Full Length Research Paper

Business development and sustainability of selected petrol stations in Anambra state of Nigeria

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The essence of most investments is quality return. Continuous quality returns are guaranteed by patronages enjoyed by the investment, this therefore sustains the business. Hardly has this been achieved by most petrol stations that litter the roads of Anambra state of Nigeria due to the location of such businesses. Pursuant to the aforementioned problem, the study seeks to ascertain the extent to which business development relates to sustainability of petrol stations in Anambra state of Nigeria. The paper is anchored on the ‘Central Place Theory’. The population of this study consists of the customers who patronize these petrol stations in Anambra state. The study specifically identified the extent of relationship that exists between location and service sustainability of selected petrol stations. The research question and hypothesis were formulated in line with the specific objective. Infinite population was used because customers that visit the petrol stations cannot be determined, and sample size was determined using Z score for infinite population. Pearson Product Moment Correlation was used to test the hypothesis. The study revealed that there is a significant positive relationship between location and service sustainability of these petrol stations. Based on the finding, the study recommended that relevant regulatory bodies should enforce the compliance of the rules and regulations of Department of Petroleum Resources on location of petrol stations in the state to ensure improvement in the sustainability of these petrol stations.

Key words: Business development, sustainability, central placed theory, Nigeria.

INTRODUCTION

The expectation of every business or investment among other things is for quality returns and sustainability. This

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can be achieved by strategic positioning and satisfying the customers need without neglecting other key parameters and its consequences.

To ensure regulation and sustenance, location of any kind of businesses and the service activities in the state are guided by rules, planning principles and standards, and in terms of location, structure or land use development plans. Though relevant authorities oversee, the implementation of these plans based on the advice of professionals like the urban planners, consultants on environmental protection and sustainability, there appears to be indiscriminate and unguided sporadic emergence of petrol/filling stations in obscure locations within and outside cities, highways and roads in Anambra state of Nigeria.

The significant roles petroleum products play in any economy are well known. Chinambu (2011) acknowledges that petroleum is a key driver of industrial activities. Besides industrial development, the transportation sector is presumed to be the major consumer of fuel to facilitate the movement of men, goods and services around the globe.

The increasing instability of consumer preferences and the growing intensity and sophistication of competition force firms to analyze further opportunities. Exploiting existing competencies as well as newer ones depict the possibilities for a firm to attain business sustainability. Today’s business environments are complex and increasingly characterized by intense competition. Sellers no longer dictate the pace. Customers’ expectations of products, goods and services quality have been on the increase as a result of ease of access to information due to availability of ever increasing modern technologies that facilitate rapid communication globally (Chinambu, 2011), and enable efficiency in production and service to a larger audience.

Organizations are obliged to contend with the rapidly changing environment and at the same time, ensure the satisfaction of their customers’ expectations. Organizations are forced to continuously update or revert to improving their business processes if they must cope with uncertainty associated with changes. Business development therefore, aims at changing or innovating the current portfolio in terms of content, technologies or models (Siemer, 1995; Koppers and Klumpp, 2000).

Business development, the authors posit, is not limited to expanding a firm’s portfolio, but can also be aimed toward reducing a portfolio. It entails efficiency in tasks and processes to develop and implement growth opportunities within and between organizations. Business development is the creation of long term value for an organization from customers, markets, and relationships.

Apart from being the 6th world oil producing nation with 2.7 million barrels of crude oil and 445000 barrels of refining capacity per day, Nigeria is also one of the biggest consumer of petroleum products in Africa with a consumption capacity of about 48 million liters daily (Oduntan, 2015). Almost every home in Anambra state of Nigeria has a power generator that works all day to provide electricity and just like millions of cars and trucks on the roads, these generators run on premium motor spirit (PMS/Fuel) or automotive gas oil (AGO/Deisel). Offices, factories, schools, hospitals and other businesses depend on private power generated by petroleum powered equipment also. Incidentally, all these oil products are dispensed almost 100% through petrol/filling Stations; it therefore became inevitable to patronize them.

The approval to construct and operate petrol products filling stations is usually obtained from the Department of Petroleum Resources (DPR) (Omeh, 2015). It is no longer news that many petrol stations boycott these bodies in establishing their businesses perhaps to avoid paying the required fees thus, operating in an unapproved and un conducive environment, that is most of the time detrimental to human and other economic activities (Omeh, 2015).

Many of the petrol service stations in Anambra State of Nigeria if not located outside the city, along the express ways in the middle of nowhere, close to residential buildings or public places, in an undulated site or sharp corners where buying decisions cannot be compelling, it is located in city centers where over congestion of traffic will hardly encourage patronage. Those located in the living neighborhood, may even be causing serious hazards to residents in the close proximity of the filling stations but they still enjoy their patronage (Ehikwe and Ngwoke, 2013).

Many of these petrol stations, in addition to insensitivity to customer’s basic psychological need, do not care about some important selling points like courtesies, dispensing pump accuracy, quality of product, good attention, orderliness of the station, neatness of the station and its staff, and timely dispatch of customers. Other probable problems include lack of good convenience and functional car service centers with modern equipment. Most petrol stations have closed shops due to wrong location and low patronage. This was supported by John (2015) who maintained that location affects many aspects of business operations. In view of the aforementioned issues, the study seeks to identify the extent to which location relates to sustainability of petrol stations in Anambra State of Nigeria.

The broad objective of the study is to determine the extent to which business development relates to sustainability of petrol stations in Anambra State. The
research question is:

1. “To what extent does location relate to service sustainability of petrol stations in Anambra State of Nigeria?”

Research hypothesis

This hypothesis is formulated to guide the study:

$H_0$: There is significant positive relationship between location and service sustainability of petrol stations in Anambra State of Nigeria.

LITERATURE REVIEW

Conceptual review

The relevant and basic concepts were reviewed and various authors’ views highlighted in an attempt to give meaning to the study. The review is done under the following subheadings.

Business development

Business Development (BD) has been explained in many different forms in literature. From a managerial and competitive perspective, Davis and Sun (2006) point to Business Development as a corporate entrepreneurial capability. Kind and Knyphausen-Aufseß (2007) clarify the role of BD into three levels which are: implicit, established and institutionalized.

In particular, BD is said to be implicit when it lacks any task description or planned effort, established when its relevance and mission are officially recognized within the company and institutionalized. Business development implies the establishment of an ad hoc organizational unit managed by one or more BD specialists. In more established firms, Business Development function is typically organized as a staff function that refers to senior management (Davis and Sun, 2006) who also work closely with the line functions, such as Research and Development (R&D), production and marketing/sales (Sørensen, 2012). In the view of Kind and Knyphausen-Aufseß (2007) through BD, the following three business activities are usually carried out:

1. The identification of new business opportunities, through a screening of market information and networking activity.
2. Evaluation of the most profitable opportunities, by analyzing potential partner profiles, market and financial evaluation and strategic fit with the company.
3. Negotiation of terms and conditions and adaptability of internal resources to enable implementation.

Adding to the aforementioned, Sørensen (2012) maintains that in sufficiently large and specialized organizations, the opportunity identification phase may be carried out by people outside the business development function, such as specialists from research, product development or marketing.

Business development manager’s task usually varies based on different phases of the business process. Prior to the decision to pursue a particular growth opportunity, the business developer prepares a business plan based on a sound business model for senior management. Through a synergic business planning activity, BD managers compile, synthesize necessary data, and carry out due diligence as input for the decision-makers. This process usually involves close collaboration with the specialist business functions for the retrieval of intelligence that must be integrated for the business model and business plan (Lorenzi and Sørensen, 2014). They stressed that if the growth opportunity is considered worth pursuing, it is the business developer’s task to supervise the implementation of the initiative.

Mshella et al. (2015) posit that business development is the creation of long term value for an organization from customers, markets and relationships. It is all about figuring out how the interactions of business forces combine together to create opportunities for growth. Grand United Theory of Business (2015) defines business development as pursuing opportunities for long term growth from customers, markets, and relationships. Business development is focused on three activities:

1. Customers: Find new ones and extract value from current ones.
2. Markets: Figure out where new customers live and find a way to reach them.
3. Relationships: Build and leverage relationships founded on trust and integrity to facilitate opportunities.

Business development is necessary nowadays for businesses to achieve sustainable business growth (Beltz and Frank-Martin, 2009). It focuses on creating long-term value rather than quick cash solutions. To be a business developer, the manager must align the overall strategy with business development to explore synergies, embrace an innovative and iterative mindset and creatively think about everything about the business. Also monitoring and analyzing are key drivers of growth.
Sustainability

The concept of sustainability has received growing recognition, but it is a new idea for many business executives (Beltz and Frank-Martin, 2009). For most, the concept remains abstract and theoretical. Protecting an organization’s capital base is a well-accepted business principle. Yet, many have not considered the need for sustainability of their businesses. The International Institute for Sustainable Development in conjunction with Deloitte and Touche (2000) stated that if sustainability is to achieve its potential, it must be integrated into the planning and measurement systems of business enterprises. They stressed that sustainability means adopting business strategies and activities that meet the needs of the enterprise and its stakeholders. Sustainability.com in conjunction with Rochelle and Aiste (2016) believe that sustainability is simply the ability to sustain. They posit that it is about the future of any business from today’s commercial success. They insist that as simple as their disposition is, it captured the expectation and meaning of sustainability vividly and in a nutshell.

Petrol service station

The term ‘petrol service or fuel filling station’ is an expression commonly used in Nigeria and it is synonymously understood differently in different countries of the world. In an attempt to define it, Taylor et al. (2016) considered different expressions such as filling station, petrol station, gas station or petroleum outlet as any land, building or equipment used for the sale or dispensing of petrol or oil for motor vehicles or incidental thereto and includes the whole of the land, building or equipment. Similarly, Nieminen (2005) defines petrol station as “an area including fuel equipment and piping, storage tanks, forecourt and possible building premises for the sale of fuel (inflammable liquids) to customer’s vehicles”. Most filling stations sell petrol or diesel; some deal on specialty fuels such as liquefied petroleum as LPG, natural gas, hydrogen, biodiesel, kerosene or butane, while many add shops or eateries to their primary business. Taylor et al. (2016) noted that some of the factors considered when selecting location for this utility outlet are:

- Proximity to population centers
- Distance from neighboring petrol filling stations
- The easements of using existing utility
- The topography
- The traffic flow
- Competition
- Ease of accessibility and exit
- Future government plan
- The magnitudes of environmental pollution parameters.

Other factors to take into account when making a decision about the location of business include customers, transport, the neighborhood, finances, and other long factors (Ayodele, 2011).

Traffic count

Considering the aforementioned factors, it is important to ascertain the potentials of the location by conducting a simple analysis of that location. There are various methods to follow but the most commonly used by some major marketers like Total Nigeria PLC is traffic count (Afolabi et al., 2011). It involves hourly physical observation, counting and documentation of the number of vehicular movement transiting the side of the road of the proposed location for weeks or months, even seasons, recently it is important to recognize those that fetch in jerry-cans for generators at home or offices and kerosene and Liquid Purified Gas (LPG). During the exercise, vehicles are segmented in motorcycle, cars, lorries, then summarized according to product type consumption such as automotive gas oil (AGO), premium motor spirit (PMS), Biogas or LPG etc... Until recently, it may not make sense to include other users like PMS and AGO generator in the count. But today it will be out of place to ignore these voluminous consumers in their jerry-cans and drums. The outcome of the traffic count is further expressed as a percentage of the company’s market share. This gives a glimpse of the potential of the location and possible returns, which should be the motivation to approach the approving authorities, like the Department of Petroleum Resources, town planning authorities etc…

DPR guidelines for approval to construct and operate petroleum products filling station

The procedure and conditions for granting approval for the construction and operation of Petrol Station in compliance with Petroleum Act (Amendment decree no. 37 of 1977 safety rules and regulations) comprises of;

Suitability inspection

The intending marketer is expected to submit an
application to DPR for site suitability inspection. The
inspection shall among other issues report on the
following basic requirements (Department of Petroleum
Resource (DPR), 2007):

(1) Size of the proposed land site.
(2) The site must not lie within pipeline or Power Holding
Company of Nigeria (PHCN) high tension cable Right Of
Way (ROW).
(3) The distance from the edge of the road to the nearest
pump will not be less than 15 meters.
(4) Total number of petrol stations within 2km stretch of
the site on both sides of the road will not be more than
four including the one under consideration.
(5) The distance between an existing station and the
proposed one will not be less than four hundred (400)
meters.
(6) The drainage from the site should not go into a stream
or river.
(7) In some instances where site is along Federal
Highway, a letter of consent from the Federal Highway
Authority is required.
(8) A DPR guided/supervised EIA study of the site by
DPR accredited consultant is expected.

If suitability report on the aforementioned preliminary
issues is favorable, the following documents would be
required:

(1) Application letter addressed to the Operations
Controller of the DPR Zonal/Field office nearest to where
the location of the proposed station site.
(2) Two (2) photocopies of certificate of Incorporation.
(3) Two (2) photocopies of memorandum and article of
association.
(4) Two (2) photocopies of current tax clearance.
(5) Original and photocopy of police report.
(6) Original and photocopy of fire report and certificate.
(7) Two (2) original copies of approved building plan.
(8) Two (2) photocopies of letter from land and survey.
(9) Two (2) photocopies of deed of conveyance.
(10) Environmental impact assessment (EIA) report for
underground storage tank capacities greater than
270,000 liters (Department of Petroleum Resource
(DPR), 2014).

THEORETICAL FRAMEWORK

The study is anchored on the Central Place theory. This
is a geographical theory that seeks to explain the
number, size and location of human settlements in an
urban system. The theory was developed by a German
geographer, Walter Christaller in 1933. The theory posits
that settlements simply function as 'central places' in
providing services to surrounding areas (Procedure and
Conditions for Granting Approvals for the construction
and Operation of a Petrol Station, 2010).

Central place theory essentially concerns the provision
of convenient point of focus for easy consumer patronage
(Gbakeji, 2014). Centrality refers to a state of high
accessibility, the quality of being at the center of a
business system (Inyang and Ogbonna, 2001). Thus,
central place describes the relationship between a point
and other points in the surrounding region, and the
central place is that point which can be most ‘easily’
reached from other locations in the region.

In application to the study, it is expected of filling station
operators to locate their businesses at a central place
where they can attract motorists and enhance sustained
patronage. In other words, to be sited in places that
would minimize travel costs and inconveniences to the
consumers in gaining access to the services they require.
Centrality implies that consumers generally use service
centers that will enable them satisfy their wants with
minimum effort (Gbakeji, 2014).

Even though filling station operators often have location
preferences, it should be understood that, the location of
filling stations generally despite its importance to the
economy, is expected to be guided by a defined
standards (Mshelia et al., 2015). According to Bolen
(1988) every location on the earth has its analyzable
advantages and disadvantages and Mshelia et al. (2015)
assert that before the planning permission is granted to
construct a petrol filling station, it is a requirement to
conduct an Environmental Impact Assessment (EIA).
Therefore, only when this is done correctly and rules
applied will customers be disposed to compelling
patronage of filling stations for improved patronage
(Njoku and Alagbe, 2015).

Empirical review

Scholars have made useful effort in the study and
understanding of BD and sustainability. It could be said
that there appears to be paucity of empirical literature on
the area of petrol service stations. However, Lorenzi and
Sørensen (2014) carried out a study that explored the
organization of business development on the basis of
existing empirical literature and three case studies from
the biotechnology industry were used. The study adopted
the dynamic capabilities perspective to create a
theoretical framework for building business development
capability that served as a source of competitive
advantage. The in-depth case study methodology of
interviews and other secondary data were used. The
result showed that competitive advantage not only stems
from valuable, rare and difficult-to-imitate resources and capabilities, but from how they are configured and organized by managers. The findings also indicate a strong foundation for firms that are willing to set up business development units to pursue growth opportunities more systematically or for firms that may have rudimentary BD activities, but need to make changes because of poor performance.

Taylor et al. (2016) carried out a research that tried to identify location implications of filling stations in the city of Kitwe, Zambia. The research design was a case study which employed a descriptive cross sectional survey. The sampling frame consisted of all residents above the age of 18 years living within 100 meters from petrol filling stations within Kitwe. The sample size was 385. In view of the 28 filling stations in the city, a sample of 10 was used as reference points to identify the residents to represent the public's perception. The main finding was that filling stations location is influenced by choices made by service station entrepreneurs. It was also found that 77.38% of filling stations in the City of Kitwe were not located according to the established planning standards, guidelines and regulations.

Okeyo et al. (2014) examined the influence of business development services on entrepreneurial orientation and performance. The study analyzed a total of 97 small and medium enterprises in Kenya out of a sample of 150 organizations. Data was collected in Nairobi county through a combination of drop and pick methods. The collected data was analyzed using statistical package for social sciences (SPSS) program "Statistical Product and Service Solutions, an IBM product acquired by IBM in 2009 (Hejase and Hejase, 2013).

Descriptive, correlation and multiple linear regressions techniques were used. The results showed that there is a positive relationship between business development services and performance. They also demonstrated that business development services affect entrepreneurial orientation of the studied firms. However, the results indicate that entrepreneurial orientation does not mediate the relationship between business development services and performance.

Arokoyu et al. (2015) examined the proliferation of petrol filling stations in relation to the minimum environmental safety requirements by the Department of Petroleum Resources (DPR) in Obio-Akpor Local Government Area of Rivers State, Nigeria. The Global Positioning System (GPS) was used to acquire the coordinates of each filling station in the study area, and then imported to the Geographic Information System ArcGIS 9.3 software environment. Distances between filling stations from the road to each other were determined using the ArcGIS 9.3 measurement tool alongside buffering analysis in respect to their coordinates. Z ratio analytical technique was used to examine the conformity of petrol filling stations to the required distance of 400m and 15m from each other to the road respectively as stipulated by DPR amendment decree 37 of 1997. Findings from the z ratio analysis at 152 degree of freedom and 95% confidence level reveal that the petrol filling stations in the study area neither conform to the required distance of 400m nor to the required distance of 15 m from the road.

Literature has shown that scholarly efforts have been made towards giving meaning to business development and sustainability. Interestingly, Lorenzi and Sørensen (2014) and Okeyo et al. (2014) tried to explore the organization of business development outside the oil and gas industry, while Taylor et al. (2016) looked at the location implications of filling stations in Zambia. Again, Arokoyu et al. (2015) examined the proliferation of petrol filling stations, with no consideration on business development circuit, but focused on the minimum environmental safety requirements by the Department of Petroleum Resources (DPR). Not only that the studies were conducted outside Anambra State, but none was able to study the two key variables (business development and sustainability) in relation with petrol service stations. This presents a gap in knowledge as one cannot empirically lay claim on business development and sustainability in petrol service stations in Anambra State. Filling of this apparent gap in knowledge becomes the point of departure for this study.

METHODOLOGY

The study employed survey research design. This was adopted to ensure that the information collected is relevant and useful to conduct the study. The information was collected from the variables of the study to show the extent of relationship that exists between these variables.

Structured questionnaire was used for collection of relevant data for this study. The questionnaire consists of section A and B. Section A sought information on personal data of the respondents while section B consists of information relating to statement of the problem, objective of the study and research questions. The questionnaire is structured on a five-point Likert scales ranging from strongly agree to undecided to strongly disagree. The questionnaire is attached in Appendix A. The population of this study was the customers who patronize these petrol stations in Anambra state. The population was infinite because the number of customers that visit the petrol stations cannot be determined. Simple random sampling was performed using a table of computer generated random numbers to select 500 (five hundred) petrol stations out of 963 (nine hundred and sixty three) petrol stations currently operating in Anambra state. This technique gave the petrol stations in the sample frame the equal opportunity of being selected. About 157 are abandoned for inability to breakeven.

The sample size was determined using $n= p (1-p) \left( \frac{Z}{e} \right)^2$
Table 1. Reliability test result.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>0.980</td>
</tr>
<tr>
<td>Part I</td>
<td>-</td>
</tr>
<tr>
<td>Number of items</td>
<td>5⁵ᵃ</td>
</tr>
<tr>
<td>Cronbach Alpha value</td>
<td>0.948</td>
</tr>
<tr>
<td>Part 2</td>
<td>-</td>
</tr>
<tr>
<td>No of Items</td>
<td>5⁶ᵇ</td>
</tr>
<tr>
<td>Total number of items</td>
<td>10</td>
</tr>
<tr>
<td>Correlation between forms</td>
<td>0.981</td>
</tr>
<tr>
<td>Spearman-brown equal length</td>
<td>-</td>
</tr>
<tr>
<td>Coefficient unequal; Length</td>
<td>0.981</td>
</tr>
<tr>
<td>Guttman split-half coefficient</td>
<td>0.979</td>
</tr>
</tbody>
</table>


Where \( n \) = Sample size
\( P = \) Population Parameter (0.5)
\( Z = \) Level of confidence (1.96) (corresponding to 95% confidence)
\( e = \) Researcher desired level of accuracy (5%)

Substituted;

\[
n = 0.5(1-0.5) \left[ \frac{1}{1+0.963} \right]^2
\]
\[
n = 384 (282)
\]

In measuring the underlying theoretical construct, content validity approach was adopted for this study. Applying this approach, a panel of unbiased experts was carefully selected in the field of statistics and managers of the selected petrol stations. Then, after critical evaluation of the instrument, the panel certified it fit to elicit the actual responses and measure what it is supposed to measure. To test reliability, Spearman-Brown Split Half reliability technique was used in this study, and it was run using Statistical Product and Service SPSS Version 20. 46 copies of questionnaire representing 12% of the sample were used in the reliability test. The result was 0.981, any reliability coefficient above 0.7 is regarded as reliable and therefore the instrument was confirmed reliable. Table 1 shows the result. Spearman Brown prophecy formula was used to determine the correlation between the two halves;

\[
r_{SB} = \frac{2r_{hh}}{1+r_{hh}}
\]
\[
r_{SB} = \frac{2 \times 0.963}{1+0.963}
\]
\[
r_{SB} = 0.9812
\]

Analysis of research questions

A total of 384 (Three hundred and eighty four) copies of the questionnaire were distributed to the respondents, and two hundred and thirty six copies were retuned (response rate 61.46%) (Table 2).

Hypothesis testing

There is a significant positive relationship between location and service sustainability of petrol stations in Anambra State (Table 3).

Interpretation

The correlation value of 0.929 is an indication of strong positive relationship between the variables which is also statistically significant with p-value of 0.000 (< standard error of 0.05).

DISCUSSION

Results showed that there is a significant positive relationship between location and service sustainability of petrol stations in Anambra State. The implication is that where petrol stations are located will determine the performance of the petrol stations. This is in line with the views of Chan et al. (2004), Martin (2009), Mohammed et al. (2014), Iman et al. (2009) and Okonkwo et al. (2014) that location of petrol stations has a significant positive relationship with performance of these petrol stations. Results from Table 3 also show that there is a statistically significant positive relationship between location of petrol stations and service sustainability Going by the decision-rule, the research hypothesis is accepted which states that there is a significant positive relationship between location and service sustainability of selected petrol stations in Anambra State.

Conclusion

Though relevant authorities oversee the implementation of location plans based on the advice of professionals. There appears to be indiscriminate and unguided sporadic emergence of petrol stations in obscure locations within and outside cities high ways and roads in Anambra State of Nigeria. The study concludes that if petrol stations in Anambra State adhere to the rules and regulations of the approving body regarding location or site of stations, their service delivery and sustainability will be enhanced.
Table 2. Respondents views on how location relates to petrol stations service sustainability.

<table>
<thead>
<tr>
<th>Questionnaires items</th>
<th>SA</th>
<th>A</th>
<th>SD</th>
<th>D</th>
<th>UN</th>
<th>X</th>
<th>µ</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent does location relates to service sustainability of petrol stations in Anambra State</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Business development (location)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The petrol stations I buy fuel from are located close to residential buildings</td>
<td>20</td>
<td>31</td>
<td>99</td>
<td>82</td>
<td>-</td>
<td>2.90</td>
<td>236</td>
</tr>
<tr>
<td>Many petrol stations are located close to the petrol station I normally buy my fuel and kerosene from</td>
<td>14</td>
<td>45</td>
<td>27</td>
<td>150</td>
<td>-</td>
<td>2.67</td>
<td>236</td>
</tr>
<tr>
<td>Petrol stations should be sited meters away from residential buildings</td>
<td>19</td>
<td>31</td>
<td>81</td>
<td>105</td>
<td>-</td>
<td>2.85</td>
<td>236</td>
</tr>
<tr>
<td>Land should be allocated specially for petrol stations</td>
<td>-</td>
<td>29</td>
<td>52</td>
<td>147</td>
<td>10</td>
<td>2.44</td>
<td>236</td>
</tr>
<tr>
<td>Petrol stations located close to residential area can be dangerous to the health of the residents</td>
<td>13</td>
<td>14</td>
<td>95</td>
<td>112</td>
<td>2</td>
<td>2.68</td>
<td>236</td>
</tr>
<tr>
<td><strong>Sustainability (service sustainability)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The services rendered by the petrol stations I buy fuel and kerosene make me to always patronize them</td>
<td>106</td>
<td>87</td>
<td>10</td>
<td>31</td>
<td>2</td>
<td>4.12</td>
<td>236</td>
</tr>
<tr>
<td>I am satisfied with the quality of products I buy from the petrol station</td>
<td>46</td>
<td>44</td>
<td>69</td>
<td>68</td>
<td>9</td>
<td>3.21</td>
<td>236</td>
</tr>
<tr>
<td>The petrol station I buy fuel and kerosene from always respond to complaints positively</td>
<td>51</td>
<td>61</td>
<td>47</td>
<td>75</td>
<td>2</td>
<td>3.36</td>
<td>236</td>
</tr>
<tr>
<td>The petrol stations I patronize do not manipulate its fuel pump</td>
<td>133</td>
<td>54</td>
<td>21</td>
<td>217</td>
<td>-</td>
<td>4.21</td>
<td>236</td>
</tr>
<tr>
<td>The petrol station I buy kerosene and fuel from sells its products at government approved prices</td>
<td>17</td>
<td>29</td>
<td>68</td>
<td>118</td>
<td>4</td>
<td>2.73</td>
<td>236</td>
</tr>
</tbody>
</table>


Table 3. Statistical analysis of the hypothesis.

<table>
<thead>
<tr>
<th>Correlation</th>
<th>SL</th>
<th>SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL Pearson correlation sig (2-tailed)</td>
<td>1</td>
<td>0.929**</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>236</td>
<td>236</td>
</tr>
<tr>
<td>SS N Pearson correlation Sig (2-tailed)</td>
<td>0.929**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>-</td>
</tr>
<tr>
<td><strong>N Correlation is significant at the 0.05 level (2-tailed)</strong></td>
<td>236</td>
<td>236</td>
</tr>
</tbody>
</table>

Source: Field survey (2017) software output.
Key: SL: Service location; SS: Service sustainability.

**RECOMMENDATIONS**

The petrol stations in Anambra State in addition to strict adherence to the rules of the approving authority in the location of their stations, developers must respect the location potential factors in locating a petrol service station. On the other hand, government should device strategies to enforce compliance of the rules and regulations of DPR on these petrol stations. Even the owners of these petrol stations should strengthen their union to help government in enforcing these rules and regulations. It will help to improve patronage and
performance, subsequently sustain the business.

CONFLICT OF INTERESTS
The authors have not declared any conflict of interests.

REFERENCES


Mohammed MU, Musa UJ, Jeb DN (2014). GIS-Based Analysis of the Location of Filling Station in Metropolitan Kano against the Physical Planning Standards. J. Engineering Res. 3(9):147-158.


### APPENDIX

**Appendix A**

**Questionnaire**

<table>
<thead>
<tr>
<th>Questionnaire items</th>
<th>SA</th>
<th>A</th>
<th>UN</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>The petrol station I buy fuel from is located close to residential building</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many petrol stations are located close to the petrol station I normally buy my fuel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and kerosene from</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petrol stations should be sited meters away from residential buildings</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Land should be allocated specially for petrol stations</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Petrol stations located close to residential area can be dangerous to the health</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>of the residents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The service rendered by the petrol stations I buy fuel and kerosene makes me</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>to always patronize them</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am satisfied with the quality of products I buy from the petrol station</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>The petrol station I buy fuel and kerosene from always respond to complaints</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>positively</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The petrol station I patronize does not manipulate its fuel pump</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>The petrol station I buy kerosene and fuel from sells its products at government</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>approved prices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>