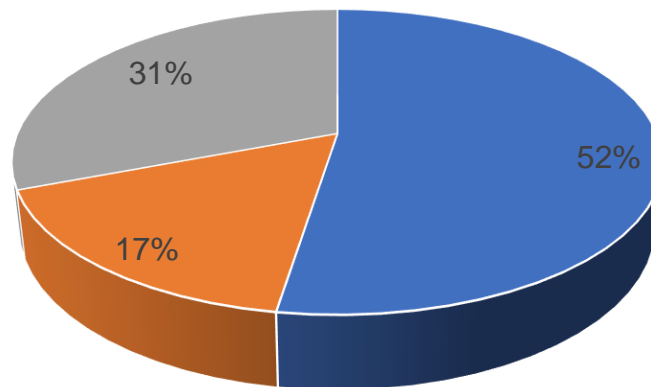
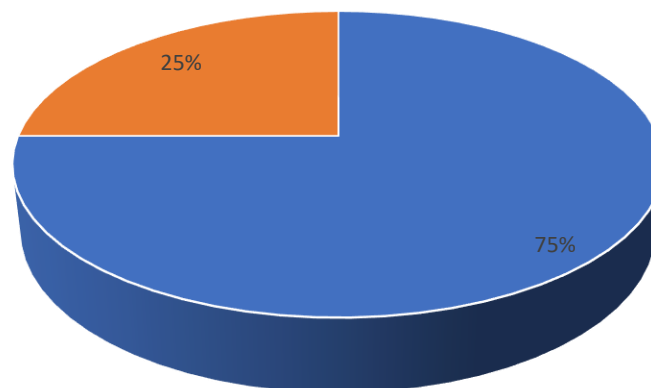


Figure 1.2.2: A pie chart indicating percentage distributions of the current housing arrangements of respondents in GZ3.

■ Private-Owned ■ I come from home/friend/relative ■ University-Owned

Source: Field Data, 2021



■ Move to a private-owned hostel facility ■ Remain in university-owned hostel facility

Figure 1.2.3: A pie chart indicating percentage distributions respondents in GZ3, willing to either move to a private-owned hostel facility or remain in their university-owned hostel facility.

Source: Field Data, 2021

3.0 Depth of the Selected Tertiary Institution's Student Rental Housing Market

The rationale for investigating the student housing rental market depth across the selected tertiary institutions is to ascertain the market potential across GZ1, GZ2 & GZ3. Additionally, to estimate the percentage market share, EPL needs to capture across the respective geographic zones to attain estimated revenues derived from the financial projection analysis. Contrary to the Spanish student rental housing market cited in Chapter 3, data within the Ghanaian tertiary housing market across the selected institutions were non-existent. Thus, market depth was attained from officials in these identified tertiary institutions and major private sector players in the market. There was a highlighted demand for additional housing units to accommodate student needs realized based on interactions with officials of selected tertiary institutions. However, engagements with major market players across the three geographic zones indicated that most of the consumers on the market lacked sufficient funds to pay for the kind of amenities they demanded. Market players in GZ3, for instance, lamented the yearly payment of rent instead of their preferred choice of semester-based rent payment. Given that all the institutions in the identified geographic zones are located in prime areas like East Legon, Legon and the Madina environs, the costly nature of constructing and maintaining property in these plush areas may account for the seemingly soaring pricing of student housing units across the selected institutions. Based on these insights across all three zones, the study deduces that there is gross demand for moderately priced student rental facilities that fully meet the market's perceived values; thus, these prospective units should be relatively cheaper than already existing market prices. The discovery further heightens the

opportunity gap in the student rental market, which can be explored by private sector real estate developers and investors.

4.0 The Perceived Values of the Market

Perceived values of a market represent the key elements that are pivotal to the existing student rental market across the selected institutions and the unmet demand from these institutions. Perceived market values indicate to market analysts what exactly serves as motivation for market consumers to make a purchasing decision, stay or possibly switch to a different product offering.

In table 1.1.4 below, the study enlists the main factors that influence consumer behavior across all three geographic zones. An analysis of the displayed table indicates that consumers value their room type mainly. Given that students have a degree of liberty during their tertiary institution education, this study alludes that students are willing to share rooms with usually one person (two at most) that they can easily relate with. Thus, the 25% allocation towards room-type being a perceived market value is unsurprising.

Reasons	Percentage Distribution of Respondents
Proximity to town & campus	21%
Affordable pricing	20%
Exclusive Study Spaces, Kitchen Spaces, Bathroom & Toilet Facilities	15%
Two-In-a-Room Units	25%
Good Security & Quality Internet Connectivity	19%

Table 1.1.4: A table displaying a distribution of the market perceived values across all geographic zones.

Source: Field Data, 2021

5.0 Strengths, Weaknesses, Opportunities & Threats (SWOT) Analysis

A SWOT analysis is a framework used to analyze a firm's current market position before management decides on new strategy implementation. This suggests that just like the PESTLE framework in chapter 1, the SWOT tool can give a firm a more competitive edge. The term SWOT is an acronym defining a firm's strengths, weaknesses, opportunities and threats. It is critical to indicate that the strengths and weaknesses are based on the firm's internal data under review. Simultaneously, the opportunities and threats factors of the SWOT framework encompass the firm's external environment. Information retrieved in mapping out this SWOT analysis was based on an analysis of the client and a review of existing literature.

Table 1.1.5: SWOT Analysis of Project

Strength	Weakness
1. The client is a leading and experienced infill real estate professional. He has more than ten years of real estate industry experience in property investment and development processes. The client has a background in engineering & construction, pre-development, financial analysis & modelling, leasing, sales, acquisitions, property management, and disposition.	1. Miles et al., 2007 observe that the value of any given land refers to the networth of the land and any attempts to make any form of improvements on the land. Miles et al. (2007) further reveal that unused lands (virgin lands) are more likely to sell at higher prices than used lands. However, the report released by Broll Ghana in 2016 reported that most

<p>With these, the client's capacity to deliver on the project is guaranteed. His industrial experience has also given him an expensive social capital of local and foreign real estate developers who can act as partners to deliver this project.</p> <p>2. From a prior needs assessment into the research brief of the client, this paper realizes that the seven tertiary institutions selected for this study have a cumulative student population of 80,649. A further initial probe into these selected schools revealed grave student housing deficits. The cumulative student population of 80,649 thus serves as a direct form of demand for student housing solutions in these selected tertiary institutions.</p> <p>3. All seven selected tertiary institutions have access to major roads. This makes transportation easy for prospective beneficiaries of this project.</p>	<p>of the areas in Accra have devirginized lands. As such, looking at the scope of this project, to build 500 – 600 tertiary student rental units, the client would require to make significant capital expenditures in the purchase of land if required.</p>
<p style="text-align: center;">Opportunities</p>	<p style="text-align: center;">Threats</p>

<p>1. Per educational policies like the free senior high school, the annual admission rate of tertiary levels stands to increase. This will increase the overall demand for student housing in tertiary institutions, establishing a clear opportunity for the client to meet the demand and gain a significant market share.</p> <p>2. Within the real estate industry, it is relatively easy to raise funds to support any project. Local and international opportunities are available to real estate developers to increase their project start-up capital.</p>	<p>1. Market conditions and macroeconomic variables have driven down the Ghanaian inflation rate massively over the last three years. This poses an unstable economic setting for Ghana. A harsh economy will increase inflation and consequently limit the money supply. The effect will be limited purchasing power in real estate products.</p> <p>2. Since the seven selected tertiary institutions are all within the Accra metropolitan district, finding land to put up a student rental housing facility may be difficult.</p> <p>3. Frequent changes in government serve as a threat. Frequent government changes may lead to enacting new laws and policies that may adversely affect real estate developers. A potential increase in real estate development taxable income is an example of how</p>
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	new government policies may affect the client.
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Source: *Author's own research, 2021.*

6.0 Market Positions, Price Points & Occupancy Rates of Competitors

Competition in the student rental housing market constitutes three types (a) university-owned housing and (b) private-owned housing and (c) students who commute from home. Understanding competition is pivotal to this study because it allows EPL to understand the foundational consumer elements driving current market demand – this allows room for product differentiation by EPL to gain a unique selling point in the market.

Corporate Finance Institute (2020) defines the market position as factors that directly influence how market consumers perceive a product relative to the competition. Corporate Finance Institute's (2020) perspective seems to align with that of marketing specialist Kotler (1999), who argues that market positioning defines product and service offerings uniquely for market consumers. Corporate Finance & Kotler's perspectives seem to allude that a market position reflects a brand identity. For this study, the project scope and size made a daunting task of identifying relevant market positions of existing competition. Thus, respective market positioning was determined by accessing to what extent existing product offerings across the geographic zones fully meet the market's most perceived values of (a)proximity to town and campus, (b)exclusive study spaces, kitchen spaces & bathroom and toilet facilities, (c)two-in-a-room units(d)affordable pricing (e) good security and quality internet connectivity

To access the extent to which existing product offerings across respective geographic zones fully met the market's perceived values, the study employed a value curve drawn in figures 1.2.5,

figure 1.2.6 & figure 1.2.7 below. On the horizontal axes are the specific metric values influencing purchasing decisions. On the vertical axes is a scale with a 0 – 5 range which measures the competition's ability to fully meet the market perceived values; with 0 indicative that competition can barely satisfy market perceived values and 5, telling that the competition can comfortably satisfy market perceived values.



Figure 1.2.4: A value curve graph indicating the extent to which competition in GZ1 satisfies the market's perceived values.

Source: Field Data, 2021

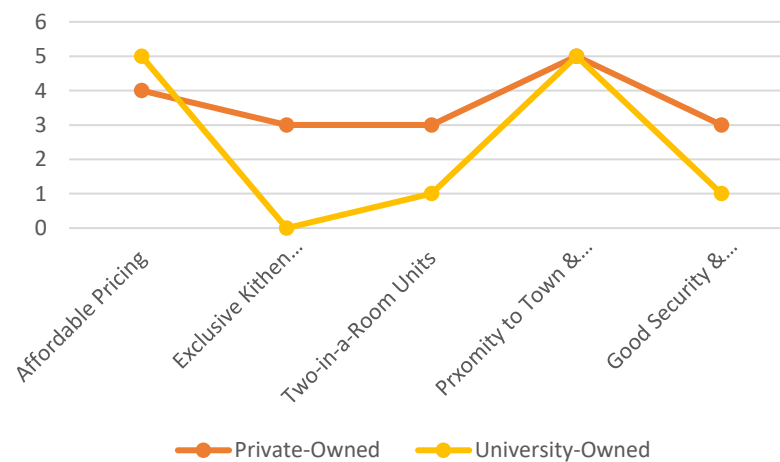


Figure 1.2.5: A value curve graph indicating the extent to which competition in GZ2 satisfies the market's perceived values.

Source: Field Data, 2021

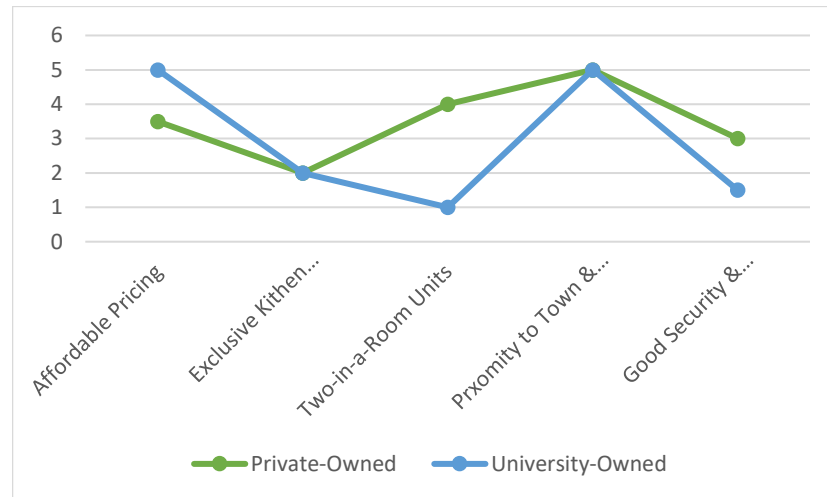


Figure 1.2.6: A value curve graph indicating the extent to which competition in GZ3 satisfies the market's perceived values.

Source: Field Data, 2021

Based on the figure above, it can easily be inferred that existing market competition across all three geographic zones does not fully satisfy the perceived values of the market. However, overall, the private-owned housing options meet market perceived values a lot better than university-owned housing alternatives. Based on the value curves above, university-owned housing facilities conveniently satisfy affordability and proximity metrics over an 80% - 100% percentile. Interactions with university officials validate this trend. Across all three zones, university officials indicated that the tertiary institution had an inherent obligation to ensure the

housing needs of students. Piquing insights into gathered data revealed that the intrinsic responsibility of tertiary institutions to bridge the accommodation gap stemmed primarily from parental pressure through constant accommodation inquiries. University-owned housing options thus took a socialist approach in tackling the student housing deficit. In this regard, the university-owned facilities were not profit-motivated, instead socially driven; and this explains why university-owned facilities scored high on the affordability metric. In tandem with the socialist approach, university-owned facilities had more four-in-a-room units to accommodate more students. However, it is imperative to indicate that the socialist approach of university-owned housing initiates a trade-off between the comfort(quality) of amenities and available space. This explains the low – averaged score of the university-owned housing facilities on the exclusivity of kitchen space, study space, bathroom & toilet space, good security & quality internet connectivity and two-in-a-room type units across all the three geographic zones.

Next, given that interviews with university officials and private-owned facilities across all the three geographic zones strongly indicated that location was a prime element for market success, it is unsurprising to observe scores within the 80th – 100th percentile for proximity to campus and town by university-owned facilities across all three geographic zones.

However, in sharp contrast, conversations with private-owned facilities across the zones indicated 100% profit-making features instead of being socially driven, unlike the university-owned facilities. Unlike the university-owned, the private-owned facilities did not compromise on quality, especially as high levels of quality were a means of price justification on the market. In view of this, it is unsurprising to realize a 60th – 100th percentile score for market perceived values like the exclusivity of kitchen space, study space, bathroom & toilet space, good security & quality internet connectivity and two-in-a-room type units across GZ1 and GZ3. This highlights the trade-

off between comfort(quality) levels and the space available. This suggests that across GZ1 & GZ3, private-owned facilities preferred to maximize comfort instead of space. These private-owned facilities had a more diverse unit-type mix ranging from one-in-a-room type units, two-in-a-room type units, three-in-a-room type units (rare cases) and four-in-a-room type units. Though comfort metrics for GZ2 were low in the value curve, given that an estimated 65% of the market seemed unbothered, private-owned facilities in GZ2 currently enjoyed some undue profit benefits.

Again, across all three geographic zones, private-owned facilities seemed to exhibit affordability despite the appreciated comfort levels in their respective product offering. Further interactions with ten property owners/managers revealed that these private-owned facilities typically relied on the institution's recommendation of their property to students and parents for guaranteed demand. The effect of this perceived collaboration was a regulatory check by the institution to ensure that rental prices quoted by the private-owned facilities are not exponential. Despite the inflow of guaranteed demand from these institutional collaborations, all ten property owners bemoaned the invisible hand by the school to control rental rates, arguing that it unnecessarily delayed break-even periods.

Logically, based on the value curve graphs, it is evident that competition is yet to maximize the market's perceived values fully; this presents a significant opportunity for EPL to create value-oriented product offerings to penetrate the student housing rental market across these selected tertiary institutions. The following section gives a brief but detailed reportage on the price points of the student housing rental market.

With evidenced deficits in the student-housing rental market, figure 1.2.8, figure 1.2.9 & figure 1.3.1 below indicates the various price points of the student housing rental market across the selected tertiary institutions. The graphs located to the left on each of the figures contrast the

current pricing of university-owned and private-owned facilities. On the other hand, the graphs situated to the right on each of the figures indicate how much the market is willing to pay given product offerings that fully harness market-perceived values.

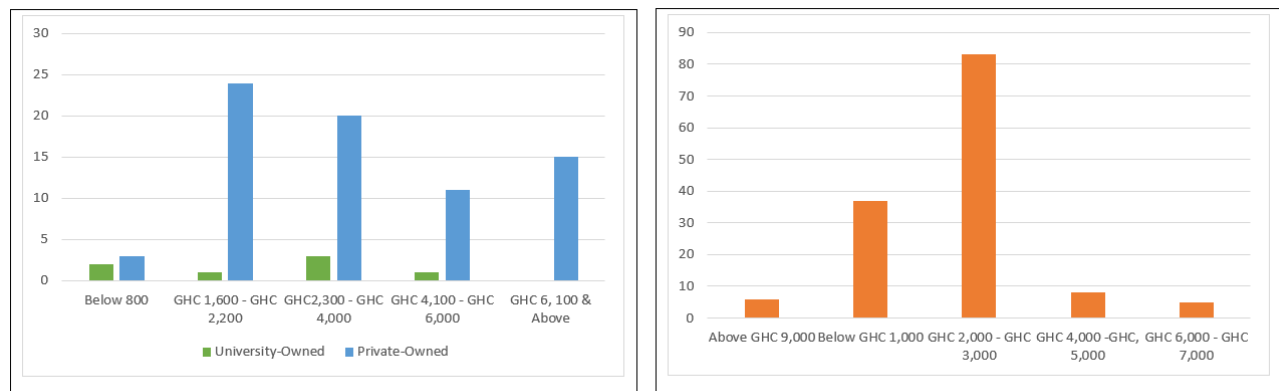


Figure 1.2.7: A bar chart indicating current market pricing and the willingness of consumers to pay for product offerings that satisfy market perceived values of GZI.

Source: Field Data, 2021

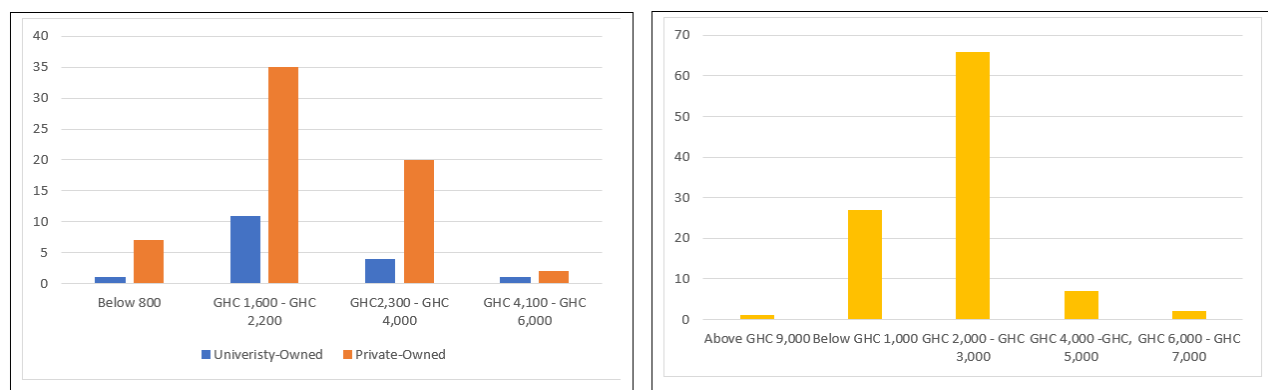


Figure 1.2.8: A bar chart indicating current market pricing and the willingness of consumers to pay for product offerings that satisfy market perceived values of GZ2.

Source: Field Data, 2021

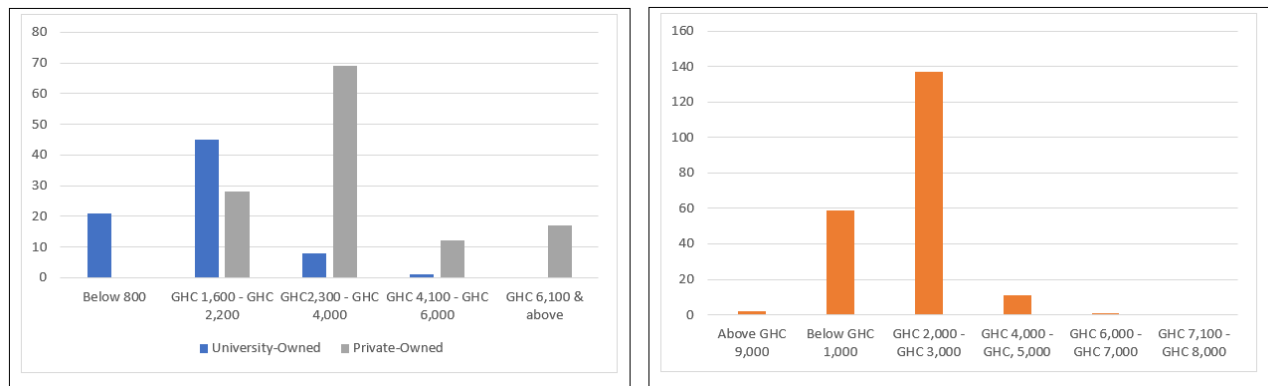


Figure 1.2.9: A bar chart indicating current market pricing and the willingness of consumers to pay for product offerings that satisfy market perceived values of GZ3.

Source: Field Data, 2021

Looking at the figures above, it is evident that private-owned facilities out-price university-owned facilities across all three geographic zones. However, this observed trend is unsurprising. This is because, as indicated above, university-owned facilities take a socialist approach toward tackling the student-housing crisis across all three zones. University-owned facilities focus on converting available space into more bed spaces, compromising quality and comfort amenities. As such, university-owned facilities tend to charge discount rates, further increasing average student purchasing power. In GZ1, the highest rent chargeable for university-owned facilities was between a GHC 4, 100 – GHC 6, 000 range of which only 14.28% of the university-owned market in GZ1

ascribed. Again, based on the figures above, the rent range within which most students ascribe to is between GHC 2,300 – GHC 4, 000, occupying 42.8% of the market. Additionally, 28.5% and 14.28% of the university-owned market fell within the GHC 1, 600 – 2, 200 and below GHC 800 rent payable bracket, respectively. In contrast, in GZ2, most of the market ascribed mostly to university-owned facilities priced between a GHC 1, 600 – GHC 2, 200 range (64.7%). Additionally, 23.5% and 0.58% of the market were comfortable within a GHC 2,300 – GHC 4,000, GHC 4, 100 – GHC 6, 000 and below GHC 800 rent bracket respectively. Like GZ1, in GZ3, the highest ascribed rent bracket of the market fell between GHC 2,300 – GHC 4, 000 occupied by 60% of the market. This was followed by 28% of the market falling within a rent bracket of GHC 1 600 – GHC 2 200. 10.6% and 0.13% of this market preferred a GHC 4, 100 – GHC 6, 000 and below GHC 800 rent bracket, respectively. Clearly, across all three zones, the most preferred rent for university-owned facilities falls within GHC 1, 600 – GHC 2, 200.

Roping in the price points for private-owned facilities, it is evident from figure 1.2.7, that in GZ1, the most populated price points fell within a range of GHC 1, 600 – GHC 2, 000(32.8%) and GHC 2, 300 – GHC 4, 000(27.39%). While 20.5% of the market preferred to pay above GHC 6, 100, 15% of the market ascribed to price point range of GHC 4,100 – GHC 6,000. Contrary to expectations, private-owned facilities offered some discounted products, with 0.04% of GZ1's market currently paying below GHC 800. Price point trends in the private-owned student housing market in GZ2 were similar to that of GZ1, with 54.6% of the respondents in GZ2 currently paying a rent of GHC 1, 600 – GHC 2,200 and 31.25% also paying GHC 2,300 – GHC 4,000. Unlike GZ1, 0% of GZ2 respondents fell within the GHC 6, 100, and above bracket, while 10.9% (10.86% higher than GZ1) currently paid below GHC 800. Contrary to trends in GZ 1 and GZ 2, 0% of the GZ3 market paid below GHC 800. The highest paying rent fell within the GHC 2 300 – 4 000

brackets, with 54.7% of the market currently paying in that range. This was followed by 20% of the market presently paying between GHC 1, 600 – GHC 2, 200. While 9.5% of the market paid between GHC 4, 100 – GHC 6, 000, 13.4% of the market were also currently paying GHC 6, 100 & above. The market in GZ3 had a propensity to pay higher rent as the majority of the market presently fell within a bracket of GHC 2,300 – GHC 4, 000, unlike GZ1 and GZ2, where the majority of the market fell within the GHC 1, 600 – GHC 2, 200 rent brackets.

Based on field data, it is imperative to indicate that across all three zones, the section of the market (both university-owned and private-owned) paying below GHC 800 had 0% amenities in their rooms. The prospective occupant of the room only had available bed space and was responsible for furnishing the room. Across the three geographic zones again, the market section paying GHC 1, 600 and above had their rooms furnished. However, as the price ranged increased, there was variation in elements like room types and amenities. For instance, across the three zones, the researcher realized that students paying GHC 6, 100 and above had additional amenities like television sets and air conditioners in their room. This served as price justification for competitors who had such product offerings(comfort). However, realizing that about 88% of the entire market across all three zones ascribed to GHC 1, 600 – GHC 4,000 rental rates, this study alludes that additional amenities like air conditioners and television sets were luxury goods on the market and not a fundamental market key success factor.

Based on the price point range analyzed above, the study realizes that the average prices charged in university-owned facilities across all three zones were GHC 1, 600 – GHC 2, 200, while rent charged for private-owned facilities across all three zones pegged within a range of GHC 2,300 – GHC 4, 000. Realizing that the price variation is not exponential across these types of competition, this paper alludes that the university-owned rents indirectly act as market price

benchmarks. Thus, the market is highly unwilling to pay for products whose rent charges are exponentially different from university-owned rents. Additionally, interactions with private-owned and university-owned facilities indicated that the quality of macro-economic conditions directly influences rent. However, even during poor macro-economic seasons, university-owned facilities hardly increase prices in tandem with its socialist mission of providing housing for a more extensive section of their students. Private-owned facilities, however, had the liberty to increase rent. However, field data indicated that given the market's high price sensitivity, private-owned facilities only increase prices on a marginal basis within 1-3 years.

To conclude on the price point analysis, it is critical to indicate that when market perceived values are fully fulfilled, the majority of the market is willing to pay a yearly rent of GHC 2 000 – GHC 3, 000. This assertion is evidenced by the right-hand side of figures 1.2.7, 1.2.8 & 1.2.9 displayed above, which indicates that 59.7%, 64.0% and 65.2% across GZ1, GZ2 and GZ3 respectively are willing to pay a price point range of GHC 2, 000 – GHC 3, 000 if all market perceived values are fulfilled.

Moving on, the occupancy rate is a reflection of the percentage of rooms occupied in a property within a specified timeframe. Table 1.1.6 below indicates the occupancy rate per geographic zones.

Geographic Zone	Average Length of Stay per current tenants	Occupancy Rates
Zone 1	8 months	70%
Zone 2	8 months	86%
Zone 3	8 months	95%

Table 1.1.6: A table displaying the occupancy rates across all three zones.

Source: Field Data, 2021

This study looked at the tertiary level yearly calendar to determine occupancy rates across the three geographic zones. After an introspection of the tertiary level calendar, this study realized that given twelve months in every year, most tertiary institutions are open for only eight months – four months (August – December) in semester one and another four months (January – April) in semester two. Thus, there is a direct vacancy loss of four months across all the zones since these four months cover tertiary-level vacation periods. As such, the highest occupancy rate possible is 95% and not 100%. It is imperative to state that based on the locations of the selected institutions, the university-owned and private-owned facilities are all situated in East Legon, Madina and Legon. With the inception of Covid-19, field data indicated that the occupancy rate across respective geographic zones remained unchanged. The researcher attributes the unchanged occupancy rates during the pandemic to the unmet demand of student housing across all zones. In conclusion, the respective occupancy rates exhibited in the 1.1.6 above denote that student rental developments across the geographic zones have an assurance of having tenants yearly.

7.0 Available Student Housing Projects in the Pipeline

This section focuses on the available student housing projects in the pipeline across the selected tertiary institutions and their estimated year of completion.

Name of Institution	Whether or not there is a student housing project in the pipeline.	Estimated Year of Completion	Number of Units Under Construction

Knustford	Student housing project in the pipeline	December 2021	200 rooms for 8,000 students
Radford	No pipeline student housing project	None	N/A
Lancaster	Student housing project in the pipeline	Mid-Year 2021	Undisclosed
Webster	No pipeline student housing project	None	N/A
UPSA	Student housing project in the pipeline	August 2021	4,500 rooms
GIMPA	No pipeline student housing project	None	N/A
Legon	No pipeline student housing project	None	N/A

Table 1.1.7: A table displaying available housing projects in the pipeline across all three zones.

Source: Field Data, 2021

Based on the table displayed above, while institutions in GZ3 do not have any pipeline student housing projects, institutions in GZ 1 & GZ2 have some pipeline projects. In GZ1, these upcoming pipeline projects are university-owned. In Knustford, interactions with management personnel revealed that the forthcoming 200 units will have surplus room spaces to accommodate future population growth and cater to neighboring institutions like Lancaster, Radford, and Webster. Management personnel indicated that the 200-bed project under construction is not

profit-driven (this aligns with the socialist-centric stance of university-owned facilities argued in section 6 of this business feasibility research report); thus, pricing would be subsidized based on what private-owned facilities are currently charging. However, the management personnel indicated that despite the socialist approach of tackling the student housing issue, an estimated 15% of the rooms would have luxury amenities like air conditioners, water heaters and television sets strictly available to the high-end section of the market. This study alludes that the introduction of luxury amenities available to the high-end section of the market will assist the institution in attaining a faster break-even period. From a management viewpoint, there are no foreseeable challenges that could hamper the construction timeline of the facility. Management, however, indicated that the institution would apply policy to ensure that all of its students patronize the upcoming project. With these insights drawn, this paper alludes that given the subsidized pricing of the upcoming project, there will be a market shift in terms of consumer preference from private-owned to university-owned facilities upon completing the project. There is a high likelihood that the perceived market shift from private-owned facilities to Knustford's facility will affect neighboring institutions in the zone like Webster, Radford & Lancaster, given the surplus bed spaces in Knustford's pipeline project.

Similarly, in GZ2, the pipeline project has an expected completion timeline of December 2021. It is critical to indicate that this construction project is university-owned. However, it is essential to indicate that two private-owned facilities within this zone completed projects with a combined bed space of 130 in the last quarter of 2020. The 130-bed spaces as at the time of data collection had been fully leased out. However, given the occupancy rate levels of the market, this is unsurprising. Like already existing university-owned facilities in this zone, field data revealed that the upcoming construction project with a completion timeline of August 2021 will have

features like shared television rooms, study spaces and laundry services. Just like GZ1, rent will be subsidized to increase accessibility. Additionally, field data indicated that though there are no clear-cut challenges likely to hamper the completion date, the unavailability of space within GZ2 will affect the institution's ability to put up more accommodation facilities in the incoming years.

In conclusion, only GZ1 & GZ2 have student housing projects in the pipeline. However, given that institutions in GZ3 are government-owned, this paper believes that despite the 0 pipeline projects in this zone, the government can easily mobilize funds to put up additional accommodation.

8.0 Opportunities Presented by the Competitors

Insights duly drawn from the earlier sections of this business feasibility research report conclude low maximization of market perceived values presently. This creates a market entry opportunity for potential real estate developers to penetrate the market to maximize market perceived values of (a)proximity to town and campus, (b)exclusive study spaces, kitchen spaces & bathroom and toilet facilities, (c)two-in-a-room units(d)affordable pricing (e) good security and quality internet connectivity, which are not fully met presently, further providing a market entry opportunity for new entrants like EPL.

Based on insights like the available student housing projects in the pipeline, student sizes & sizes of the unmet demand, occupancy rates as well as figure 1.2.9 from section 6 (indicates that the GZ3 section of the entire market pays relatively higher yearly rent relative to the other zones), there is an untapped opportunity for the development of affordable student housing rental facilities which significantly satisfies market perceived values in GZ3. If tapped, such an opportunity allows the GZ3 market to pay their desired yearly price range of GHC 2 300 – GHC 4 000 for housing units that fulfill market perceived values.

9.0 Conclusions Drawn from the Market Research Study

This section brings the conclusions from the findings of the market research study section of this business feasibility research report. Deductions made from the market research study are categorized into (a) the target market, (b) market positions & differentiation, (c) price points and (d) occupancy rates.

9.1 The Target Market

An identified target market is integral to the market research study of this business feasibility research because it denotes who the market buyers are. In the context of the business feasibility research report, the target market draws conclusions on which combination of geographic zones is most suitable for EPL's prospective construction (assuming EPL) management makes a market entry.

Based on the analysis made from data collected, the target market for EPL is GZ3 which consists of tertiary institutions like Gimpa and Legon. The 50 000+ student population size and the 60% + unmet demand in GZ 3 make this zone the most populated zone with the highest unmet demand in contrast to the 15 000+ & 3 600 population sizes with 21% & 50% unmet demand in GZ2 and GZ1 respectively. Inferring from figure 1.2.1, the market in GZ3 has an even age range percentage distribution between 16 – 30 years. Regarding degree types, with 32% & 18% of the students offering Bachelor of Science and Bachelor of Arts respectively, 50% of student program offerings are skewed towards Bachelor of Laws. The homogeneity among program offerings in GZ3, as figure 1.2.2 displays, is not a market threat, considering that the existing student housing rental players in GZ 3 have a significant preference for undergraduate students. Therefore, it can

be inferred that the buyers in the GZ3 market spend an average of four years at their respective institutions since the majority offer degree-typed program studies.

9.2 Market Positions & Differentiation

Market positions reflect how market consumers perceive a specific product offering relative to existing competition. The market position for the prospective development of a 500 – 600 student rental housing unit in GZ3 is to provide all the five-core market perceived values of (a)proximity to town and campus, (b)exclusive study spaces, kitchen spaces & bathroom and toilet facilities, (c)two-in-a-room units(d)affordable pricing (e) good security and quality internet connectivity and even more. This prospective development will meet market affordability as units will be priced based on the market's willingness to pay a GHC 2, 000 – GHC 3,000 yearly rent. As rightly informed from section 9.1, this study alludes to GZ 3 as the most suitable zone for this prospective development because per geographic population demographic analysis, GZ 3 has the largest student population and the most significant percentage of unmet demand (60%+). If EPL assumes market entry, it would have used the geographic population demographic insight to strategically differentiate itself through its location. Additionally, by delivering product offerings with optimal market-perceived values, EPL assumes a primary market position relative to existing competition in GZ 3.

9.3 Price Point

The price point is representative of how best monetary value can be captured from prospective development product offerings. EPL's prospective development should be affordable to increase EPL occupancy rates, especially with affordability being a critical fundamental market

success factor for the target market. Table 1.1.8 indicates price points that GZ 3 market is willing to pay for based on room types which significantly satisfy market perceived values.

Room Type	Percentage of Market which Prefer this Room-Type	Mean Price Point
One-in-a-room type unit	18.5%	GHC 4,000 – GHC 5, 000
Two-in-a-room type unit	74%	GHC 2,600 – GHC 3,500
Three-in-a-room type unit	7.5%	GHC 1, 600 – GHC 2,500

Table 1.1.8: A table displaying price points GZ3 is willing to pay for based on room-types which satisfy market perceived values.

Source: Field Data, 2021

In conclusion, it is not enough for EPL to locate prospective product offerings in GZ 3. To attain maximum monetary value in GZ3, EPL's price points must be approximately similar to the mean price points that the GZ 3 market is willing to pay based on the room type.

9.4 Occupancy Rates

With GZ3 identified as the ideal target market for the prospective development of a 500 – 600 student housing rental unit by EPL, GZ 3's occupancy rate from section 6 was used in determining the estimated occupancy rate for EPL's prospective development. Given that the development is located in GZ3, EPL's estimated occupancy rate is 95%.

The following section focuses on the second key element of a business feasibility research, the financial projection analysis. This section uses insights from the market research to make a financial projection assessment given EPL's likelihood of market entry into GZ3.

10.0 Financial Feasibility

As indicated by Thompson (2005) in chapter 3, a financial projection analysis uses critical insights gained from market research to critically assess market profitability. In the context of this study, after the determination of the project development cost, a 15-year net income cashflow projection (as requested by EPL) was made to gauge how profitable market entry into GZ3(the ideal market as informed by market research data) will benefit EPL. It is vital to state that findings from the market research directly informed the financial projection analysis.

Next, despite the projections made after the determination of project development costs, this study considered three leading real estate financial metrics in its decision making, namely: equity multiple (EM), return on investment (ROE) and internal rate of return (IRR). Per industry norms, these metrics are the topmost metrics real estate investors and developers analyze to determine market entry and market profitability. The EM simply measures how much cash a real estate investor will get back from a given real estate deal. Thus, the EM in this study informs EPL on how much cash they will make if they enter GZ3. Next, the ROE indicates a business's profitability comparative to the business's total equity investments. Thus, the ROE in this study is critical in informing EPL on the extent to which their equity investments will be profitable if market entry into GZ 3 is made. Lastly, the IRR is a percentage metric of the rate earned on each dollar EPL invests for the period of investments after it has made market penetration into GZ3. Based on industry knowledge, it is imperative to indicate that the IRR and EM complement each other – while the EM does not consider the time value of money, the IRR does.

Additionally, while the IRR does not describe the total cash an investment returns, the EM does precisely so. Roping in these three metrics with real estate decision making, an EM of 1.0x and above means a real estate deal is financially feasible and it indicates that the real estate investor

is making more cash than initial investments. With ROE indicative of how EPL can use its equity investments to generate profits (assuming market entry into GZ3), the accepted industry ROE is between 15% -20%. ROEs that fall within this range are considered financially attractive as it implies that the EPL can effectively channel its equity investments into profit. Lastly, an IRR between 10% - 20% is deemed worthwhile across the real estate industry as it denotes that the percentage rates earned on each dollar of EPL investment yield attractive returns. The following section discusses key assumptions which influenced the net income projection analysis.

10.1 Underlying Assumptions for Unit Mix

A. The unit type for this project construction is a studio apartment. A studio apartment combines the living room, bedroom & kitchen into single room space. The key difference between a one-bedroom apartment and a studio is that whereas the latter is a self-contained space, the former features a separate bedroom area, distinct and closed off from the kitchen and living room space. A studio apartment would be the ideal unit-type because the combined living room, bedroom & kitchen into a single room space is a prudent use of space, minimizing overall development cost for EPL.

B. There are three unit-types: single-bed studio, two-bed studio & three-bed studio apartment. The unit-type split is 16% (single-bed studio), 30% (two-bed studio) & 50% (three-bed studio). This financial projection analysis assumes 100 single-bed studios, 200 two-bed studios and 300 three-bed studios in nominal terms. Though two-in-a-room units are the most valuable market-perceived value, 50% of the prospective units mix assumed are three-in-a-room, as informed by the market research report. This is because, given the average WTP of GZ3, three-in-a-room units give a cheaper alternative to the market, increasing accessibility to students (since three-bed studios will

pay less rent than two-bed studios); consequently, increasing EPL's prospective total accessible market.

C. Based on the unit-type split, the total prospective unit is 600, equivalent to 1400 bed spaces. Given the 50,000-population size of GZ3 and the 60 + % unmet demand, an assumed market entry of 1400 bed spaces (600 units) would be the highest in the zone but an undersupply. However, this study deems 1400 bed spaces a conservative market entry strategy given EPL's market novelty.

D. Based on the market research, consumers(students) preferred to pay rent yearly. Thus, the financial projection assumed an annual rent charge. Additionally, for standardization, the figures quoted and utilized in this projection are stated in dollar terms.

E. Based on the market research, most students used walking, uber or shuttle services to commute from their respective student rental facilities to lecture halls. Thus, this financial analysis assumed one parking space for every three studios. Specifically, a single-bed studio apartment will have 33sqm parking space allocation ($0.33 \times \text{number (100) of single-bed studios to be constructed}$), a two-bed studio will have 66sqm parking space allocation ($0.33 \times \text{the number (200) of two-bed studios to be built}$) and a three-bed studio will have 99 sqm parking space allocation ($0.33 \times \text{the number (300) of three-bed studio apartments to be constructed}$). Thus, total parking (product of parking/unit type and the number of that unit type being produced) is 198 sqm.

G. Under section 6 of the market research, it is evident that exclusive study spaces, kitchen spaces & bathroom and toilet facilities were fundamental market perceived values. Thus, the financial projection analysis assumed an exclusive study space in each unit type instead of a shared study room for the entire hostel. However, instead of exclusive kitchen spaces & bathroom and toilet facilities, this financial projection assumed a shared large kitchen space and one bathroom and

toilet space facility. Upon observation during the data collection phase, 100% of kitchen spaces across all three zones (GZ3 being no different) had minimal space allocations. Some existing hostel facilities in GZ3 did not have intentionally allocated kitchen spaces; tenants had resorted to either converting their balconies to kitchen spaces or a portion of their room as a kitchen space. For this reason, an intentionally built large kitchen space in each room-type is most likely to meet the market's need for exclusive kitchen spaces. Also, instead of exclusive bathroom & toilet facilities, this study deems a full but separated bathroom & toilet facility as most appropriate. A full but separate bathroom and toilet facility allows for indirect exclusivity. For example, a tenant using the bathroom would have privacy to shower since the sink and toilet facility are not in the same space allocation (separated in a different section of the room), compared to the current market offering where there is zero exclusivity of bathrooms & toilet facilities. The current competition put bathroom & toilet facility per room in the same space. The full but separate bathroom and toilet facility strategy allows for a differentiation point which EPL can leverage to satisfy market perceived values. With these suggested kitchen spaces, bathroom & toilet space exclusivity strategy, EPL need not provide literal exclusive kitchen spaces and bathroom & toilet facilities per room-type (a two-bed studio apartment need not have two kitchen spaces and two bathrooms & toilet facilities, and a three-bed studio apartment need not have three kitchen spaces and three bathrooms & toilet facilities.) The study is of the view that this innovative means of meeting market perceived values of exclusive study spaces, kitchen spaces & bathroom and toilet facilities will present cost savings for EPL given that a double and triple kitchen and bathroom & toilet facility per room-type directly implies double and triple costs incurred in chiseling of walls, tiling and layering of polyvinyl chloride (PVC) pipes for more efficient plumbing and drainage systems.

K. Inferring from interviews across all the zones (GZ3 inclusive), 100% of private hostel owners did not include electricity utility in the rental rates. Utilities included in rental rates were limited to just water charges. Thus, in the projection analysis, the study does not have electricity utility as an expense. However, given that quality internet connectivity is also a key perceived market value, the utility expense factored in the financial projection analysis are quality internet connectivity & water.

L. Affordability is a crucial market perceived value (based on the findings from the market research). Thus, the pricing per unit type is GHC 5 000/ \$ 868.51(single-bed studio), GHC 3,500/\$ 607.96(two-bed studio) and GHC 2, 500/\$ 434.25 (three-bed studio). These price points were derived from the market's WTP indicated in the market research report section 6, plus a marginal premium by the researcher. The currency conversion scale used was \$ 5.75 to a Ghana Cedi.

L. Space is measured in square meters(sqm). As recommended by EPL, the assumed space (in sqm) for a single-bed studio was 30sqm, 40sqm for a two-bed studio and 50sqm for a three-bed studio. Given the estimated unit-type mix of 100 single-bed studios, 200 two-bed studios and 300 three-bed studios, the total spaces required is 3000sqm, 8000sqm and 15000sqm, respectively (product of the number of units and their respective sizes in sqm).

M. As indicated in the market research report section, tertiary institutions are operational for eight months, given their four-month vacation period. Thus, for four months, unless Equilibrium intends to lease out space for other entities like churches that may be organizing conventions during summer breaks, there would be no tenancy. Thus, this financial projection analysis assumed a vacancy loss of 5% on Effective Gross Income (EGI).

Unit Type	No. of Units	No. of beds/unit	Rent/Bed /year	Rent/Room/year	Revenue/type/year	Size (sqm)
Single-Bed Studio Apartment	100	1	870	869.57	86,956.52	30
Two-Bed Studio Apartment	200	2	609	1,217.39	243,478.26	40
Three-Bed Studio Apartment	300	3	435	1,304.35	391,304.35	50
Total Number of Units	600					
Total Number of Beds	1400					
Total sqm/unit type required						
Total Parking Space						
Average Size per Unit	43.33					
Total Revenue/year					721,739.13	
Monthly Cash-Inflow					60,144.93	
Rent/Unit Type(In Ghana Cedis)						
				8000	5000	
				7000	3500	
				5000	2500	
				\$ 5.75 to a Ghana Cedi		

Unit Type	Total sqm/unit type	No. of Baths	No. of Kitchen	Living space	Study Space	Parking/unit	Total Parking
Single-Bed Studio Apartment	3000	1	1	Shared	1	0.33	33
Two-Bed Studio Apartment	8000	1	1	Shared	2	0.33	66
Three-Bed Studio Apartment	15000	1	1	Shared	3	0.33	99
Total Number of Units							
Total Number of Beds							
Total sqm/unit type required	26000						
Total Parking Space							198
Average Size per Unit							
Total Revenue/year							
Monthly Cash-Inflow							

Figure 1.3.0: A Microsoft Excel Exhibit of Unit Mix Assumptions

Source: Author's Construct, 2021 as Guided by Market Research Findings

Figure 1.3.0 above gives a graphic summary of the underlying assumptions discussed above. Based on the figure, it is evident that given a 600-unit (1400 bed spaces) construction into GZ3 at the stated annual rental rates, the estimated total revenue per year is \$ 721 739.13 or GHC 4,149,999.99 equivalence. This implies that the estimated monthly revenue inflow should EPL make a market entry is \$ 60 144.93 or GHC 345,833.34equivalence.

10.2 Unit Mix Metrics Assumptions

This section discusses assumptions used in determining key unit metrics like the total land to buy, the number of blocks per unit, the floor plate(coverage) on which the building will be built. The following were assumed:

A. The total leasable space (building space which will generate revenue) is 26 000 sqm. (This was found by the sum of the respective total spaces in sqm of the unit types indicated in the unit mix assumptions – 3,000sqm (single-bed studio), 8, 000sqm (two-bed studios) & 15 000sqm (three-bed studio).

B. Circulation space (building space that cannot be rented out and does not generate revenue, for instance, corridors & balconies) is 20% of total leasable space (20% circulation space is industry standard).

C. Gross Buildable Space/Area (excluding parking), which is the sum total building space; total leasable space + circulation space is 32500sqm.

D. The financial projection analysis assumed a 30sqm per parking bay (an allocated area for parking) as recommended by EPL. Therefore, the total space for parking was assumed to be 5940 sqm (product of the 30sqm per parking bay & the 198-total parking (from 10.1 of the unit mix assumption).

E. Gross Building Space/Area (including parking) is 38440 sqm. The 38440 sqm was derived from the sum of the Gross Buildable Space/Area & Total Space for Parking (32500+5940).

F. For EPL's prospective 600 units, there would be six blocks with 100 units each. EPL's 600-unit construction yields 1400 bed spaces available. $1400/6 = 283$ beds/unit. Thus, an assumed six blocks yield 283 bed spaces with 100 units in each of the six blocks. Additionally, total space for parking per block is 990sqm (total space for parking/number of blocks)

G. The density per floor of each block is assumed to be 25. Per the market research, there are typically 15 – 20 students per floor. However, 15 - 20 rooms per floor yield 13 - 11 floors per

block. (Quite a high-rise building for the student rental market, especially with six floors being the highest number of floors across all visited cities). Thus, an assumed 25 rooms per floor to yield nine floors per block of unit was assumed.

H. Now, given that each block yields 100 units & 283 bed spaces, it was vital to calculate the unit-type mix on each floor. This calculation is pivotal in determining gross leasable space per floor (the floor plate/coverage), which will inform EPL on the total land size needed to be purchased to pursue this prospective construction. Based on estimated calculations, for each of the six blocks yielding 100 units, there will be 17 single-bed studios, 33 two-bed studios and 50 three-bed studios. These figures were derived from dividing the number of units per unit-type to be built (as illustrated in figure 1.3.0) by 6 (the number of blocks that will yield 600 units – 6). Thus, for single-bed studios, the calculation was $100 \text{ units (number of single-bed studio apartments to be built in the 600-unit construction) / the number of blocks (6) = 17 \text{ single-bed studios in each block}$. For two-bed studios, the calculation was $200 \text{ units (number of two-bed studios to be built in the 600-unit construction) / the number of blocks (6) = 33 \text{ two-bed studios in each block}$. Similarly, for three-bed studios, the calculation was $300 \text{ units (number of three-bed studios to be built in the 600-unit construction) / the number of blocks (6) = 50 \text{ three-bed studios in each block}$.

I. Having found the number of unit-type mixes in each 100 units per block, the financial projection calculated the number of unit-types which should be in each of the nine floors of this prospective building. After calculation, it was realized that each floor in 100-unit block yields two single-bed studios, four two-bed studios and five three-bed studios. These figures were calculated by dividing the number of unit-type mixes in each block by the number of floors in each block (nine). Thus, for a single-bed studio, the 17 single-bed studios per block were divided by the nine floors to yield two single-bed studio apartments on each floor. For a two-bed studio, the 33 two-bed studios per

block were divided by the nine floors to yield four two-bed studios per floor. Additionally, for a three-bed studio, the 50 three-bed studios per block were divided by the nine floors in each block to yield five three-bed studios per floor.

J. Having calculated the number of unit-type per floor for each block, the financial projection analysis calculated the size of leasable space (in sqm) per unit-type for a floor. It was revealed that for single-bed studios which will be two per floor, they would occupy a leasable space size of 53.57sqm. For two-bed studios (four per floor), they would occupy a leasable space size of 142.86 sqm. Lastly, for three-bed studios, which will be 5 per floor, it would occupy a leasable space size of 267.86sqm. The calculations were performed by finding the product of the number of unit-type per floor and the associated size of each unit-type. Thus, the calculation for a single-bed studio was two (the number of single-bed studios per floor) * 30(the estimated size of a single-bed studio). A two-bed studio, 4(the number of two-bed studio apartments per floor) * 40 (the estimated size of a two-bed studio). Lastly, the calculation for a three-bed studio was 5(the number of three-bed studios per floor) * 50(the estimated size of a three-bed studio).

K. An addition of the size of leasable space of the unit-type (53.57 sqm + 142.86 sqm + 267.86 sqm) is 464.29sqm per floor. Performing a 20% circulation space calculation on this figure yields 92.86 sqm per floor. Thus, the gross leasable space per floor is 557.14 sqm. This means that each of the blocks will have a floor plate of 557.14sqm.

L. Having determined that 557.14 sqm is the floor plate per block, the total land to buy per block is 1547.14sqm (calculated by summing the coverage space per block(557.14sqm) and total space for parking per block(1980sqm). Conclusively, the total land EPL must purchase for all six blocks is 9282.86 sqm (averagely 2 acres).

No of beds	1400		
Total number of units	600		
Average size of a unit	43.33		
Total leasable space in sqm	26000		
Circulation Space	6500		
Gross Buildable Space/ Area	32500		
Total Parking	198.00		
SQM/BAY	30.00		
Total space for parking	5940.00		
Gross Building Area(Including Parking)	38440.00		
Number of blocks for this 600 unit construction	6		
Number of Units per block	100		
Number of beds per block	233.33		
Density per floor(Bedspaces/floor)	25		
Number of floors per block	9		
Single-Bed Studio Apartment	17	2	53.57
Two-Bed Studio Apartment	33	4	142.86
Three-Bed Studio Apartment	50	5	267.86
Net Leasable Space per Floor			464.29
			92.86
Gross Leasable Space per floor(Floor Plate/Coverage)			557.14
Total Space for Parking Per Block	990		
Total Land to Buy per Block	1547.14		
Total Land to Buy for all Six Blocks	9282.86		

Figure 1.3.1: A Microsoft Excel Exhibit of Unit Mix Metrics Assumptions

Source: Author's Construct, 2021 as Guided by Market Research Findings

Figure 1.3.1 above denotes a pictorial view of the underlying unit mix metric assumptions duly discussed above. Based on the stated assumptions and calculations made, EPL would need a land size of 9282 sqm to put up three blocks, with 100 units (283 bed-spaces) each to complete the prospective 600 units (1400-bed spaces) construction if EPL decides to make a market entry in GZ3. Numeric values computed in this financial projection analysis were round to two decimal

places for standardization and consistency. The next section of the financial projection analysis focuses on the development costs EPL would assume if the firm decided to make a market entry decision.

10.3 Development Costs Assumptions

Inferring from a real estate industry repository, development costs in any property development comprise the direct and indirect costs incurred in constructing the property. According to Miles et al (2007), development costs are broadly classified into two groups, (a) hard costs and (b) soft costs. Hard costs represent all costs involved in the construction of the property. Hard costs classifications cover factors like material and labour, which are vital in any property development. On the other hand, soft costs are indirectly associated with property construction and take the form of building insurance, architectural and engineering fees, among others. The following assumptions were key in deriving EM's development cost for an expected market entry into GZ3.

- A. Building hard costs/sqm were assumed to be \$550(GHC 3162.5) as quoted by the EPL
- B. With the building hard costs/sqm pegged at \$550; the hard building costs is \$ 17,875,000(GHC 102,781,250). This was calculated by a product of the hard costs/sqm and the Gross Building space/Area of 32500 sqm (found in figure 1.3.1 under the unit mix metric assumption section)
- C. Parking costs/sqm were assumed to be \$150(GHC 862.5) as quoted by EPL.
- D. With the parking costs/sqm pegged at \$150; the parking hard costs is \$ 891,000(GHC 5,123,250). This was calculated by a product of the parking costs/sqm and the total space for parking of 5940 sqm (found in figure 1.3.1 under the unit mix metric assumption section)

E. Based on the assumptions mentioned above and calculations, total hard costs amount to \$ 18 766,000(GHC 107,904,500), calculated by the sum of building hard costs (\$17,875,000) and parking hard costs (\$ 891,000).

F. Soft costs were pegged at \$ 3,575,000(GHC 20,556,250). This was derived by finding 20% of building hard costs as industry practice.

G. Given the calculated hard costs and soft costs, the total project cost(excluding) land is \$ 22 341,000.00(GHC 128,460,750). However, with the 9282.6 sqm of land size needed by EPL to embark on this prospective project (if the firm decides to make market entry), it will cost the firm \$ 1,000,000. Therefore, the total project cost (including land) is \$ 23,341,000(GHC 134,210,750)

Figure 1.3.2 below gives a Microsoft excel exhibit of the associated development costs EPL would assume should a market entry decision into GZ 3 be made.

Development Costs	
Building Hard Cost/sqm	550.00
Building Hard Cost	17,875,000.00
Parking Cost/sqm	150.00
Parking Hard cost	891,000.00
Total Hard Cost	18,766,000.00
Soft cost	3,575,000.00
Total Project Cost	22,341,000.00
Total Project Cost (exc. Land)	22,341,000.00
Land Cost	1,000,000.00
Total Project Cost (Incl. Land)	23,341,000.00

*Figure 1.3.2: A Microsoft Excel Exhibit of Unit Mix Assumptions**Source: Author's Construct, 2021 as Guided by Market Research Findings***10.4 Capital Split Assumptions**

Drawing from a corporate finance repository, capital split denotes the equity or debt components invested in a particular project. Thus, capital split in this context refers to what percentage of equity and debt EPL needs to finance this project under consideration, given total project cost (including land) of \$ 23,341,00. The equity percentage component required for this project is 40%, while the debt percentage component needed for this project is 60% (quoted by EPL). The figure below is indicative of the Microsoft excel exhibit of the suggested capital split for this project.

Capital Split Scenario 1	% of Capital Split	Amount
Equity	40%	9,336,400.00
Debt	60%	14,004,600.00
Total	100%	23,341,000.00

*Figure 1.3.3: A Microsoft Excel Exhibit of Scenario 1 Capital Split**Source: Author's Construct, 2021.*

Based on the figure above, for a 40% equity component, Equilibrium would need to invest \$ 9,336.400(GHC 53,684,300) of shareholder funds to support a \$ 14 004600. (GHC 783,714,55.8) credit facility. The \$ 9 336 400 equity figure was calculated by finding 40% of the total project cost (including land). Similarly, the \$ 14 004 600 credit was calculated by finding 60% of the total

project cost (including land). With the capital split determined, the next section focuses on generating a statement of comprehensive income to assess net income cashflows over the years.

10.5 Net Income Cashflow Analysis Assumptions for 40% Equity & 60% Debt Capital Split Allocations – Scenario 1

In making this net income cash flow analysis, the financial projection analysis used the percentage by sales(revenue) approach and had the following assumptions.

A. Potential Gross Revenue (PGR) which represents the total rental income the prospective property will yield, is \$ 721739.13(GHC 4149999.98). PGR was derived from figure 1.3.0 from the unit mix assumption section. \$721739.13 represents the total revenue inflow per year for EPL should the firm make market entry. It was calculated by the product of rent/room/year and the number of unit-type units to be constructed. Thus, since 100 single-bed studios are expected to be constructed with a rent/year of \$869.57(GHC 5 000), its associated revenue/type/year is 100×869.57 , yielding \$86956.52(GHC 499999.99) revenue inflow for the 100 single-bed studios. Next, given 200 two-bed studios to be constructed with a rent/room/year \$1,217.39(GHC 6999.99 – rent per bed in that room is 3,500 and so total revenue per such room type is $3,500 \times 2 = \text{GHC } 699.99$), its associated revenue/type/year is $200 \times \$1,217.39$, yielding \$243,478.26(GHC 1399999.99) revenue inflow for the 200 two-bed studios. Lastly, given 300 three-bed studios to be constructed with a rent/year of \$1,304.35 (GHC 7500 – rent per bed in that room is 2,500; so total revenue per such room type is $2,500 \times 3 = \text{GHC } 7500$), its associated revenue/type/year is $300 \times \$1,304.35$, yielding \$391304.35(GHC 2250000) revenue inflow for the 300 three-bed studios.

B. There was a 95% occupancy rate assumption given the 50,000 + population and 60% + unmet market demand. It is critical to indicate that students are home for four months (the academic

calendar in a given 12-month period consists of 8months). Thus, 95% is the highest occupancy rate in this market. The financial projection analysis assumed that all rooms would be fully leased. Given the four-month period where the students will be home, this projection assumed a 5% constant vacancy loss on PGR, yielding an effective gross income (EGI) of \$ 685652.17(GHC 3942499.97).

D. Based on EPL recommendations, the following expense assumptions were made:

Expense Type	Assumption
Property Management	Estimated 5% of EGI for the first 8 years and an increase to 7% from year nine onwards.
Cleaners & Security Services	Estimated 3% of EGI for the first 8 years and an increase to 5% from year nine onwards.
Utilities (Water & Internet Connectivity)	Estimated 4% of EGI for the first 8 years and an increase to 6% from year nine onwards.
Contingency	Estimated a constant 5% of EGI

Table 1.1.9: A table displaying assumed expenses for capital split 1.

Source: Author's Financial Projection Analysis, 2021

E. It is imperative to indicate that with the 60% debt component of the capital split, this financial projection analysis performed a loan amortization (procedure of gradually writing off a credit

facility) to determine repayment of the loan facility with an 8% interest rate and 15-year period recommendation from EPL. The excel exhibit for the amortization is displayed in the figure below.

Year	Beginning Balance	Total Payment	Interest Paid	Principal Paid	Ending Balance
1	14,004,600.00	1,636,151.05	1,120,368.00	\$515,783.05	13,488,816.95
2	13,488,816.95	1,636,151.05	1,079,105.36	\$557,045.69	12,931,771.27
3	12,931,771.27	1,636,151.05	1,034,541.70	\$601,609.34	12,330,161.92
4	12,330,161.92	1,636,151.05	986,412.95	\$649,738.09	11,680,423.83
5	11,680,423.83	1,636,151.05	934,433.91	\$701,717.14	10,978,706.69
6	10,978,706.69	1,636,151.05	878,296.54	\$757,854.51	10,220,852.18
7	10,220,852.18	1,636,151.05	817,668.17	\$818,482.87	9,402,369.31
8	9,402,369.31	1,636,151.05	752,189.55	\$883,961.50	8,518,407.81
9	8,518,407.81	1,636,151.05	681,472.63	\$954,678.42	7,563,729.39
10	7,563,729.39	1,636,151.05	605,098.35	\$1,031,052.69	6,532,676.70
11	6,532,676.70	1,636,151.05	522,614.14	\$1,113,536.91	5,419,139.79
12	5,419,139.79	1,636,151.05	433,531.18	\$1,202,619.86	4,216,519.93
13	4,216,519.93	1,636,151.05	337,321.59	\$1,298,829.45	2,917,690.48
14	2,917,690.48	1,636,151.05	233,415.24	\$1,402,735.81	1,514,954.67
15	1,514,954.67	1,636,151.05	121,196.37	\$1,514,954.67	-
Total		\$24,542,265.68	10,537,665.68	\$14,004,600.00	

Figure 1.3.4: A Microsoft Excel Exhibit of Amortization Schedule

Source: Author's Construct, 2021

Based on figure 1.2.4 above, with a 60% debt component capital split, representative of a \$ 14004600 credit facility, EPL would be required to make \$1,636,151.05 payments over the 15 years towards servicing the debt.

F. EPL's net operating income (NOI) was calculated by subtracting the expenses incurred from EGI.

G. EPL's earnings before tax (EBT) was calculated by subtracting the amortization expense from NOI.

G. Based on findings from the market research, a 5% assumption was made.

Given these assumptions, figure 1.3.5 below is an excel exhibit representative of the base year calculations used in making the 15-year financial projection.

Capital Split - Scenario 1- 40% Equity & 60% Debt The Ammortized Loan Alternative Initial Capital Investment						
		Assumptions				
Revenue		% of Revenue			First 8-Years	9 Year Onwards
Potential Gross Revenue	721,739.13	100%		Growth	Constant	2%
Vacancy Loss	(36,086.96)	5%			Constant	
Effective Gross Income(EGI)	685,652.17	95%				
Expenses						
Property Management	(34,282.61)	5%		% of revenue	5%	7%
Cleaners & Security Services	(20,569.57)	3%		% of revenue	3%	5%
Utilities(Water & Internet Connectivity)	(27,426.09)	4%		% of revenue	4%	6%
Contingency	(34,282.61)	5%		Constant	Constant	Constant
Net Operating Income(NOI)	569,091.30	79%				
Ammortization expense	(1,636,151.05)	227%		% of debt	Constant	Constant
Earnings Before Tax(EBT)	(1,067,059.74)	148%				
Income tax expense	(53,352.99)	7%		% of EBT	5%	8%
Net Income/(Loss)	(1,120,412.73)	155%				

Figure 1.3.5: A Microsoft Excel Exhibit of Capital Split Base Year Projection

Source: Author's Construct, 2021

Given these base year figures, the figure below is representative of the financial projection made for 15 years.

Capital Split - Scenario 1- 40% Equity & 60% Debt The Ammortized Loan Alternative Initial Capital Investment		2021 - 2022 F	2022 - 2024 F	2025 F	2026 F
		Land Acquisition Negotiations	(23,341,000.00)		
Revenue					
Potential Gross Revenue				721,739.13	721,739.13
Vacancy Loss				(36,086.96)	(36,086.96)
Effective Gross Income(EGI)				685,652.17	685,652.17
Expenses					
Property Management				(32,568.48)	(32,568.48)
Cleaners & Security Services				(19,541.09)	(19,541.09)
Utilities(Water & Internet Connectivity)				(26,054.78)	(26,054.78)
Contingency				(34,282.61)	(34,282.61)
Net Operating Income(NOI)			(23,341,000.00)	573,205.22	573,205.22
Ammortization expense				(1,636,151.05)	(1,636,151.05)
Earnings Before Tax(EBT)			(23,341,000.00)	(1,062,945.83)	(1,062,945.83)
Income tax expense				(53,147.29)	(53,147.29)
Net Income/(Loss)				(1,116,093.12)	(1,116,093.12)

Figure 1.3.6: A Microsoft Excel Exhibit of Capital Split 1 Net Income Projection

Source: Author's Financial Projection Analysis, 2021

	Capital Split - Scenario 1- 40% Equity & 60% Debt The Ammortized Loan Alternative Initial Capital Investment	2027 F	2028 F	2029 F	2030 F
Revenue					
	Potential Gross Revenue	721,739.13	721,739.13	721,739.13	721,739.13
	Vacancy Loss	(36,086.96)	(36,086.96)	(36,086.96)	(36,086.96)
	Effective Gross Income(EGI)	685,652.17	685,652.17	685,652.17	685,652.17
Expenses					
	Property Management	(32,568.48)	(32,568.48)	(32,568.48)	(32,568.48)
	Cleaners & Security Services	(19,541.09)	(19,541.09)	(19,541.09)	(19,541.09)
	Utilities(Water & Internet Connectivity)	(26,054.78)	(26,054.78)	(26,054.78)	(26,054.78)
	Contingency	(34,282.61)	(34,282.61)	(34,282.61)	(34,282.61)
Net Operating Income(NOI)		573,205.22	573,205.22	573,205.22	573,205.22
Ammortization expense		(1,636,151.05)	(1,636,151.05)	(1,636,151.05)	(1,636,151.05)
Earnings Before Tax(EBT)		(1,062,945.83)	(1,062,945.83)	(1,062,945.83)	(1,062,945.83)
Income tax expense		(53,147.29)	(53,147.29)	(53,147.29)	(53,147.29)
Net Income/(Loss)		(1,116,093.12)	(1,116,093.12)	(1,116,093.12)	(1,116,093.12)

Figure 1.3.7: A Microsoft Excel Exhibit of Capital Split 1 Net Income Projection

Source: Author's Financial Projection Analysis, 2021

	Capital Split - Scenario 1- 40% Equity & 60% Debt The Ammortized Loan Alternative Initial Capital Investment	2031 F	2032 F	2033 F	2034 F
Revenue					
	Potential Gross Revenue	721,739.13	721,739.13	736,173.91	750,897.39
	Vacancy Loss	(36,086.96)	(36,086.96)	(36,808.70)	(37,544.87)
	Effective Gross Income(EGI)	685,652.17	685,652.17	699,365.22	713,352.52
Expenses					
	Property Management	(32,568.48)	(32,568.48)	(48,955.57)	(49,934.68)
	Cleaners & Security Services	(19,541.09)	(19,541.09)	(34,968.26)	(35,667.63)
	Utilities(Water & Internet Connectivity)	(26,054.78)	(26,054.78)	(41,961.91)	(42,801.15)
	Contingency	(34,282.61)	(34,282.61)	(34,968.26)	(35,667.63)
Net Operating Income(NOI)		573,205.22	573,205.22	538,511.22	549,281.44
Ammortization expense		(1,636,151.05)	(1,636,151.05)	(1,636,151.05)	(1,636,151.05)
Earnings Before Tax(EBT)		(1,062,945.83)	(1,062,945.83)	(1,097,639.83)	(1,086,869.60)
Income tax expense		(53,147.29)	(53,147.29)	(87,811.19)	(86,949.57)
Net Income/(Loss)		(1,116,093.12)	(1,116,093.12)	(1,185,451.01)	(1,173,819.17)

Figure 1.3.8: A Microsoft Excel Exhibit of Capital Split 1 Net Income Projection

Source: Author's Financial Projection Analysis

	Capital Split - Scenario 1- 40% Equity & 60% Debt The Ammortized Loan Alternative Initial Capital Investment	2035 F	2036 F	2037 F	2038 F
Revenue					
	Potential Gross Revenue	765,915.34	781,233.65	796,858.32	812,795.49
	Vacancy Loss	(38,295.77)	(39,061.68)	(39,842.92)	(40,639.77)
	Effective Gross Income(EGI)	727,619.57	742,171.96	757,015.40	772,155.71
Expenses					
	Property Management	(50,933.37)	(51,952.04)	(52,991.08)	(54,050.90)
	Cleaners & Security Services	(36,380.98)	(37,108.60)	(37,850.77)	(38,607.79)
	Utilities(Water & Internet Connectivity)	(43,657.17)	(44,530.32)	(45,420.92)	(46,329.34)
	Contingency	(36,380.98)	(37,108.60)	(37,850.77)	(38,607.79)
Net Operating Income(NOI)		560,267.07	571,472.41	582,901.86	594,559.90
Ammortization expense		(1,636,151.05)	(1,636,151.05)	(1,636,151.05)	(1,636,151.05)
Earnings Before Tax(EBT)		(1,075,883.97)	(1,064,678.63)	(1,053,249.18)	(1,041,591.15)
Income tax expense		(86,070.72)	(85,174.29)	(84,259.93)	(83,327.29)
Net Income/(Loss)		(1,161,954.69)	(1,149,852.92)	(1,137,509.12)	(1,124,918.44)

Figure 1.3.9: A Microsoft Excel Exhibit of Capital Split 1 Net Income Projection

Source: Author's Financial Projection Analysis, 2021

	Capital Split - Scenario 1- 40% Equity & 60% Debt The Ammortized Loan Alternative Initial Capital Investment	2038 F	2039 F
Revenue			
	Potential Gross Revenue	812,795.49	829,051.39
	Vacancy Loss	(40,639.77)	(41,452.57)
	Effective Gross Income(EGI)	772,155.71	787,598.83
Expenses			
	Property Management	(54,050.90)	(55,131.92)
	Cleaners & Security Services	(38,607.79)	(39,379.94)
	Utilities(Water & Internet Connectivity)	(46,329.34)	(47,255.93)
	Contingency	(38,607.79)	(39,379.94)
Net Operating Income(NOI)		594,559.90	606,451.10
Ammortization expense		(1,636,151.05)	(1,636,151.05)
Earnings Before Tax(EBT)		(1,041,591.15)	(1,029,699.95)
Income tax expense		(83,327.29)	(82,376.00)
Net Income/(Loss)		(1,124,918.44)	(1,112,075.95)

Figure 1.4.: A Microsoft Excel Exhibit of Capital Split 1 Net Income Projection

Source: Author's Financial Projection Analysis, 2021

Based on the figures above, it is evident that should EPL make a market entry into GZ3, the firm will incur a net loss throughout the 15 years. Careful analysis of the figures depicts that the amortization expense is significantly higher than the NOI and is a primary reason why EPL incurs net losses. Additionally, the 79% composition in expenditures from EGI is relatively high and is another reason why EPL incurs net losses. However, most importantly, the market's price points are relatively low. Additionally, the frequency of rental income (paid yearly) reduces PGR. This study attributes the market's unwillingness to pay higher price points for their perceived values to the amount of academic tuition fees charged by the selected institutions. Interactions with students within GZ3 revealed an average tuition fee range of GHC 2000 – GHC 5000 yearly. With this revelation, this study alludes that the market's unwillingness to pay higher price points is justified because the students are unlikely to incur higher expenditure on housing relative to tuition. Perhaps, higher tuition fees would serve as an indirect incentive for private-owned housing facilities to charge higher price points. Lastly, land acquisition negotiation lasts for two years (2021-2022), as shown in the exhibits, because two years is the average time spent on land acquisition negotiations in GZ 3(Field Data, 2021).

Next, this study juxtaposed the net income projection with the three main decision-making metrics: EM, IRR, and ROE. The table below denotes the respective metric outputs.

Decision Metrics	
Equity Multiple	0.13x
Return on Equity	-1.82
Internal Rate of Return	-4.00%

Figure 1.4.1: A Microsoft Excel Exhibit of Capital Split 1 Decision Metrics

Source: Author's Financial Projection Analysis, 2021

An analysis of the figure denotes an ROE of -1.82%, implying that equity invested by EPL into the prospective project is unproductive. Equity multiple is 0.13x which means EPL is making less cash than they invested throughout the forecast. The -4% IRR is representative of the fact that EPL makes unprofitable returns on its investments.

Given the net losses and how poor these decision metrics perform over the 15 years of projection, the researcher employed two alternative capital split strategies (called Scenario 2 & Scenario 3 in the following sections) to probe further the financial feasibility of EPL making a market entry in GZ3.

10.6 Alternative Capital Split Strategy – Scenario 2.

In scenario 2, the financial projection analysis assumed a capital split of 100% equity. Thus, the total project cost of \$ 23341000 would be entirely financed by EPL. In scenario 2, the following assumptions were made:

A. Potential Gross Revenue (PGR) which represents the total rental income the prospective property will yield, is \$ 721739.13(GHC 4149999.98). PGR was derived from figure 1.3.0 from the unit mix assumption section. \$721739.13 represents the total revenue inflow per year for EPL should the firm make market entry. It was calculated by the product of rent/room/year and the number of unit-type units to be constructed. Thus, since 100 single-bed studios are expected to be constructed with a rent/year of \$869.57(GHC 5 000), its associated revenue/type/year is 100×869.57 , yielding \$86956.52(GHC 499999.99) revenue inflow for the 100 single-bed studios. Next, given 200 two-bed studios are expected to be constructed with a rent/room/year \$1,217.39(GHC 6999.99 – rent per bed in that room is 3,500 and so total revenue per such room type is $3,500 \times 2 = \text{GHC } 699.99$), its associated revenue/type/year is $200 \times \$1,217.39$, yielding

\$243,478.26(GHC 1399999.99) revenue inflow for the 200 two-bed studios. Lastly, since 300 three-bed studios are expected to be constructed with a rent/year of \$1,304.35 (GHC 7500 – rent per bed in that room is 2,500 and so total revenue per such room type is $2,500 \times 3 = \text{GHC } 7500$), its associated revenue/type/year is $300 \times \$1,304.35$, yielding \$391304.35(GHC 2250000) revenue inflow for the 300 three-bed studios.

B. There was a 95% occupancy rate assumption given the 50,000 + population and 60% + unmet market demand. It is critical to indicate that students are home for four months (the academic calendar in a given 12-month period consists of 8months). Thus, 95% is the highest occupancy rate in this market. The financial projection analysis assumed that all rooms would be fully leased. Given the four-month period where the students will be home, this projection assumed a 5% constant vacancy loss on PGR, yielding an effective gross income (EGI) of \$ 685652.17.

D. Based on EPL recommendations, the following expense assumptions were made:

Expense Type	Assumption
Property Management	Estimated 5% of EGI for the first 8 years and an increase to 7% from year nine onwards.
Cleaners & Security Services	Estimated 3% of EGI for the first 8 years and an increase to 5% from year nine onwards.
Utilities (Water & Internet Connectivity)	Estimated 4% of EGI for the first 8 years and an increase to 6% from year nine onwards.
Contingency	Estimated a constant 5% of EGI

Table 1.2.0: A table displaying assumed expenses for capital split 2.

Source: Author's Financial Projection Analysis, 2021

F. EPL's net operating income (NOI) was calculated by subtracting the expenses incurred from the EGI.

G. EPL's earnings before tax (EBT) was calculated by subtracting the amortization expense from NOI.

G. Based on findings from the market research, a 5% assumption was made.

Given these assumptions, the figure below is an excel exhibit representative of the base year calculations used in making the financial projection.

	Capital Split - Scenario 2 - 100% Equity					
Revenue		% of Revenue			First 8-Years	9 Years Onwards
	Potential Gross Revenue	721,739.13	100%		Constant	2%
	Vacancy Loss	(36,086.96)	5%	Growth	Constant	
	Effective Gross Income	685,652.17	95%			
Expenses						
	Property Management	(34,282.61)	5%	% of revenue	5%	7%
	Cleaners & Security Services	(20,569.57)	3%	% of revenue	3%	5%
	Utilities(Water & Internet Connectivity)	(27,426.09)	4%	% of revenue	4%	6%
	Contingency	(34,282.61)	5%		Constant	Constant
Net Operating Income(NOI)		569,091.30	79%			
Earnings Before Tax(EBT)		569,091.30				
Income tax expense		(28,454.57)	4%	% of EBT	5%	8%
Net Income		540,636.74	75%			

Figure 1.4.2: A Microsoft Excel Exhibit of Capital Split 2 Base Year Net Income Projection

Source: Author's Construct, 2021

Given these base year figures, the figure below is representative of the financial projection made for 15 years.

Capital Split - Scenario 2 - 100% Equity					
		2021 - 2022 F	2022 - 2024 F	2025 F	2026 F
		Land Acquisition Negotiations			
Revenue	Potential Gross Revenue		(23,341,000.00)	721,739.13	721,739.13
	Vacancy Loss			(36,086.96)	(36,086.96)
	Effective Gross Income			685,652.17	685,652.17
Expenses					
	Property Management			(32,568.48)	(32,568.48)
	Cleaners & Security Services			(19,541.09)	(19,541.09)
	Utilities(Water & Internet Connectivity)			(26,054.78)	(26,054.78)
	Contingency			(34,282.61)	(34,282.61)
Net Operating Income(NOI)				573,205.22	573,205.22
Earnings Before Tax(EBT)				573,205.22	573,205.22
Income tax expense				(28,660.26)	(28,660.26)
Net Income				544,544.96	544,544.96

Figure 1.4.3: A Microsoft Excel Exhibit of Capital Split 2 Net Income Projection

Source: Author's Construct, 2021

Capital Split - Scenario 2 - 100% Equity					
		2027 F	2028 F	2029 F	2030 F
Revenue	Potential Gross Revenue	721,739.13	721,739.13	721,739.13	721,739.13
	Vacancy Loss	(36,086.96)	(36,086.96)	(36,086.96)	(36,086.96)
	Effective Gross Income	685,652.17	685,652.17	685,652.17	685,652.17
Expenses					
	Property Management	(32,568.48)	(32,568.48)	(32,568.48)	(32,568.48)
	Cleaners & Security Services	(19,541.09)	(19,541.09)	(19,541.09)	(19,541.09)
	Utilities(Water & Internet Connectivity)	(26,054.78)	(26,054.78)	(26,054.78)	(26,054.78)
	Contingency	(34,282.61)	(34,282.61)	(34,282.61)	(34,282.61)
Net Operating Income(NOI)		573,205.22	573,205.22	573,205.22	573,205.22
Earnings Before Tax(EBT)		573,205.22	573,205.22	573,205.22	573,205.22
Income tax expense		(28,660.26)	(28,660.26)	(28,660.26)	(28,660.26)
Net Income		544,544.96	544,544.96	544,544.96	544,544.96

Figure 1.4.4: A Microsoft Excel Exhibit of Capital Split 2 Net Income Projection

Source: Author's Construct, 2021

Capital Split - Scenario 2 - 100% Equity					
		2031 F	2032 F	2033 F	2034 F
Revenue	Potential Gross Revenue	721,739.13	721,739.13	736,173.91	750,897.39
	Vacancy Loss	(36,086.96)	(36,086.96)	(36,808.70)	(37,544.87)
Effective Gross Income		685,652.17	685,652.17	699,365.22	713,352.52
Expenses	Property Management	(32,568.48)	(32,568.48)	(48,955.57)	(49,934.68)
	Cleaners & Security Services	(19,541.09)	(19,541.09)	(34,968.26)	(35,667.63)
	Utilities(Water & Internet Connectivity)	(26,054.78)	(26,054.78)	(41,961.91)	(42,801.15)
	Contingency	(34,282.61)	(34,282.61)	(34,968.26)	(35,667.63)
	Net Operating Income(NOI)	573,205.22	573,205.22	538,511.22	549,281.44
Earnings Before Tax(EBT)		573,205.22	573,205.22	538,511.22	549,281.44
Income tax expense		(28,660.26)	(28,660.26)	(43,080.90)	(43,942.52)
Net Income		544,544.96	544,544.96	495,430.32	505,338.93

Figure 1.4.5: A Microsoft Excel Exhibit of Capital Split 2 Net Income Projection

Source: Author's Construct, 2021

Capital Split - Scenario 2 - 100% Equity					
		2035 F	2036 F	2037 F	2038 F
Revenue	Potential Gross Revenue	765,915.34	781,233.65	796,858.32	812,795.49
	Vacancy Loss	(38,295.77)	(39,061.68)	(39,842.92)	(40,639.77)
Effective Gross Income		727,619.57	742,171.96	757,015.40	772,155.71
Expenses	Property Management	(50,933.37)	(51,952.04)	(52,991.08)	(54,050.90)
	Cleaners & Security Services	(36,380.98)	(37,108.60)	(37,850.77)	(38,607.79)
	Utilities(Water & Internet Connectivity)	(43,657.17)	(44,530.32)	(45,420.92)	(46,329.34)
	Contingency	(36,380.98)	(37,108.60)	(37,850.77)	(38,607.79)
	Net Operating Income(NOI)	560,267.07	571,472.41	582,901.86	594,559.90
Earnings Before Tax(EBT)		560,267.07	571,472.41	582,901.86	594,559.90
Income tax expense		(44,821.37)	(45,717.79)	(46,632.15)	(47,564.79)
Net Income		515,445.70	525,754.62	536,269.71	546,995.11

Figure 1.4.6: A Microsoft Excel Exhibit of Capital Split 2 Net Income Projection

Source: Author's Construct, 2021

Capital Split - Scenario 2 - 100% Equity			
		2038 F	2039 F
Revenue			
	Potential Gross Revenue	812,795.49	829,051.39
	Vacancy Loss	(40,639.77)	(41,452.57)
	Effective Gross Income	772,155.71	787,598.83
Expenses			
	Property Management	(54,050.90)	(55,131.92)
	Cleaners & Security Services	(38,607.79)	(39,379.94)
	Utilities(Water & Internet Connectivity)	(46,329.34)	(47,255.93)
	Contingency	(38,607.79)	(39,379.94)
Net Operating Income(NOI)		594,559.90	606,451.10
Earnings Before Tax(EBT)		594,559.90	606,451.10
Income tax expense		(47,564.79)	(48,516.09)
Net Income		546,995.11	557,935.01

Figure 1.4.7: A Microsoft Excel Exhibit of Capital Split 2 Net Income Projection

Source: Author's Construct, 2021

Unlike scenario 1, the net income cashflow projections in scenario 2 are optimistic when EPL assumes 100% equity. However, NOI remains unchanged (79%). Given that the sum of all the positive cash outflows over the 15 year-period yields \$ 14225330(compared to the total project cost of \$ 23341000), market entry in GZ3 is still not profitable for EPL.

Next, this study juxtaposed the net income projection with the three main decision-making metrics: EM, IRR and ROE. The table below denotes the respective metric outputs.

Decision Metrics	
Equity Multiple	0.61x
Return on Equity	0.61
Internal Rate of Return	-4%

Figure 1.4.8: A Microsoft Excel Exhibit of Capital Split 2 Decision Metrics

Source: Author's Financial Projection Analysis, 2021

From the table, EM & ROE are positive. An ROE of 0.61% indicates that EPL is inefficient with its equity capital per the prospective project. The 0.61x(less than 1) EM depicts that EPL will get back less cash than its initial capital investment over the 15 years. Lastly, the negative-yielding IRR means that the aggregate amount of net income cash flows over the 15 years is significantly less than the EPL's initial investment of \$23 341 000 invested.

10.7 Alternative Capital Split Strategy – Scenario 3

In scenario 3, the study found EPL's optimal capital split for this prospective development. Drawing from a corporate finance repository, an optimal capital split represents the right mix of debt and equity in a project which yields the maximum returns or minimal loss. Per the financial analysis modeled in Microsoft Excel, EPL's optimal capital split is 10% debt and 90% equity. This means that at 10% debt and 90% equity, EPL makes the least loss from this prospective project. In addition to the optimal capital split, the financial analysis proposed an interest-only loan approach on the debt component instead of an amortized debt. The difference between an amortized and interest-only debt is while EPL makes equal amounts of repayment (principal & interest) across the 15 years, with an amortized loan option, in an interest-only loan option, EPL makes equal amounts of only interest payments on the debt and in the last year of holding the debt, EPL pays the interest for that period plus the principal. The study believes that an interest-only debt strategy will ease the repayment pressure of EPL (given that only interest payments are required). This will allow EPL to invest funds into other short-term projects to generate profits towards servicing the principal amount outstanding in the last year of holding the debt. The table below summarizes the nominal figures required in the scenario of an optimal capital split.

Scenario 3	% of Capital Split	Amount
Equity	90%	21,006,900.00
Debt	10%	2,334,100.00
Total	100%	23,341,000.00

Figure 1.4.9: A Microsoft Excel Exhibit of Capital Split 3

Source: Author's Construct, 2021

In scenario 3, the researcher made the following assumptions:

A. Potential Gross Revenue (PGR) which represents the total rental income the prospective property will yield, is \$ 721739.13(GHC 4149999.98). PGR was derived from figure 1.3.0 from the unit mix assumption section. \$721739.13 represents the total revenue inflow per year for EPL should the firm make market entry. It was calculated by the product of rent/room/year and the number of unit-type units to be constructed. Thus, since 100 single-bed studios are expected to be constructed with a rent/year of \$869.57(GHC 5 000), its associated revenue/type/year is 100×869.57 , yielding \$86956.52(GHC 499999.99) revenue inflow for the 100 single-bed studios. Next, given 200 two-bed studios are expected to be constructed with a rent/room/year \$1,217.39(GHC 6999.99 – rent per bed in that room is 3,500 and so total revenue per such a room type is $3,500 \times 2 = \text{GHC } 699.99$), its associated revenue/type/year is $200 \times \$1,217.39$, yielding \$243,478.26(GHC 1399999.99) revenue inflow for the 200 two-bed studios. Lastly, since 300 three-bed studios are expected to be constructed with a rent/year of this room-type \$1,304.35 (GHC 7500 – rent per bed in that room is 2,500 and so total revenue per such room type is $2,500 \times 3 = \text{GHC } 7500$), its associated revenue/type/year is $300 \times \$1,304.35$, yielding \$391304.35(GHC 2250000) revenue inflow for the 300 three-bed studios.

B. There was a 95% occupancy rate assumption given the 50,000 + population and 60% + unmet market demand. It is critical to indicate that students are home for four months (the academic calendar in a given 12-month period consists of 8months). Thus, 95% is the highest occupancy rate in this market. The financial projection analysis assumed that all rooms would be fully leased. Given the four-month period where the students will be home, this projection assumed a 5% constant vacancy loss on PGR, yielding an effective gross income (EGI) of \$ 685652.17.

D. Based on EPL recommendations, the following expense assumptions were made

Expense Type	Assumption
Property Management	Estimated 5% of EGI for the first 8 years and an increase to 7% from year nine onwards.
Cleaners & Security Services	Estimated 3% of EGI for the first 8 years and an increase to 5% from year nine onwards.
Utilities (Water & Internet Connectivity)	Estimated 4% of EGI for the first 8 years and an increase to 6% from year nine onwards.
Contingency	Estimated a constant 5% of EGI

Table 1.2.1: A table displaying assumed expenses for capital split 3.

Source: Author's Financial Projection Analysis, 2021

E. It is key to indicate that with the 10% debt component of the optimal capital split, this financial projection analysis performed an interest-only loan schedule to determine the periodic repayment of the loan facility. The excel exhibit for the interest-only loan schedule is displayed in the figure below.

Year	Beginning Balance	Total Payment	Interest	Principal Paid	Ending Balance
0	2,334,100.00	0.00	0.00	0.00	2,334,100.00
1	2,334,100.00	186728.00	186728.00	0	2,334,100.00
2	2334100.00	186728.00	186728.00	0.00	2334100.00
3	2334100.00	186728.00	186728.00	0.00	2334100.00
4	2334100.00	186728.00	186728.00	0.00	2334100.00
5	2334100.00	186728.00	186728.00	0.00	2334100.00
6	2334100.00	186728.00	186728.00	0.00	2334100.00
7	2334100.00	186728.00	186728.00	0.00	2334100.00
8	2334100.00	186728.00	186728.00	0.00	2334100.00
9	2334100.00	186728.00	186728.00	0.00	2334100.00
10	2334100.00	186728.00	186728.00	0.00	2334100.00
11	2334100.00	186728.00	186728.00	0.00	2334100.00
12	2334100.00	186728.00	186728.00	0.00	2334100.00
13	2334100.00	186728.00	186728.00	0.00	2334100.00
14	2334100.00	186728.00	186728.00	0.00	2334100.00
15	2334100.00	186728.00	186728.00	0.00	2334100.00
15	2334100.00	2520828.00		2520828.00	-186728.00
Total		\$5,321,748.00	\$2,800,920.00	\$2,520,828.00	

Figure 1.5.0: A Microsoft Excel Exhibit of Capital Split 3 Interest-Only Debt

Source: Author's Financial Projection Analysis, 2021

Analysis of the figure above indicates that excluding the 15th year (last year), should EPL go in for an interest-only loan, EPL will be required to make interest payments of \$ 186728. Comparing periodic repayments in the interest-only loan schedule to the amortized loan repayments, the interest-only loan strategy provides some form of repayment flexibility for EPL. It is, however, pivotal to indicate that in the 15th year, instead of a payment of \$ 186728(interest), EPL would make a payment of \$ 2 520828(the principal loan amount of \$2334100 plus the interest for the 15th year - \$ 186728) as the interest-only logic opines.

F. EPL's net operating income (NOI) was calculated by subtracting the expenses incurred from the EGI.

G. EPL's earnings before tax (EBT) was calculated by subtracting the debt service from NOI.

G. Based on findings from the market research, a 5% assumption was made.

Given these assumptions, the figure below is an excel exhibit representative of the base year calculations used in making the financial projection under this scenario.

Capital Split - Scenario 3- 90% Equity & 10% Debt The Interest-Only Loan Alternative Initial Capital Investment						
		Statement of Comprehensive Income				
Revenue			% of Revenue		First 8-Years	9-Year Onwards
	Potential Gross Revenue	721,739.13	100%	Growth	Constant	2%
	Vacancy Loss	(36,086.96)	5%		Constant	
	Effective Gross Income(EGI)	685,652.17	95%			
Expenses						
	Property Management	(34,282.61)	5%	% of revenue	5%	7%
	Cleaners & Security Services	(20,569.57)	3%	% of revenue	3%	5%
	Utilities(Water & Internet Connectivity)	(27,426.09)	4%	% of revenue	4%	6%
	Contingency	(34,282.61)	5%	Constant		
Net Operating Income(NOI)		569,091.30	79%			
Debt Service		(186,728.00)	26%	% of debt	26%	
EBT		382,363.30	53%			
Income tax expense		(19,118.17)	3%	% of EBT	5%	8%
Net Income/(Loss)		363,245.14	50%			

Figure 1.5.1: A Microsoft Excel Exhibit of Capital Split 3 Base Year Net Income Projection

Source: Author's Construct, 2021

Given these base year figures, the figure below is representative of the financial projection made for 15 years.

	Capital Split - Scenario 3- 90% Equity & 10% Debt The Interest-Only Loan Alternative Initial Capital Investment	2021 - 2022 F Land Acquisition Negotiations	2022 - 2024 F (23,341,000.00)	2025 F	2026 F
Revenue					
	Potential Gross Revenue			721,739.13	721,739.13
	Vacancy Loss			(36,086.96)	(36,086.96)
	Effective Gross Income(EGI)			685,652.17	685,652.17
Expenses					
	Property Management			(32,568.48)	(32,568.48)
	Cleaners & Security Services			(19,541.09)	(19,541.09)
	Utilities(Water & Internet Connectivity)			(26,054.78)	(26,054.78)
	Contingency			(34,282.61)	(34,282.61)
Net Operating Income(NOI)			(23,341,000.00)	573,205.22	573,205.22
Debt Service				(186,728.00)	(186,728.00)
EBT			(23,341,000.00)	386,477.22	386,477.22
Income tax expense				(19,323.86)	(19,323.86)
Net Income/(Loss)			(23,341,000.00)	367,153.36	367,153.36

Figure 1.5.2: A Microsoft Excel Exhibit of Capital Split 3 Net Income Projection

Source: Author's Financial Projection Analysis, 2021

	Capital Split - Scenario 3- 90% Equity & 10% Debt The Interest-Only Loan Alternative Initial Capital Investment	2027 F	2028 F	2029 F	2030 F
Revenue					
	Potential Gross Revenue	721,739.13	721,739.13	721,739.13	721,739.13
	Vacancy Loss	(36,086.96)	(36,086.96)	(36,086.96)	(36,086.96)
	Effective Gross Income(EGI)	685,652.17	685,652.17	685,652.17	685,652.17
Expenses					
	Property Management	(32,568.48)	(32,568.48)	(32,568.48)	(32,568.48)
	Cleaners & Security Services	(19,541.09)	(19,541.09)	(19,541.09)	(19,541.09)
	Utilities(Water & Internet Connectivity)	(26,054.78)	(26,054.78)	(26,054.78)	(26,054.78)
	Contingency	(34,282.61)	(34,282.61)	(34,282.61)	(34,282.61)
Net Operating Income(NOI)		573,205.22	573,205.22	573,205.22	573,205.22
Debt Service		(186,728.00)	(186,728.00)	(186,728.00)	(186,728.00)
EBT		386,477.22	386,477.22	386,477.22	386,477.22
Income tax expense		(19,323.86)	(19,323.86)	(19,323.86)	(19,323.86)
Net Income/(Loss)		367,153.36	367,153.36	367,153.36	367,153.36

Figure 1.5.3: A Microsoft Excel Exhibit of Capital Split 3 Net Income Projection

Source: Author's Financial Projection Analysis, 2021

	Capital Split - Scenario 3- 90% Equity & 10% Debt The Interest-Only Loan Alternative Initial Capital Investment	2031 F	2032 F	2033 F	2034 F
Revenue					
	Potential Gross Revenue	721,739.13	721,739.13	736,173.91	750,897.39
	Vacancy Loss	(36,086.96)	(36,086.96)	(36,808.70)	(37,544.87)
	Effective Gross Income(EGI)	685,652.17	685,652.17	699,365.22	713,352.52
Expenses					
	Property Management	(32,568.48)	(32,568.48)	(48,955.57)	(49,934.68)
	Cleaners & Security Services	(19,541.09)	(19,541.09)	(34,968.26)	(35,667.63)
	Utilities(Water & Internet Connectivity)	(26,054.78)	(26,054.78)	(41,961.91)	(42,801.15)
	Contingency	(34,282.61)	(34,282.61)	(34,968.26)	(35,667.63)
Net Operating Income(NOI)		573,205.22	573,205.22	538,511.22	549,281.44
Debt Service		(186,728.00)	(186,728.00)	(186,728.00)	(186,728.00)
EBT		386,477.22	386,477.22	351,783.22	362,553.44
Income tax expense		(19,323.86)	(19,323.86)	(28,142.66)	(29,004.28)
Net Income/(Loss)		367,153.36	367,153.36	323,640.56	333,549.17

Figure 1.5.4: A Microsoft Excel Exhibit of Capital Split 3 Net Income Projection

Source: Author's Financial Projection Analysis, 2021

	Capital Split - Scenario 3- 90% Equity & 10% Debt The Interest-Only Loan Alternative Initial Capital Investment	2035 F	2036 F	2037 F	2038 F
Revenue					
	Potential Gross Revenue	765,915.34	781,233.65	796,858.32	812,795.49
	Vacancy Loss	(38,295.77)	(39,061.68)	(39,842.92)	(40,639.77)
	Effective Gross Income(EGI)	727,619.57	742,171.96	757,015.40	772,155.71
Expenses					
	Property Management	(50,933.37)	(51,952.04)	(52,991.08)	(54,050.90)
	Cleaners & Security Services	(36,380.98)	(37,108.60)	(37,850.77)	(38,607.79)
	Utilities(Water & Internet Connectivity)	(43,657.17)	(44,530.32)	(45,420.92)	(46,329.34)
	Contingency	(36,380.98)	(37,108.60)	(37,850.77)	(38,607.79)
Net Operating Income(NOI)		560,267.07	571,472.41	582,901.86	594,559.90
Debt Service		(186,728.00)	(186,728.00)	(186,728.00)	(186,728.00)
EBT		373,539.07	384,744.41	396,173.86	407,831.90
Income tax expense		(29,883.13)	(30,779.55)	(31,693.91)	(32,626.55)
Net Income/(Loss)		343,655.94	353,964.86	364,479.95	375,205.35

Figure 1.5.5: A Microsoft Excel Exhibit of Capital Split 3 Net Income Projection

Source: Author's Financial Projection Analysis, 2021

	Capital Split - Scenario 3- 90% Equity & 10% Debt The Interest-Only Loan Alternative Initial Capital Investment	2037 F	2038 F	2039 F
Revenue				
	Potential Gross Revenue	796,858.32	812,795.49	829,051.39
	Vacancy Loss	(39,842.92)	(40,639.77)	(41,452.57)
	Effective Gross Income(EGI)	757,015.40	772,155.71	787,598.83
Expenses				
	Property Management	(52,991.08)	(54,050.90)	(55,131.92)
	Cleaners & Security Services	(37,850.77)	(38,607.79)	(39,379.94)
	Utilities(Water & Internet Connectivity)	(45,420.92)	(46,329.34)	(47,255.93)
	Contingency	(37,850.77)	(38,607.79)	(39,379.94)
Net Operating Income(NOI)		582,901.86	594,559.90	606,451.10
Debt Service		(186,728.00)	(186,728.00)	(186,728.00)
EBT		396,173.86	407,831.90	419,723.10
Income tax expense		(31,693.91)	(32,626.55)	(33,577.85)
Net Income/(Loss)		364,479.95	375,205.35	386,145.25

Figure 1.5.6: A Microsoft Excel Exhibit of Capital Split 3 Net Income Projection

Source: Author's Financial Projection Analysis, 2021

Scenario 3(an optimal capital split and an interest-only loan) affords EPL positive cashflows throughout the 15 years, just like scenario 2. Unlike scenario 1, the debt service is significantly lower than NOI. However, a sum of the cash flows for the 15 years indicates that EPL would generate \$ 5,417,867.93(76% less than the original capital investment of \$ 23 341 000). Similar to inferences made in scenario 1, this study attributes the market's unwillingness to pay higher price points for their perceived values to the amount of academic tuition fees charged by the selected institutions. Interactions with students within GZ3 revealed an average tuition fee range of GHC 2000 – GHC 5000 yearly. With this revelation, this study alludes that the market's unwillingness to pay higher price points is justified because the students are unlikely to incur higher expenditure on housing relative to tuition.

Juxtaposing the net income projection with the three main decision-making metrics: EM, IRR and ROE. The table below denotes the respective metric outputs for scenario 3.

Decision Metrics	
Equity Multiple	0.39x
Return on Equity	0.26
Internal Rate of Return(IRR)	-14%

Figure 1.5.7: A Microsoft Excel Exhibit of Capital Split 3 Decision Metrics

Source: Author's Financial Projection Analysis, 2021

An analysis of the table indicates an ROE of 0.26%, implying that equity invested by EPL into the prospective project is unproductive, given the 15% - 20% industry ROE benchmark. EM of 0.39x indicates that EPL gets back significantly less cash than its initial capital investment. Lastly, the -14% IRR depicts unprofitable returns on EPL's investments, just like in scenario 1.

10.8 Conclusions from the Financial Projection Analysis

Having undergone the financial projection analysis, it is evident that EPL's entry into the student rental housing market, ideally GZ3(as duly informed by the market research), is not financially profitable to EPL over the 15-year projection recommended by EPL. In scenario 1(60% debt and 40% equity capital split), EPL makes net losses over the 15 years. Given this, it is not surprising to realize for scenario 1; EM is as low as 0.13x while ROE is -1.82% and IRR is -4%. In scenario 2(all-equity capital split), though EPL makes positive net income cashflows, these cashflows are significantly less than the total project cost. Thus, the 0.61x EM, 0.61% ROE and -4% IRR for scenario 2 are unsurprising. An optimal capital split, allowing EPL to go in for a 10% credit facility and 90% equity, interlaced with an interest-only loan structure, the firm makes positive cashflows. However, just like scenario 2, these cashflows are significantly less than the total project cost, as evidenced by the 0.39x EM, 0.26%ROE and -14% IRR. Across all scenarios, the study realizes that EPL's NOI is quite a high percentage (79%) of its EGI. This study strongly

believes a reduced expense will reduce NOI, consequently increasing year on year EGI. Additionally, the market's unwillingness to pay higher price points for their market perceived values, interlaced with the yearly frequency of rental income instead of a semi-annual frequency, is primarily responsible for EPL's low EGI across the years.

10.8 Who Should Use This Business Feasibility Research Report and When Should It Be Used

In conjunction with potential partner development team members, EPL is the key user of this Business Feasibility Research Report. Given the unit-mix types detailed in this business feasibility research report, this tool will be vital in mapping out a fundamental design for this prospective project. The Business Feasibility Research Report will help EPL in attempting to meet market perceived values. Additionally, this Business Feasibility Research Report will be instrumental in determining whether or not EPL could make market entry into GZ3 of the student rental housing market. Logically, the components of this Business Feasibility Research Report will inform EPL on market price point, product offerings and occupancy rates should EPL decide to make market entry.

APPENDICES

APPENDICE 1: Consent Form for Questionnaire for the students of the selected universities participating in this research.

This student research is part of a Bachelor's Degree Capstone Project being conducted by the Business Administration department, Ashesi University College. The study is based on a selected sample in the Greater Accra Region, within which you fall. Thus, your participation is essential to the schedule. The survey takes approximately ten minutes to complete. The outcome of this research will enhance knowledge of the prospects and opportunities of student rental housing in Accra, Ghana.

Participation in this study is voluntary, and all who participate will remain anonymous. You stand a chance to win exciting gifts ranging from a fully paid movie for two at Silverbird plus free lunch at Golden Tulip, 20GB of data for two months amongst others. To stand a chance of winning, you only need to complete the survey and include both your email address and that of either of your parent or guardian (Terms & conditions apply, please see bottom of the survey)

There are no mental and physical hazards associated with this research study. Kindly contact me at [samuel.owusu-acheaw@ashesi.edu.gh/+233 50 398 7529] if you have any questions about this research. You may also contact my supervisor, Jewel Thompson at Ashesi University [jewel.thompson@ashesi.edu.gh].

The Human Subjects Review Committee Board at Ashesi University has reviewed all the research protocols for this research. Kindly direct any concerns of the review and approval process to the committee at irb@ashesi.edu.gh

All information provided will be kept confidential.

APPENDICE 2: Consent Form for Interviews university officials and private hostel managers of the selected universities participating in this research.

This student research is part of a Bachelor's Degree Capstone Project being conducted by the Business Administration department, Ashesi University College. The study is based on a selected sample in the Greater Accra Region, within which you fall. Thus, your participation is essential to the schedule. The interview takes approximately sixty minutes to complete. The outcome of this research will enhance knowledge of the prospects and opportunities of student rental housing in Accra, Ghana.

Participation in this study is voluntary, and all who participate will remain anonymous. Throughout this interview, I would engage you on the state of student housing in your institution. I would explore themes like the size of the unmet student, rental rates on and off campus, any available student housing pipeline development and their respective estimated year of completion, the amenities close to the student housing facilities, occupancy and vacancy rates of the available student housing. This is a semi-structured interview. As such, I may ask follow-up questions based on responses you may give to certain questions I pose.

There are no mental and physical hazards associated with this research study. Kindly contact me at [samuel.owusu-acheaw@ashesi.edu.gh/+233 50 398 7529] if you have any questions about this research. You may also contact my supervisor, Jewel Thompson at Ashesi University [jewel.thompson@ashesi.edu.gh].

The Human Subjects Review Committee Board at Ashesi University has reviewed all the research protocols for this research. Kindly direct any concerns of the review and approval process to the committee at irb@ashesi.edu.gh

All information provided will be kept confidential.

☐ **I do not want to have this interview recorded.**

☐ **I am willing to have this interview recorded:**

Signed: _____

Date: _____

APPENDICE 3: Questionnaire

1. After fully reading and understanding the statement above, are you willing to participate in the survey?

A. Yes

B. No

2. Which of the following reasons best describes your unwillingness to participate in the survey?

A. Survey is too long

B. Survey goes contrary to personal beliefs & value

C. Not interested

3. Let's get started!

What is the name of your university?

A. Radford University

B. Ghana Institute of Management & Public Administration, GIMPA

C. University of Professional Studies, UPSA

D. University of Ghana, Legon

E. Lancaster University

F. Knustford University

G. Webster University

4. What is your age range?

A. 16 - 20 years

B. 21 - 25 years

C. 26 - 30 years

D. 31 years & above

5. What is your degree type?

A. Bachelor of Arts

B. Bachelor of Science

C. Master of Science

D. Master of Arts

E. MPHIL

F. DPHIL

G. HND/Diploma

H. PHD

6. Which of the following areas relates to your course study?

A. Agriculture & Natural Resources Conservation

B. Architecture

C. Area, Ethnic & Multidisciplinary Studies

D. Arts: Visual & Performing

E. Business Management

F. Communications

G. Community, Family & Personal Services

H. Education

I. Computer Science & Mathematics

J. Engineering

K. Foreign & Local Languages

L. Health Sciences & Technologies

M. Health Administration & Assistance

N. Philosophy, Religion & Technology

O. Repair, Production & Construction

P. Sciences: Biological & Physical

Q. Social Sciences & Law

R. Humanities

S. Others

7. What is your expected date of graduation?

A. 2021

B. 2022

C. 2023

D. 2024

E. 2025

F. 2026

G. 2027

H. 2028

8. What is your gender?

A. Male

B. Female

C. Prefer not to disclose

9. What is your nationality?

A. Ghanaian

B. Nigerian

C. Gambian

D. Ivorian

E. Rwandese

F. South African

G. Guinean

H. Cameroonian

I. Tanzanian

J. Other

10. On a scale of 1 star to a scale of 5star, how important is having a housing facility available on or near campus to you?

Kindly note that 5 star depicts high importance to you, and 1 star depicts low importance.

11. Kindly briefly state why having a housing facility available to you on or near campus is or is not of importance to you.

12. Ride on with me

What is your current hostel arrangement?

- A. University-Owned Hostel Facility
- B. Private-Owned Hostel Facility
- C. I come from home/Live with a Friend/Relative

University-Owned Route

13. What is the name of your university-owned hostel facility?

Please enter your response.

14. Which of the following reasons aligns with your preference for a university-owned hostel facility? Please select all that apply

- A. Amenities Available
- B. Affordable Pricing
- C. Proximity to Class
- D. Good Security
- E. Quality Internet Connectivity
- F. Stable Water Supply
- G. Stable Electricity
- H. Other

15. How long have you lived in your university-owned hostel facility?

- A. 1 year
- B. 2 years
- C. 3 years
- D. 4 years
- E. 5 years & above

16. How do you commute from your university-owned hostel facility to your faculty?

- A. Transport/Shuttle Services
- B. Uber
- C. Walking
- D. Personal Car
- E. Other

17. What type of amenities does your university-owned hostel facility have? Please select all that apply.

- A. Swimming Pool
- B. Parking Lot
- C. Gymnasium
- D. Stable & Back-Up Power Supply
- E. Transport/Shuttle Services
- F. Reliable Security Services
- G. Stable & Constant Water Supply
- H. Quality Internet Connectivity
- I. Other

18. Which of the following additional features do you have in your room? Please select all that apply.

- A. Bathroom & toilet facility
- B. Beautiful/colourful interior design & décor
- C. Kitchen facility

D. Television set

E. Air conditioner

F. Other

19. How many roommates do you have?

A. Zero

B. One

C. Two

D. Three

E. Four

F. Five & Above

20. How much do you pay for your university-owned hostel facility per year?

A. Below GHC 800

B. GHC 1,600 - GHC 2,200

C. GHC 2,300 - GHC 4,000

D. GHC 4,100 - GHC 6,000

E. GHC 6,100 & above

21. Which of the following is a shared area within your university-owned hostel facility? Please select all that apply.

A. Kitchen facility

B. Television room

C. Study room

D. Bathroom & toilet facility

E. Other

22. Which of the following areas would you prefer to be exclusive? Please select all that apply.

A. Study room

B. Bathroom & toilet facility

C. Kitchen facility

D. Television room

E. Other

Private-Owned Hostel Route

23. What is the name of your private-owned hostel facility?

Please enter response

24. Kindly indicate the location of your private-owned hostel facility? E.g. East Legon, Madina, Haatso etc.

25. Is your private-owned hostel facility located on-campus or off-campus?

A. On-campus

B. Off-campus

26. Which of the following reasons align with your preference for an on-campus private hostel facility? Please select all that apply

A. Proximity to class

B. Good security

C. Quality internet connectivity

D. Stable electricity

E. Stable water supply

F. Other

27. Which of the following reasons align with your preference for an off-campus private hostel facility?

A. Amenities available

B. Affordable housing

C. Other

28. How do you commute to your faculty from your private-owned hostel facility?

A. Uber

B. Personal car

C. Walking

D. Off campus transport service (if any)

29. What is the distance between your faculty and your private-owned hostel facility?

A. Less than 5 minutes' drive

B. Between 10 - 20 minutes' drive

C. Between 31 - 45 minutes drivee

D. 46 minutes' drive & above

E. Other

30. How long have you lived in your private-owned hostel facility?

A. 1 year

B. 2 years

- C. 3 years
- D. 4 years
- E. 5 years & above

31. What kind of amenities does your private-owned hostel facility have?

Please select all that apply.

- A. Swimming pool
- B. Gymnasium
- C. Parking lot
- D. Stable & back-up power supply
- E. Stable & constant water supply
- F. Quality internet connectivity
- G. Reliable security services
- H. Transport/ Shuttle services
- I. Other

32. Which of the following additional features do you have in your room? Please select all that apply.

- A. Bathroom & toilet facility
- B. Beautiful/colourful interior design & décor
- C. Kitchen facility
- D. Television Set
- E. Air conditioner
- F. Other

33. How much do you pay for your private-owned hostel facility per year?

- A. Below GHC 800
- B. GHC 1,600 - GHC 2,200
- C. GHC 2,300 - GHC 4,000
- D. GHC 4,100 - GHC 6,000
- E. GHC 6,100 & above

34. How many roommates do you have?

- A. Zero
- B. One
- C. Two
- D. Three
- E. Four
- F. Other

35. Which of the following is a shared area within your private-owned hostel facility? Please select all that apply.

- A. Study room
- B. Bathroom & toilet facility
- C. Kitchen facility
- D. Television room
- E. Other

36. Which of the following areas would you prefer to be exclusive? Please select all that apply

- A. Study room

B. Bathroom & toilet facility

C. Kitchen facility

D. Television room

E. Other

I come from home/Live with a Friend/Relative Route

37. Which of the following best aligns with why you commute from home?

A. Convenience

B. Lack of hostel options

C. Exorbitant housing prices on and off campus

D. Health Reasons

38. Here comes the fun part!

Would you like to remain in your private-owned hostel facility or move to a university-owned hostel facility?

A. Remain in a private-owned hostel facility

B. Move to a university-owned hostel facility

39. Would you like to remain in your university-owned hostel facility or move to a private-owned hostel facility?

A. Remain in university-owned hostel facility

B. Move to a private-owned hostel facility

40. Which of the following best aligns with your choice for remaining in a private-owned hostel?

Please select all that apply

- A. Affordable pricing
- B. Proximity to town
- C. Proximity to class
- D. Better amenities (reliable internet, stable water supply & electricity among others)
- E. Independence (no curfews)
- F. Other

41. Which of the following best aligns with your choice for moving to a university-owned hostel? Please select all that apply

- A. Affordable Pricing
- B. Proximity to town
- C. Better amenities (reliable internet, stable water supply & electricity among others)
- D. Other

42. Which of the following best aligns with your choice for remaining in a university-owned hostel? Please select all that apply

- A. Affordable Pricing
- B. Proximity to town
- C. Proximity to class
- D. Better amenities (reliable internet, stable water supply & electricity among others)
- E. Other

43. Which of the following best aligns with your choice for moving to a private-owned hostel?

Please select all that apply

A. Affordable Pricing

B. Proximity to town

C. Proximity to class

D. Better amenities (reliable internet, stable water supply & electricity among others)

E. Other

44. How often do you leave your hostel facility (university-owned, private-owned, or home) to the main campus?

A. Daily

B. Specific days of the week

C. Bi-weekly

D. Monthly

E. Other

45. Have you ever struggled to get accommodation?

A. Yes

B. No

46. Which of the following best resonates with your struggle for accommodation? Please select all that apply.

A. Poor amenities

B. Late admission

C. Exorbitant hostel rental prices

D.Lack of hostel options

E. Other

47. Which of the following reasons do you consider when choosing a hostel arrangement? Please choose your top three reasons only.

A. Affordable Pricing

B. Proximity to town

C. Proximity to campus

D. Hostel security

E. Ease of commuting

F. Hostel Amenities

G. Type of housing property

H. Other

48. Which of the following amenities would you prefer your ideal hostel arrangement to have? Please choose your top three amenities only.

A. Gymnasium

B. Transport/shuttle services

C. Swimming Pool

D. Good security

E. Quality internet connectivity

F. Stable & back-up power supply

G. Stable & constant water supply

H. Parking lot

I. Other

49. Which of the following additional features would you prefer your ideal room to have?

Please choose your top three features only.

A. Air-conditioner

B. Kitchen facility

C. Beautiful/colourful interior design & décor

D. Bathroom & toilet facility

E. Television set

F. Other

50. How many people would you like to share your ideal room with?

A. Zero

B. One

C. Two

D. Three

E. Four

F. Five & above

51. Based on key metrics like amenities available, additional features in a room, the number of preferred roommates amongst others, how much are you willing to pay for student hostel facility rental per year?

A. Below GHC 1000

B. GHC 2,000 - GHC 3,000

C.GHC 4,000 - GHC 5,000

D. GHC 6,000 - GHC 7,000

E. GHC 8,000 - GHC 9,000

F. Above GHC 9,000

52. If you are interested in the outcome of this survey and to stand a chance of winning a price for completing the survey, please enter your email address. Please enter response (unlike the other questions, this question is unrequired)

53. To stand a chance of winning a prize, please enter any or both of your parent or guardian's email address. (unlike the other questions, this question is unrequired)

54. Terms & Conditions

A. Winners will be randomly drawn out of all participants who complete the survey.

B. Winner must be enrolled in any of the selected seven tertiary institutions that this research focuses on.

C. A minimum of 100 people must complete the survey to activate the raffle draw.

D. The survey ought to be completed by March 11, 2021, at 11:59 pm.

E. To stand a chance of winning, please provide both your email and parent/guardian's address.

F. Winners will be contacted through the email address provided above.

Thank you so much for completing my survey! Keep your fingers crossed on the raffle

APPENDIX 4: Interview Guide**A. Interview Guide for Property Managers & Property Owners*****Property & Student Demographics***

- ❖ How long has this facility existed?
- ❖ Though I think housing is a very tedious and risky investment, your facility is very commendable, which group of people came by this idea?
- ❖ Which schools does this housing facility service?
- ❖ What is the religious diversity of residents?
- ❖ What is the ratio of boys to girls among the facility's residents?
- ❖ What is the ratio of graduates to undergraduates student residents of the housing facility?
- ❖ How do students often transport themselves to and from campus?
- ❖ What is the proximity between the housing facility and access to basic social amenities like food and groceries & access to lecture halls?

Student Housing Data

- ❖ How many applications does the housing facility get each year for both existing and new residents?
- ❖ What key factors influence housing intake per an academic calendar?
- ❖ How many units are in the housing facility?
 - ii. What kind of amenities does the housing facility have?
 - iii. What is the number of beds per room?

- ❖ What is the housing facility's level of occupancy within a normal school year and also with Covid-19?
 - ii. What influences trends in the rental and occupancy rates of the student housing facility?
- ❖ Looking at the changing demographic and psychographic needs of students, what are some key improvements or renovations to be made to the existing facility?
- ❖ Given the spontaneity of contemporary student lifestyles, how frequent does the facility undergo maintenance plans?
- ❖ How do you innovate to manage competition?
- ❖ What top three challenges does your facility face presently?
- ❖ Are there any curfews or special restrictions in the housing facility which residents are obliged to abide by?

Student Housing Pricing Data

- ❖ How does the housing facility come up with annual rates for student housing each academic year?
- ❖ Which kind of utilities payable are included in the annual rate? E.g., Electricity
- ❖ Does the housing facility prices vary with factors like facility amenities, newness of facility, type of unit?

What Next for the Housing Facility?

- ❖ Is the student housing facility a lucrative space?
 - ii. If yes, why; if no, why not?

- ❖ Based on factors like the size of the unmet student demand, growing student population (due to government policies like free SHS), are there any plans to provide additional student housing?

If there are ongoing projects, add these lines of questioning.

- ❖ How many units does the ongoing project provide and what kind of amenities does the facility have?
- ❖ What are the respective estimated year of completion?

Back to What Next for the Housing Facility?

- ❖ What are the potential challenges that hamper these plans? For example, land availability but no financing, availability of financing but no land?

B. Interview Guide for School Administration

Student Demographic Data

- ❖ What key factors influence the number of freshman intake per an academic calendar?
- ❖ What is the estimated population of the school and what is the average size of each year group?
- ❖ What is the religious diversity of the student population?
- ❖ What is the ratio of boys to girls among the student population?
- ❖ What is the estimated number of international students in the school and which country nationals are most wide-spread in the school?
- ❖ What is the estimated number of students on scholarships?

Student Housing Data

- ❖ On a scale of 1 – 5, how crucial is housing to the administration’s current and future plans?

Scale – 5 represents university administration finds student housing an integral part of university logistics and operations.

1 represents university administration finds student housing an integral part of university logistics and operations.

- ❖ How are housing allocations spread across the year groups?
- ❖ What is the ratio of students living on-campus to those living off-campus?
- ❖ What is the university’s available student housing capacity and what is the average size of the student housing unmet demand?
- ❖ How many student housing facilities are on campus? (both public and private)
 - ii. What is the average unit in each housing facility?
 - iii. What kind of amenities do these housing facilities have?
- ❖ Looking at the changing demographic and psychographic needs of students, what are some key improvements or renovations to be made to existing facilities
- ❖ Given the spontaneity of contemporary student lifestyles, how frequent does the university execute maintenance plans?

Student Housing Pricing Data

- ❖ How does the university come up with annual rates for student housing each academic year?

- ❖ Do university housing prices vary with factors like facility amenities, newness of facility, type of unit?
- ❖ Does the Ghanaian macroeconomic conditions affect the university's housing prices and to what extent?

Student Housing – What Next for the University?

- ❖ Based on the following parameters, are there any plans to provide additional student housing in the university? i. student population, ii. expected annual student population increase, iii. land availability, iv. estimated number of people on scholarship, v. religious and national diversity.

If there are ongoing projects, add these lines of questioning.

- ❖ How many units does the ongoing project provide and what kind of amenities does the facility have?
- ❖ What are the respective estimated year of completion?

Back to Student Housing – What Next for the University?

- ❖ What are the potential challenges that hamper these plans? For example, land availability but no financing?
- ❖ Is the school administration willing to partner with real estate developers to increase student housing facilities?