AN ASSESSMENT OF THE EFFECT OF THE LOCATION OF RETAIL FUEL STATIONS ON SALES PERFORMANCE : A CASE STUDY OF STATIONS ALONG JUBA ROAD LIRA CITY NORTHERN UGANDA

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A DISSERTATION SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A DEGREE OF BACHELOR OF OIL AND GAS MANAGEMENT OF UGANDA CHRISTIAN UNIVERSITY

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UGANDA CHRISTIAN UNIVERSITY

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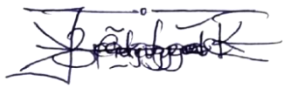
DECLARATION

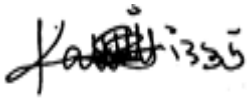
I **Adwek Timothy Ocepa**, hereby declare that this proposal is my work and it has not been submitted before to any other institution of higher learning for fulfillment of any academic award.

Signed  ……..

Date: 16th September, 2024

SUPERVISOR'S APPROVAL

This is to certify that this dissertation entitled **"An Assessment of the Effect of the Location of Retail Fuel Stations on Sales Performance: A Case Study of Stations along Juba Road, Lira City, Northern Uganda"** has been done under my supervision and it is now ready for submission.

Signature:  Date 17th SEPTEMBER 2024

Ms. Isabella Izimb Kasiko

DEDICATION

I sincerely dedicate this work to my beloved family; Rev. Otto David Ekwang and Rev. Dr. James Okalo Ekwang friends; Ohisa Innocent, Feta Benon Obaya, Agoth Peter and Nadunga Mercy Jemimah for their collective support and unconditional love throughout this journey of education. Special thanks goes to my dear parents, Eng. Andrew Ocepa and Mrs. Sarah Ocepa as they have worked very hard to care for me in terms of giving me tuition right from my early stage up to now and also grooming me into a responsible person I am today. I will always love and treasure you and may the Sovereign Lord shower you with divine blessings.

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I give special thanks to the Sovereign Lord for the strength, guidance and knowledge He granted me through this journey of education and in my life. I also send my great thanks to my supervisor, lecturers and the entire management of the Institute of Petroleum Studies-Kampala for the knowledge imparted in me during my period of study. My appreciation also goes to all my colleagues for the support given to me in terms of academics.

ABSTRACT

Background: This study examined the effect of retail fuel station location on sales performance along Juba Road, Lira City, using both quantitative and qualitative methods. The objectives were to assess the factors influencing sales performance, identify the factors affecting fuel station location, and determine the relationship between station location and sales performance in the area.

Methodology: A case study design and explanatory research approach were applied. Data were collected through structured questionnaires and in-depth interviews with 90 respondents, including station owners, managers, and sales staff. Descriptive statistics and chi-square tests were used to analyze the relationships between location factors and fuel sales performance.

Results: The findings revealed that proximity to major roads and high consumer traffic were significantly linked to improved sales performance (P-values = 0.0279 and 0.048, respectively). In contrast, land availability and competitor proximity were not significant factors. Additionally, customer service, fuel pricing, and convenience, were key drivers of fuel sales performance.

Conclusion: The study highlights the critical role of strategic location, effective customer service, and competitive pricing in fuel station success. It recommends that operators prioritize high-traffic locations and enhance service quality to boost sales performance in Lira City.

Contents

CHAPTER ONE

INTRODUCTION

Introduction

There are many petrol stations fighting for the attention of customers in the fiercely competitive retail fuel sector. The placement of a fuel station is one important component that can have a big impact on its sales performance. A gas station's strategic location can influence sales income by attracting or repelling customers. The purpose of this study is to look into the connection between retail fuel stations' sales performance and location. A mixed-methods approach will be used for this study, integrating qualitative views from industry experts with quantitative data analysis. This study will help fuel station owners, operators, and investors make well-informed decisions about company strategy and site selection by analyzing the effect of location on sales performance.

Background to the Study

Uganda's oil and gas sector covers both upstream and downstream industries. The upstream industry deals with exploration, development and eventual production of petroleum while the downstream covers transportation of both crude and refined products, refining, storage, distribution and marketing of the refined products like fuel (petroleum, diesel, paraffin), gas grease, among others. The Petroleum (Exploration and Production) Act of 1985 and the Petroleum (Conduct of Exploration Operations) Regulations of 1993 regulate upstream activities. Downstream activities are governed by the Petroleum Act of 1964 and several Regulations made there under (Energypedia, 2015; UNOC, 2023).

According to UNOC(2023), it has been confirmed that Uganda has commercially exploitable quantities of oil and gas although not yet commercially operational. The ten deep wells recently drilled on the Turaco, Waraga, Mputa, Nzizi and Kingfisher prospects in the Albert Basin have confirmed the presence of a sustainable petroleum system in Uganda with no major risk associated with petroleum exploration in the Albertine Graben. Future plans shall therefore include promoting and licensing the acreage which is not yet fully licensed, together with fast-tracking the appraisal and development of the discoveries made so far, with a view of achieving early production of petroleum in the country and better establishing the country's resource potential. The government

is planning an early oil production scheme that will involve setting up a mini refinery to process crude oil to produce light fuel oil (diesel, kerosene) and heavy fuel oil. The refineries in Uganda will process 60,000 barrels of crude oil per day into refined products including liquefied petroleum gas, a clean source of energy. Plus, it will improve Uganda's balance of payments by reducing the import bill of petroleum products currently costing $2bn annually, on top of employment (UNOC, 2023; The National oil Content Regulation, 2016).All the proceeds are to be deposited in the Petroleum Fund and the funds will only be used to invest for future generations and support infrastructure development. In addition to the generation of electricity, the country's oil and gas resources, when processed, shall contribute to substitution of imported petroleum products (UNOC, 2023, MEMD, 2023).

According to MEMD, (2023) and Energypedia, 2015, Uganda currently imports all the petroleum product requirements (light and heavy fuel oil) from overseas since there is yet no local production. About 90% of Uganda's petroleum imports are routed through Kenya with only 10% coming through Tanzania. The costs of transportation of the products from the seaports (Mombasa and Dar es Salaam) are high. Because of this problem, Government is planning to extend the oil pipeline from Eldoret in Kenya to Kampala a distance of 340 km. The possibility of building a 10-12 inch diameter 1,450 km pipeline through Tanzania to Uganda is also being examined. The cost of importing petroleum products into the country is in excess of US$400 million per annum constituting over 15 percent of the country's import bill. The extent to which Uganda reduces being a net importer of petroleum products on account of domestic oil production and processing will largely determine the improvement in the balance of payments.

As of 2007, consumption of petroleum products (fuel) in Uganda stood at 800,000 m^3 per annum, growing at about 6% per annum since 1997. The petroleum import bill stands at US$ 250 million per year. This constitutes about 8% of total national imports and represents slightly above 20% of total export earnings (energypedia, 2015).Petroleum product (fuel) prices in Uganda were deregulated in 1994. From 1997 the sector was opened up for new marketing companies to join. Deregulation has stimulated investment in the industry. There are 40 licensed oil-marketing companies in Uganda of which 25 are in operation (energypedia, 2015). However, the country now has the Uganda National Oil Company (UNOC) which maintains fuel reserves at Jinja in Eastern Uganda for strategic purposes also offering temporary storage accommodation at its Jinja Storage

Tanks as an incentive to the newly licensed oil companies to encourage competition (UNOC, 2023). The liberalization of the oil industry caused drastic changes in the industry (Mwenda and M. Oloko, 2016). Owing to this exercise, there is free entry in the oil marketing industry. This has generated increasing competition among Oil Marketing Companies due to a general price war and increase of fuel stations in major towns in Uganda. The development in the industry is thrilling as it is anticipated to upsurge the economy so much –creating job opportunities for residence in areas and communities where these retail stations are located (UNOC, 2023).

Currently, sales volumes and performance in retail fuel stations has drastically reduced due to the deregulation of the petroleum downstream sector(Romanus Lucian Dimoso, 2024) In Uganda, Petroleum Price Regulation gave way to price deregulation in 1994 (energypedia, 2015) and this has caused a knock-down effect on several activities in the sector.

According to URA the fuel retail industry is one among the major parts of the Ugandan economy. Vivo Energy the marketer and distributer of shell fuels and lubricants, has been named Uganda's top tax contributor by URA (Vivo Energy, 2022). "Retail is the engine that powers our growth. At the end of 2022, our network comprised 2,589 service stations across the continent" Vivo Energy asserted. In spite of the relevance of the industry to Uganda's economy, research in this sector is very scanty. Most research works in Uganda in this area, are basically a description of the prospects, institutional frameworks and Biodiversity conservation of the sector (The main interest of this study therefore is to investigate and identify the key factors responsible for the fuel station sales volumes, and the location of retail fuel outlets.

Other studies in other countries around the world investigated the determinants of retail fuel station location but these were related to planning, environmental criteria and guidelines and not sales volumes(Boison et al., 2018) Other studies also considered factors that influence consumer decision on fuel station choice (Boison et al., 2018) None of the empirical studies so far considered the extent to which location influences sales volumes of retail fuel stations.

(J.T. Mentzer, T.P. Stank & T.L. Esper, 2008) in its study in Montreal, identified that non-location variables affect sales performance at fuel stations instead of geographical zones. An investigation of the South African Market by (H. Hotelling, 1929) identified that price does not affect sales performance as compared to location and station size. However, Ugandan fuel retail market is a

de-regulated sector where petroleum prices are not equal at all outlets. This paper thus seeks to identify factors that influence sales volumes and retail fuel stations location in two of the oil energy fuel stations in the sector.

Problem Statement

Extensive research on factors that influence fuel demand and location of fuel stations. Nonetheless, all these studies are not specific for Uganda and more especially the 2023 newly created cities of Uganda; are also linked to planning, biodiversity conservation and guidelines (Akinkugbe, 2013), (Matinise, 2013). Other studies also examined factors that influence consumer decision on fuel station choice (Kakunu, 2012), (Boison et al., 2018). From the reviews, none of the empirical studies focused on the extent to which location influences sales volume at retail fuel stations in Uganda, particularly in the Ugandan Cities.

(J.T. Mentzer, T.P. Stank & T.L. Esper, 2008) study in Montreal identified that non-location variables affect sales performance of fuel retail stations instead of geographical zones. Also (H. Hotelling, 1929) investigated the South African Market and observed that price does not affect sales performance as compared to location and station size. This study was conducted in a regulated setting –where petroleum prices are equal at all outlets.

Although this current research is similar to (Hotteling, 1929)study, a different scenario is created as the Ugandan fuel market is not regulated-so far as fuel retail prices are concerned (energypedia, 2015). In addition, both location and non-location variables on fuel retail sales volumes will be considered as opposed to scholarly work done by Mentzer, J. T. (2008). Furthermore, in the empirical studies, amenities at fuel retail stations were not included in the regression analysis which to a large extent can be a determinant of sales performance – considering the evolvement of the retail fuel industry. Therefore, the limited research that investigated exhaustively factors influencing retail fuel filling station location and sales performance in Uganda, has prompted this study to fill that gap.

Objectives of the Study

General Purpose of the Study

The purpose of the study is to assess the effect of the location of retail fuel stations on sales performance.

Specific Objectives of the Study

i. To assess factors that influence sales performance of fuel stations along Juba road, Lira City
ii. To examine the factors that influence location of fuel stations along Juba road, Lira City
iii. To assess the relationship between the location of fuel stations and sales performance along Juba road, Lira City

Study Questions

i. What are the factors that influence sales performance of fuel stations along Juba road in Lira City?
ii. What are the factors that influence the seating of the fuel stations along Juba Road, Lira City?
iii. What is the relationship between the location of fuel stations and sales performance along Juba road in Lira City?

Scope of the Study

Content Scope

The research will cover the operational fuel retail stations along Juba Road, Lira City, as a case study. It will cover the factors influencing location of fuel stations and sales performance along Juba road in Lira City.

Geographical Scope

The research will be carried out in Lira City, Lango Sub Region, and Northern Uganda. The City is bordered by Pader and Lira districts in the North, Otuke district to the Northeast, Alebtong district to the East, Dokolo district to the Southeast, Apac district to the Southwest, and Kole district to the West.

Time Scope

The study will take duration of four months. The duration will be enough for the completion of the study.

Significance of the Study

The study aims to assist prospective fuel retail entrepreneurs to will use the findings and recommendations as part of their feasibility study requirements to establish a new strategic fuel retail business that can be highly competitive in Lira city recourse Fuel retail stations will understand the different factors influencing their sales volumes and how it affect their businesses hence using the study recommendations as a guide to secure sustainable businesses with higher sales volumes.

The results of the study will help the government collect a steady and growing sales tax from fuel retail stations since the information will make it easier for new businesses to enter the market and create profitable, long-lasting stations.

The research will act as a resource to student researchers who will find the literatures, recommendations and findings of the study for use in their researches related to the current study.

Limitations of the Study

Time allocated for the research project may not be enough to complete the study

Financing the research project may be expensive as it involves a handful of costly activities to be undertaken for example crossroad movements to interview respondents during data collection, typesetting, printing, photocopying and binding the research booklets.

Relevant data may not be easily given by the respondents due to the suspicion that the information they are to give will be used to either tax them or used by the competitors to out compete them out of business.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter covers empirical research on the related theories, location and non-location factors influencing sales volume and location of fuel retail stations.

Theoretical Reviews

A good research should be grounded in theory (Brush, 1966) Retail Location theories are the basis of spatial demand, retail location investigation, retail competition and retail agglomeration economies (Acheampong & Ackah, 2015)

The most relevant theories related to this study are centered on the Theory of Spatial Location, the Central Place Theory since these theories were established with respect to location –which is essential to a retail firm's ability to make profit (Sanda Tah, 2020)

Hotelling introduced the Theory of Spatial Location in 1929 (R. Spee and W. Douw, 2004] –where each firm would locate on the extreme ends of a theoretical linear market. The theory indicates how two firms selling homogenous goods would alter their position to gain an advantage. The theory also gave roots to retail agglomeration and competition with respect to location (R. Vining, 1956).

W. Christaller founded the Central Place Theory in 1933 (V. Zeithaml, 1988). The theory proposes that, selecting the right location for a retail shop is the single most important factor in profitability of a consumer service (Siddique et al., 2016)According to (Saini, Y. K & Matinise, 2022), a central place is the point where the exchange of goods and services takes place among people in close proximity to one other. His theory implied that, the purchase of goods from retail centers are based

on several properties such as range and threshold. Range is the farthest distance that customers are willing to travel to make a purchase. The theory indicates that, consumers would be willing to travel far to purchase expensive items that are procured occasionally and are less likely to travel that distance to procure low cost items purchased frequently.

The profit maximization theory was published by (Salifu, 2019) The theory indicated that, the main objective of the entrepreneur is to maximize profit; discarding the least cost theory by Alfred Weber. The fundamental objective of this theory is to indicate the most profitable location for industrial establishment. The maximum profit location according to Losch is the place where total revenue exceeds total cost – concentrating on demand as the key determinant for locating a firm– neglecting special cost variations.

Review of Related Literature

Factors that influence Location of a Fuel Retail Station

The survival and profitability of a business is greatly related to the optimal selection of the business location (David King Boison, 2019). . Literature review; presents solutions for understanding the selection standard for retail business location(Tressin & Richter, 2014). The authors concluded that, the criteria for choosing a retail location are classified into seven; performance measures, demographic structure, economic factors, competition, saturation level and storage features.

Furthermore, location analysis for petrol fueling station based on stakeholders preference and seismic micro zonation was carried out by (Semih & Seyhan, 2011) The study identified water system security, proper land use and selection, vicinity protection, road guard and emergency response service as location determination criteria for the petroleum fuel station. The survey indicated that, land use, the minimum distance to river bodies and fire station location are the three most important criteria chosen by the stakeholders in determining the placement of fuel stations.

Besides, (In et al., 2024) focused on site suitability assessment of fuel stations in Nigeria. The study suggested that in assessing fuel station site suitability, the site should pass three assessments –suitability assessment, proximity assessment and special relationships assessment.

(Hunter, 1995) studied the importance of siting of fuel stations; analyzing its effect through theories like fuzzy logic model and similar procedures to determine the most efficient features of locating a gas station. The researcher suggested that factors like population, economic, geographic and government policies should be considered in choosing the optimum site for gas stations.

Likewise, (Semih & Seyhan, 2011) carried out a study on a multi-criteria factor evaluation model for gas station site selection. The survey proposed a comprehensive order of factors for picking out the best petrol station site. In the survey four primary factors were identified; nearby traffic location, environmental and legislative, socioeconomic factor and components based on the physical attributes of the country. A study on the potential sites for fuel stations based on traffic count in Malaysia was conducted by G. Turhan, M. Akalın, and C. Zehir, 2013). They found out that, traffic volume predictions and further analysis on the basis of individual site must always be made before final site assessment. Demographic and geographic factors such as population size, income level, downtown and highways should not be overlooked when deciding on fuel station location, (Baker, 1990) also noted that customers, transport, the neighborhood, finances and the long-term future should be part of the variables that should not be ignored when considering the location of investments such as fuel stations.

The valuation of fuel stations is mostly based on profits thus in location them, local authority proposals should be considered. Investors must find out if the planned area would increase commercial, industrial or residential developments or if there would be road realignment in the near future since these changes can make or disrupt a station.

The duty of selecting the best site for fuel stations depends on factors such as proximity to population centers, distance from neighboring stations, easy access to existing utility, and environmental pollution restrictions. However it is concluded that, in considering all the factors discussed above, accessibility is key in selecting the best site for fuel retail stations.

Location of fuel stations

One important element affecting sales performance has been found to be the location of retail fuel stations. Studies have regularly demonstrated that a fuel station's location can have a major impact

on its profitability and volume of sales (Harris & Shaw, 2003; Kumar & Mishra, 2011). Fuel stations near major roads and interchanges typically perform better than those placed in residential areas, according to a 1987 study by Ghosh and McLafferty. Fuel stations situated in high-traffic regions, including city centers and commercial districts, typically have larger sales volumes than those located in low-traffic areas, according to another study by Sharma and Sahu (2015). The study also discovered that a nearby competitor's fuel station can have a detrimental effect on sales results. According to studies, the following particular location-related variables are important predictors of sales performance:

closeness to important thoroughfares and motorways (Ghosh & McLafferty, 1987), The amount and density of traffic (Sharma & Sahu, 2015), rivalry with surrounding gas stations (Sharma & Sahu, 2015), The surrounding area's demographics, including its income distribution and population density (Harris & Shaw, 2003), The fuel station's visibility and accessibility (Kumar & Mishra, 2011)

Retail sales performance

Retail sales performance is a critical indicator of a business's success and sustainability (Kotler & Keller, 2016). Factors that influence retail sales performance include location, product offerings, pricing, marketing, and customer service (Harris & Shaw, 2003). A study by Ghosh and (McLafferty, 1987) found that location is a key determinant of retail sales performance, as it affects accessibility, visibility, and foot traffic.

Sales Performance of Petrol Stations: Petrol stations are a type of retail business that sells fuel, lubricants, and other related products. Their sales performance is influenced by location, fuel prices, fuel quality, convenience, and customer service (Sharma & Sahu, 2015). Research has shown that petrol stations located near major roads and highways tend to perform better than those in residential areas (Ghosh & McLafferty, 1987). A study by Kumar and Mishra (2011) found that petrol stations with competitive pricing, high-quality fuel, and convenient amenities tend to attract more customers and generate higher sales. Specific factors that impact petrol station sales performance include: Traffic volume and density (Sharma & Sahu, 2015), Competition from nearby stations (Kumar & Mishra, 2011), Accessibility and visibility (Ghosh & McLafferty, 1987),

Demographic characteristics of surrounding area (Harris & Shaw, 2003), Loyalty programs and promotions (Lacey, 2007)

In assessing the effect of location on sales performance, researchers can use metrics such as sales volume, revenue growth, market share, customer satisfaction ratings, and return on investment (ROI) (Kotler & Keller, 2016).

Factors that influence retail sales volume

A number of studies have looked into factors that influence consumer fuel demand (Ph.D et al., 2008), (Hotteling, 1929). The most common ones identified are Fuel Price, Brand, Service Quality, Additional Services, Service Capacity and Location.

(Boison et al., 2018) identified fuel price as one of the factors that influence sales volumes. The studies carried out in Lithuania showed that the most important factor consumers look at when choosing a fuel station appeared to be price followed by price-quality relation.

According to (Delsaut, 2014), pricing determinants of fuel stations can influence or ruin the outlet. Yet, in a regulated marketplace where there are no free entries and exit and prices are equal at every fuel outlet, the price does not influence sales volumes (Sartorius et al., 2007), (Legros & Newman, 2017), (Kakunu, 2012)

In a deregulated market, price is the major marketing strategy to drive sales volumes (Mwenda, 2016) and this was agreed by (Ph.D et al., 2008). In their study in Montreal, the authors were of the view that, price displaced on a signage is what motivates drivers to enter a fuel station to refuel their vehicles and clients, willing to drive additional kilometers for a cent decrease in price in Montreal.

Furthermore, (Gotlieb & Sarel, 1991)argues that, commercial drivers in developing countries consider pump price as the most important defining element to purchase fuel from fuel stations whiles non-commercial drivers consider convenience. In developed nations with improved road traffic, a rise in the pump price would result in a decrease in road traffic; causing fuel outlets

volumes to decrease (Wambugu, 2009). Their study indicated that, a rise in fuel price by 10% in France led to a decrease in road traffic by 1.4% and 2.8% in the short and long term respectively.

On the other hand (Arouri et al., 2012) contends that, monetary value might not be the sole factor, determining the purchase of fuel. For that reason, if a station can respond to customer demands and provide fast and convenient service, the consumers may opt for that place over competitors with less nimble services though their product pricing may be much better.

Service quality is another factor that influences fuel station volumes (Gagne, Nguimbus and Georges, 2004). It can be defined as the attributes of excellence that a provision or commodity has to touch for a predetermined threshold (Mbau, 1997). In Nairobi, (Arokiasamy, 2013) conducted a research, recommending that, service quality can be a key strategy for attracting consumers and retaining consumer loyalty in the petroleum retailing sector. (J. Netz and B. Taylor, 2002) in support the long-term, oil marketing companies with higher quality products and services will most definitely attract and retain clients. In a regulated setting, service quality is the major marketing strategy to increase sales at retail outlets. In a related study, where it was indicated that, service quality was the major reasons for the choice of fuel stations of respondents. Obviously, clients are willing to ante up for reliable services, and will most definitely, make an unequivocal comparison between the monetary value they pay on the petroleum products and the quality they receive (Chan et al., 2007)

With the evolution of fuel retail stations, we may begin to side that fuel is not the only product purchased when accessing an outlet. Retail fuel stations are currently making customer convenience the driving force in the sector thus, progressively providing additional services to their outlet. These additional facilities include marts, café shops and fast food joints, banking activities, car wash facilities among others, to increase patronage of fuel at the various stations (Boison et al., 2018) (Sartorius, Eitzen and Hart, 2007) asserted that, additional services and speed in delivering these services are factors that influence consumer choice in the decision of service stations. Accordingly (Boison et al., 2018) in their study concluded that, there is a direct relationship between additional facilities and gas volumes and further recommended appraisers to incorporate this relationship in fuel station appraisal.

(Mentzer, Stank & Esper, 2008) also argued that, additional services like longer operating hours in conjunction with security increase sales volumes at fuel stations in Montreal. Service capacity is the number of fuel pumps and pump attendants at a fuel station (Mentzer, Stank & Esper, 2008). The fuel pumps present, as well as the size of the fuel station are indications of the customers convenience in buying fuel at a particular station (Boison et al., 2018) Customers do not like to wait to refuel and tend to dodge conditions where backup traffic exist (Ibid).

Another important factor that influences sales volumes at a fuel station is customer convenience (Boison et al., 2018). Customer convenience is affected by several variables, however the most important is the number of hand pumps that can refuel awaiting vehicles without negatively affecting the traffic flow at the station or delaying the refueling period. (Hamid, Iman, Suriatini, and Martin, 2009) further reiterates that, the number of fuel pumps determines the number of sales that is done at that station. Brand strength results in added value and therefore increases competitive advantage for the retailer (Kivetz & Simonson, 2002). This was confirmed by (Turhan, Akalın, and Zehir, 2013) when their study identified that, BP fuel station located in Bahru municipality in Malaysia failed to attract customers because the brand was less popular as compared to Caltex brand. (Aulia, Utama, and Ariastita, 2016) in their research findings showed that when variables such as location and price are equal, consumers tend to fall on brand as the determining factor in fuel purchase. The study concluded that, purchasers get stirred up and thrilled by promotions, discounts and rewards, if the reward has a solid value to them. It was observed that to avail from rewards, customers sometimes increase the monetary cost of purchasing basic things.

According to (Njoku and Alagbe, 2015) these attitudes of customers help marketers to promote their brands and create a positive perception amongst its customers.

Relationship between fuel station location and sales performance

The location of a retail fuel station is a critical factor that influences its sales performance. Research has consistently shown that fuel stations located in high-traffic areas, such as major roads and highways, tend to perform better than those located in low-traffic areas (Ghosh & McLafferty, 1987; Sharma & Sahu, 2015).

Studies have identified several key location factors that impact sales performance, including: Proximity to major roads and highways (Ghosh & McLafferty, 1987), Traffic volume and density

(Sharma & Sahu, 2015), Accessibility and visibility (Kumar & Mishra, 2011), Competition from nearby fuel stations (Kumar & Mishra, 2011), Demographic characteristics of the surrounding area (Harris & Shaw, 2003). A study by (Sharma and Sahu, 2015) found a positive correlation between fuel station location and sales performance, with stations located near major roads and highways generating higher sales volumes. Similarly, (Kumar and Mishra, 2011) found that fuel stations with high accessibility and visibility tend to perform better than those with low accessibility and visibility. In addition, research has shown that the location of a fuel station can also impact customer behavior and loyalty. For example, a study by (Lacey, 2007) found that customers are more likely to visit fuel stations that are conveniently located and offer high-quality amenities.

Overall, the literature suggests that there is a significant relationship between fuel station location and sales performance, with location playing a critical role in determining a station's success.

CHAPTER THREE

METHODOLOGY

Introduction

This chapter covers the different methods the researcher will use to carry out the study. They include; research design, population, sample, sampling techniques, research instruments, Data Quality Control Measures, Validity, Reliability, data collection procedure, data analysis procedure.

Research Design

This study will adopt the experimental case study design and explanatory research design as it involves research techniques that described events, explain the effect of variables on sales volumes and identify relationships between the variables.

Empirical researchers like (Easterby-Smith et al., 2018) emphasize that the role of the mix method provides an important instrument in overcoming the limitation of both quantitative and qualitative approaches. As such, a combination of both qualitative and quantitative approaches will be more appropriate for the study.

Study Population

The target population for the study will be the 120 operational staff working in the 15 operational fuel retail stations along the Juba road, Lira City.

Sampling Techniques

Out of the 120 operational staff, 100 will be randomly selected from the strata (5% according to Research Advisors, sampling size table, 2006). Furthermore, 15 managers will be selected from the 15 operational fuel retail stations.

Sample Size

The study will involve 115 respondents. This sample size is assumed by the researcher to be representative enough of the entire population.

Data Source

Both primary and secondary data will be used. Two years secondary data from the fuel stations will be used for the regression analysis

Study Instruments

The study will use questionnaire and in-depth interview guide as tools to collect data from the respondents. The researcher will prepare structured and objective questions which will be administered to the respondents. The researcher will give time for respondents to analyze the questions and later on collect the questionnaires after being filled in by the respondents.

Data Collection Procedure

The researcher will collect introductory letter from the research coordinator of Institute of Petroleum Studies, Kampala after approval of the research instruments by the research supervisor. The researcher will then proceed to the fuel retail stations along Juba Road where the business of the respondents are located in Lira City and thus administer questionnaires to them as well as interviewing them.

Data Analysis

Data will be analyzed using both the inductive and the deductive analysis techniques. The deductive analysis technique will be used to analyze the quantitative data whereas the inductive technique and linear regression analysis will be using SPSS as a tool to run the regression model.

With the inductive analysis techniques, thematic analysis will be used to analyze the qualitative data gathered. This will be applied to understand other factors that influence fuel sales and also factors that influence location of the fuel retail stations.

Graphs and descriptive analysis will be employed to illustrate relationships between the independent variables and the dependent variable using SPSS.

Data Quality Control Measures

Ethical issues will be handled with high level of professionalism whereby informed consent will be sought from respondents and the purpose of the study explained to them with credibility.

Validity and Reliability of study Instruments

A pilot test of the interviews and research questionnaires will be conducted to understand the working environment and respondent's attitude towards work. This is largely to ensure that the interviews and questionnaires are administered at time intervals devoid of stress and other factors which could affect the findings.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

Introduction

This chapter presents and analyzes the data collected to address the study's objectives. The analysis focuses on understanding key factors affecting the sales performance and location of fuel stations along Juba Road, Lira City.

Study findings

Distribution of the Characteristics of respondents.

The study findings revealed that among the 90 respondents, the majority were female (57.8%), while 42.2% were male. Most respondents (38.9%) fell within the 25-34 age group, followed by 27.8% in the 15-24 age group, 13.3% in the 35-44 age range, 11.1% between 45-54 years, and 8.9% were aged above 55 years.

Additionally, 75.6% of the respondents were salespersons at their respective fuel stations, 20% held managerial positions, and only 4.4% were station owners. In terms of experience, the majority (46.7%) had been working at their stations for 1-3 years, followed by 26.7% who had been there for less than 1 year, 17.8% with 3-5 years of experience, and 8.9% with over 5 years of experience at their stations. Furthermore,

Table 4.1: Frequency distribution of respondents

Characteristics	**Freq**	**Percent**
Gender		
Female	52	57.8
Male	38	42.2
Total	**90**	**100.0**
Age		
15-24	25	27.8
25-34	35	38.9

35-44	12	13.3
45-54	10	11.1
55+	8	8.9
Total	**90**	**100.0**
Position at the fuel station		
Owner	4	4.4
manager	18	20.0
salesperson	68	75.6
Total	**90**	**100.0**
Duration of working at the fuel station		
1-3 years	42	46.7
3-5 years	16	17.8
Less than 1 year	24	26.7
More than 5 years	8	8.9
Total	**90**	**100.0**

Factors that influence sales performance of fuel stations along Juba road, Lira City

Sales performance

Results from the study in table 4.2 states that, out of 90 respondents interviewed at fuel stations along Juba Road in Lira City, 53.3% rated their station's sales performance as good, 20% rated it as excellent or fair, while only 6.7% considered it poor.

Table 4.2: Sales performance based on respondents' rating.

Sales Performance	Freq	Percent.
Excellent	18	20.0
Fair	18	20.0

Good	48	53.3
Poor	6	6.7
Total	90	100.0

According to the study results from the table 4.3, the majority of respondents (96.7%) indicated that the location of the station impacts fuel sales performance, while only 3.3% disagreed. Additionally, 70% of respondents said that fuel pricing influences sales performance, while the rest did not. Moreover, 63.3% agreed that customer service affects fuel sales, whereas 36.7% did not share this view. Lastly, 70% stated that fuel sales performance is not influenced by competitors or marketing and promotion, while 30% believed that competitors or marketing and promotion do affect sales performance.

Table 4.3 Factors that influence fuel sales performance of fuel stations along Juba road, Lira City

Factors that influence fuel sales performance	**Percentage (%)**		
	No	**Yes**	**Total**
Location of the station	3.3	96.7	100.0
Pricing of the fuel	30.0	70.0	100.0
customer services	36.7	63.3	100.0
competitors nearby	70.0	30.0	100.0
marketing and promotion	70.0	30.0	100.0

4.2.3 The factors that influence location of fuel stations along Juba road, Lira City.

The findings from Table 4.4 reveal that all respondents agreed that proximity to the road had a positive influence on the location of fuel stations along Juba Road. Additionally, 63% of the respondents indicated that high consumer traffic had a passive influence on the location of fuel

stations, while 37% disagreed with this view. Furthermore, 66.7% of the respondents stated that land availability did not influence the location of fuel stations, with only 33.3% acknowledging it as a positive factor. Lastly, 88.9% of the respondents disagreed that the location of competitors influenced the placement of fuel stations, while just 11.1% considered it a positive factor along Juba Road in Lira City.

Table 4.4: Factors that influence location of fuel stations along Juba road, Lira City.

Factors	**Percentage (%)**		
	No	yes	Total
Proximity to the road	0	100	100.0
High consumer traffic	37	63	100.0
Availability of land	66.7	33.3	100.0
Competitor's location	88.9	11.1	100.0

4.2.4 The relationship between the location of fuel stations factors and sales performance along Juba road in Lira City.

The results from Table 4.5 indicate that fuel sales performance was significantly associated with the proximity of fuel station locations to the road (P-value = 0.0279) at a 95% confidence interval. Additionally, high consumer traffic influencing the location of fuel stations was also significantly associated with fuel sales performance (P-value = 0.048) at the same confidence level. However, the availability of land for establishing fuel stations and the location of competitors were not significantly associated with fuel sales performance at a 95% confidence interval.

Table 4.5: Relationship between the location of fuel stations factors and sales performance along Juba road in Lira City at 95% confidence interval.

Factors that influence the Location of the fuel station	Fuel Sale performance				
	Excellent	Fair	Good	Poor	Total
Proximity to road					
No	1	3	2	0	6

Yes	17	15	46	6	84
Pearson chi2(3) = 3.8393			**Pr = 0.0279**		
Availability of land					
No	12	11	34	4	61
Yes	6	7	14	2	29
Pearson chi2(3) = 0.5851			Pr = 0.900		
High Consumer traffic					
No	7	8	19	3	37
Yes	11	10	29	3	53
Pearson chi2(3) = 0.3614 Pr = 0.048					
Competitor's location					
No	16	16	40	5	77
Yes	2	2	8	1	13
Pearson chi2(3) = 0.5395		Pr = 0.910			

Discussion of findings

In this study, the location of a retail fuel station emerged as a critical factor influencing its sales performance, consistent with findings from other studies such as Ghosh & McLafferty (1987) and Sharma & Sahu (2015). Key location factors identified in this study include proximity to major roads and highways, aligning with Ghosh & McLafferty (1987), as well as traffic volume and density, which was supported by Sharma & Sahu (2015). However, unlike findings by Kumar & Mishra (2011), this study revealed that competition from nearby fuel stations was not significantly associated with fuel sales performance. This difference could be due to market saturation, differences in consumer preferences, or local market conditions where brand loyalty and service quality might play a more significant role than competitor proximity.

The findings of this study also showed that customer service and fuel pricing significantly influence fuel sales performance, consistent with previous research by Mentzer, Stank, & Esper (2008) and Boison et al. (2018). Additionally, customer convenience was identified as another key factor impacting sales volumes at fuel stations, as supported by Boison et al. (2018). The study emphasized that customer convenience is influenced by various factors, with the most critical being the number of fuel pumps available to serve vehicles efficiently. A higher number of pumps allows for faster refueling without causing traffic congestion or delays, as noted by Hamid, Iman, Suriatini, & Martin (2009) and Kivetz & Simonson (2002). This was further confirmed by research from Turhan, Akalın, & Zehir (2013) and Aulia, Utama, & Ariastita (2016). These results may stem from the fact that fuel stations offering better service efficiency and competitive pricing are likely to attract more customers, as they meet both economic and convenience needs, which are key drivers of consumer behavior in competitive markets.

CHAPTER FIVE

CONCLUSIONS OR RECOMMENDATIONS

Introduction

This chapter presents the study's conclusions and provides recommendations based on key findings influencing fuel station sales performance.

Conclusion

This study has demonstrated that the location of a retail fuel station plays a significant role in influencing its sales performance, with key factors such as proximity to major roads and highways and high consumer traffic being strongly associated with better sales outcomes. However, factors like land availability and competitor proximity were not found to have a significant impact on fuel sales performance. Additionally, customer service and fuel pricing were shown to be critical influences on sales, while customer convenience, especially the availability of multiple hand pumps, also contributed to higher sales volumes. These findings align with previous research, confirming the importance of strategic location and service efficiency in fuel station success.

Recommendations:

Focus on Strategic Location: Fuel station operators should prioritize proximity to major roads and highways when selecting locations, as this significantly impacts sales performance. High consumer traffic areas should also be targeted to enhance visibility and access.

Enhance Customer Service: Since customer service was found to influence fuel sales, station owners and managers should invest in staff training to improve service quality. Providing a pleasant and efficient customer experience can lead to increased customer loyalty and higher sales.

Competitive Pricing Strategies: Fuel pricing plays a significant role in sales performance. Station operators should consider adopting competitive pricing strategies to attract price-sensitive customers without compromising profitability.

Monitor Competitor Activity: Even though competitor proximity was not found to significantly impact sales, station managers should still monitor competitor activities, especially in terms of pricing and promotions, to remain competitive in the market.

Regular Market Analysis: Conducting regular market and consumer preference analysis will help operators adapt to changing conditions and improve their overall sales strategy, ensuring continued growth in a competitive environment.

Reference

Acheampong, T., & Ackah, I. (2015). Petroleum Product Pricing, Deregulation and Subsidies in Ghana: Perspectives on Energy Security. *SSRN Electronic Journal*, 1–14. https://doi.org/10.2139/ssrn.2644561

Arouri, M. E. H., Ben Youssef, A., M'henni, H., & Rault, C. (2012). Energy consumption, economic growth and CO2 emissions in Middle East and North African countries. *Energy Policy*, *45*, 342–349. https://doi.org/https://doi.org/10.1016/j.enpol.2012.02.042

Boison, D. K., Asamoah, H. Y., Addison, L., & Esther, A. (2018). Assessing factors influencing sales performance and siting of a fuel station project: study of Spintex Road, Accra-Ghana. *International Journal of Social Science and Humanities Research*, *6*(4), 1268–1279. https://researchpublish.com/search%0Ahttps://www.researchgate.net/publication/334066860_ASSESSING_FACTORS_INFLUENCING_SALES_PERFORMANCE_AND_SITING_OF_A_FUEL_STATION_PROJECT_STUDY_OF_SPINTEX_ROAD_ACCRA-GHANA

Brush, J. E. (1966). Walter Christaller. Central Places in Southern Germany. Translated by Carlisle W. Baskin. Pp. 230. Englewood Cliffs, N.J.: Prentice-Hall, 1966. $9.95. *The ANNALS of the American Academy of Political and Social Science*, *368*(1), 187. https://doi.org/10.1177/000271626636800132

Chan, T. Y., Padmanabhan, V., & Seetharaman, P. B. (2007). An Econometric Model of Location and Pricing in the Gasoline Market. *Journal of Marketing Research*, *44*(4), 622–635. https://doi.org/10.1509/jmkr.44.4.622

Delsaut, M. (2014). The Effect of Fuel Price on Demands for Road and Rail Travel: An Application to the French Case. *Transportation Research Procedia*, *27*. https://doi.org/10.1016/j.trpro.2014.07.018

Easterby-Smith, M., Thorpe, R., Jackson, P. (Paul R. ., & Jaspersen, L. J. (2018). *Management & business research*.

Ghosh, A., & McLafferty, S. (1987). Location strategies for retail firms. Journal of Retailing, 63(2), 141-157.

Gotlieb, J. B., & Sarel, D. (1991). Effects of price advertisements on perceived quality and

purchase intentions. *Journal of Business Research*, *22*(3), 195–210. https://doi.org/https://doi.org/10.1016/0148-2963(91)90001-E

Harris, P., & Shaw, G. (2003). The impact of location on the performance of retail businesses. Journal of Business Research, 56(2), 157-165.

Hotteling. (1929). Actitud Liderazgo Optimista Interés Fortaleza Apasionado Ganas Conocimiento. *Source: The Economic Journal*, *39*(153), 41–57. http://www.math.toronto.edu/mccann/assignments/477/Hotelling29.pdf

In, M., North, U., & Gis, L. G. A. U. (2024). *SITE SUITABILITY ANALYSIS AND RISK ASSESSMENT OF PETROLEUM FILLING STATIONS IN UMUAHIA TECHNIQUE Site Suitability Analysis and Risk Assessment of Petroleum Filling Stations in Umuahia Metropolis in Umuahia North l . g . a Using Gis Technique . (12559) S. May*, 19–24.

Kakunu, J. M. (2012). *Factors influencing strategic management practices among commercial banks in Kenya*. https://api.semanticscholar.org/CorpusID:168602977

Kivetz, R., & Simonson, I. (2002). Earning the Right to Indulge: Effort as a Determinant of Customer Preferences toward Frequency Program Rewards. *Journal of Marketing Research*, *39*(2), 155–170. https://doi.org/10.1509/jmkr.39.2.155.19084

Kotler, P., & Keller, K. L. (2016). Marketing management. Pearson Education Limited.

Kumar, P., & Mishra, S. (2011). Location decisions for retail businesses: An empirical study. International Journal of Retail & Distribution Management, 39(2), 151-165.

Lacey, R. (2007). The impact of loyalty programs on customer retention. Journal of Consumer Marketing, 24(4), 238-245.

Legros, P., & Newman, A. F. (2017). Demand-driven integration and divorcement policy. *International Journal of Industrial Organization*, *53*, 306–325. https://doi.org/10.1016/j.ijindorg.2016.04.007

Mwenda, S. (2016). *Determinants of Motorists Choice of a Petrol Station in Kenya*. *II*(Ix).

Ph.D, J., Stank, T., & Esper, T. (2008). Supply Chain Management and its Relationship to

Logistics, Marketing, Production, and Operations Management. *Journal of Business Logistics*, *29*, 31–46. https://doi.org/10.1002/j.2158-1592.2008.tb00067.x

Romanus Lucian Dimoso. (2024). *A Comprehensive Analysis of Factors Influencing Drivers' Perceptions and Preferences for Petrol Filling Stations in Tanzania*. 307–323.

Saini, Y. K & Matinise, S. V. (2022). *An Assessment of the Factors Influencing Consumers' Choice of Petrol Filling Stations in Tanzania Innocent Anthony Urio 1 and John R. P. Mwakyusa 2*. 1–16.

Salifu, G. (2019). The Political Economy Dynamics of Rural Household Income Diversification: A Review of the International Literature. *Research in World Economy*, *10*, 273. https://doi.org/10.5430/rwe.v10n3p273

Sanda Tah, D. (2020). GIS-Based Locational Analysis of Petrol Filling Stations in Kaduna Metropolis. *Science World Journal*, *12*(2), 2017. www.scienceworldjournal.org

Sartorius, K., Eitzen, & Hart. (2007). An Examination of the Variables Influencing the Fuel Retail Industry. *Acta Commercii*, *7*, 218–235. https://doi.org/10.4102/ac.v7i1.33

Semih, T., & Seyhan, S. (2011). A multi criteria factor evaluation model for gas station site selection. *Journal of Global Management*, *2*, 12–21.

Sharma, A., & Sahu, S. (2015). Impact of location on sales performance of retail fuel stations. Journal of Business & Management, 20(1), 1-9.

Siddique, O., Qasim, A., & Jalil, H. (2016). *Exploring the structure and performance of petroleum retail outlets in Pakistan*. *1*.

Tressin, T., & Richter, N. (2014). Determinants of International Purchasing Success: An Analysis of the Status Quo of Research. *Management and Organizational Studies*, *1*. https://doi.org/10.5430/mos.v1n2p129

Wambugu, A. G. (2009). *The Influence of Service Quality on Customer Preference in Petroleum Retailing in Thika District*. *1*(2), 68.

APPENDICES

Appendix 1: Questionnaire

Factors Influencing Sales Performance of Fuel Stations Along Juba Road, Lira City.

My name is Adwek Timothy Ocepa, a student of Uganda Christian University pursuing a Bachelor's Degree in Oil and Gas Management. I am conducting a study as part of my research to assess the effect of the location of retail fuel stations on sales performance along Juba Road, Lira City.

The purpose of this questionnaire is to gather data on factors that influence the sales performance of fuel stations in this area. Your responses will greatly contribute to the success of this research. Please note that your participation is voluntary, and all information provided will be treated with utmost confidentiality and used solely for academic purposes.

SECTION A: BACKGROUND INFORMATION OF RESPONDENTS

Instructions: Please tick in the boxes provided and respond to the questions as frankly as possible.

1. Gender of the respondent Male ☐ Female ☐

2. Age of the respondent

15-24 yrs ☐ 25-34 yrs ☐ 35-44 yrs ☐ 45-54yrs ☐ 55+yrs ☐

3. Position at the fuel station

Owner ☐ Manager ☐ Salesperson ☐

4. Duration of working at the fuel station

1-3 years ☐ 3-5 years ☐ Less than 1 year ☐ More than 5 years ☐

SECTION B: FACTORS THAT INFLUENCE SALES PERFORMANCE OF FUEL STATIONS ALONG JUBA ROAD, LIRA CITY

5. Rate the fuel Sales performance at your station.

Fuel Sales Performance	
Excellent	
Fair	
Good	
Poor	
Total	

SECTION C: FACTORS THAT INFLUENCE FUEL SALES PERFORMANCE

6. Do think the following factors that influence fuel sales performance of your fuel station?

	No	**Yes**
Location of the station		
Pricing of the fuel		
customer services		
competitors nearby		
marketing and promotion		

SECTION D: FACTORS THAT INFLUENCED LOCATION OF THE FUEL STATION.

7. Do you think the following factors that influenced location of this fuel station at this place?

	No	yes
Proximity to the road		

High consumer traffic		
Availability of land		
Competitor's location		

Thank you for completing this questionnaire