

# Influence of Resource Utilization Dimensions on the Lecturers' Effectiveness in Universities Nigeria - A Partial Least Square Approach

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## Abstract

The purpose of this study was to investigate resource utilization as predictor of lecturers' effectiveness in universities in Kwara State, Nigeria. Four dimensions of resource utilization named health, internet, library, and classroom were hypothesized to have impact on the lecturers' effectiveness. The mythological design was based on the sequential mixed-methods. The population consists of 3,927 lecturers at universities in Kwara State, and the sample size of 351 were selected by using stratified random techniques. Research instrument was a well-structured questionnaire that adapted for this study with different five scales. Statistical Package for Social Sciences (SPSS) and PLS-SEM were employed for data analysis. Findings indicate a significant relationship between health, library, and classroom resources and lecturers' effectiveness. Based on the findings of the study, it was recommended that adequate resources must be provided for lecturers for them to be more efficient and effective in the area of teaching, research and community development.

*Keywords: Resource Utilization, Health, Internet, Library, Classroom, Lecturers' Effectiveness, Nigerian Universities*

## 1. Introduction

Universally, educational resources are regarded as essential ingredients that are needed to achieve the objectives of education. Educational resources which include classrooms, assembly halls, libraries, laboratories, workshop and instructional, and internet. Similarly, education resources include the building and other infrastructures. School resource embraces permanent and semi-permanent structures which includes items such as machines, laboratory equipment, the chalk board and office assistances tools such as brooms and cleaning materials (Kayode, 2012). According to Adam, Sara and Audu (2021), school resources mean all physical facilities and equipment within the school which are used by members of the school community. All the physical structures in the school fall within this category. Resources are plants (buildings) equipment, materials. Whereas, school buildings also include classroom, dormitories, libraries and laboratory buildings, staff rooms, lecturers' quarters, examination halls and administrative buildings; educational equipment include such items as machines, audio-visual materials, chalkboards, cleaners' tools and workshop equipment. An item becomes a resource with time and developing technology.

Onifade and Awogbami (2020) revealed that resources are the raw materials which are used to achieve an objectives or goals in an organization. They are resources that we can feel, move, smell, see, etc.; these are normal resources that are made by man and help us to do our daily activities much quicker and easier. They include things like desks, chairs, floors and rooms. According to Irfran (2014), resources are resources that are available to be business organization in the form of buildings and other machineries needed for the day to day running of the organization. Onifade and Awogbami (2020) opined that for the purpose of the variables under study, resource utilization is used in the context of education. Thus, resources are all the structures found in a school system apart from human beings. Resources are school facilities which include all instructional and non-instructional facilities. According to Encyclopedia of Education (2012), the school resources consist of not only the physical structure and the variety of buildings systems, such as mechanical, plumbing, electrical and power, telecommunications, security, and fire suppression systems.

Joshua and King (2020) viewed resources as didactic materials such as books, charts and computers which are supposed to make learning and teaching possible. Awolola (2020) referred to them as objects or devices such as learners' books, lecturers' guides and chart which help the lecturer to make a lesson much clearer to the learner. According to Asonaba and George (2018), resources include laboratories, libraries, classrooms and a host of other physical

infrastructure, while material resources include textbooks, charts and maps among others. Thus, resources include all instructional and non-instructional materials of a school needed for effective teaching and learning. From these definitions of the resources one can conclude that they determine success or failure in the teaching and learning process. To make the teaching and learning process interesting, the lecturer has to use teaching aids in a friendly environment.

Amaewhule and Oliver (2020) opined that resource utilization is the level of which resources are used in system based on physical resource in an attempt to accomplish a specified goals or objectives. Resource utilization refers to the percentage of time that a component is actually used as compared with the total time that the component is available for use. In spite of the role of university system, some researchers and authors (Ademola, Olufemi & Chukwuemeka, 2018) reported that resource utilization of university system has not been encouraging due to the fact that their outputs' lecturers' effectiveness is declining in spite of high amount of financial resource vested on education. It is expected the university system be efficient in a way that a given quantity of output is obtained with minimum input.

The extent to which an educational institution especially universities reach her objective could be related to the educational resources utilized. It is not how much resources are allocated, but also how well the available resources are effectively utilized to enhance the development of education. Education resources refer to all human, material, non-material audio-visual school environment and community materials available in an academic environment to facilitate university lecturers and simplify the teaching-learning process. Other essential materials used in university to make teaching very easy and learning more meaningful and comprehensible to the learners are school physical resources which includes libraries, internet, and health facilities (Alimi, Ehinola & Alabi, 2012). In Nigerian context, research shows that adequate resources utilization can help to ensure the smooth running of the university system. Thus, an effective university leadership should be robust to achieve goals of university education. (Awodij, & Ogbudinkpa, 2016).

## 2. Literature Review

### 2.1. Relationship between Resource and Lecturers' Effectiveness

Series of research works have been conducted on the major variables of the study. For instance, Abdulrahman (2018) examined the relationship between information and communication technology utilization, quality assurance and academic staff effectiveness of polytechnics in South-west Nigeria. The study was a descriptive survey of correlation type. The sample consisted of 320 respondents from 6577 out of the 6 polytechnics in Southwest Nigeria. The survey instruments used is tagged "Information and Communication Technology utilization Questionnaire" 50 (ICTUQ), "Quality Assurance Questionnaire" 50 (QAQ) and "Administrative Effectiveness. The outcome of the study revealed that there is relationship between library resource and academic staff effectiveness in Polytechnics South-west Nigeria. Sunday (2021) examined the relationship between selected salient lecturers' variables and students' academic performances in Nigeria universities. Three hundred and fifty- five (355) undergraduates selected from five universities in south-west Nigeria were involved in the study. Samples cut across all disciplines were drawn from 200 levels and 300 levels. This became imperative so that the researcher might have a broad view of the problem being investigated. While the universities involved in this study were selected using purposive sampling techniques, the samples were randomly drawn. A self-developed and validated questionnaire was used to collect relevant data. Results showed that all the lecturers' variables under investigation except lecturers' immediate provision of result feedback to students significantly influenced students' academic performance thereby promoting high academic excellence or otherwise in universities.

Kpolovie and Awusaku (2016) investigated the attitude of lecturers towards the adoption of Information and Communication Technology, abbreviated as ICT, in teaching and research in federal and state-owned universities in Nigeria. Four research questions and null hypotheses were respectively, answered and tested. A stratified sample of 400 lecturers (251 males and 149 females) was randomly drawn from one federal university and one state university. Data analysis was done with the use of independent samples t-test and One-way ANOVA for testing the hypotheses. Results revealed that gender and area of specialization have no significant difference in the attitude of lecturers towards ICT adoption in teaching and research. Kolawole and Ogbiye (2020) investigated resource utilization and internal efficiency of secondary schools in Ekiti State. The research design was descriptive of the survey type. The population of the study comprised all the public secondary schools in Ekiti State, Nigeria. The sample consisted of 320 respondents comprising 300 teachers and 20 principals selected using multistage sampling procedure. At the first stage, simple random sampling technique was used to select nine local government areas in Ekiti State. At the second stage, 20 secondary schools were chosen from the selected local government areas using proportional stratified random sampling technique. The third stage involved random selection of 15 teachers from each of the selected schools, and purposive random sampling was used to select the principals of the selected schools. A validated instrument titled 'Resource Utilization Questionnaire (RUQ) and an inventory were used for data collection. Data collected were analyzed using cohort analysis, simple percentage and frequency count. Pearson Product Moment Correlation statistic was used to test the hypothesis at 0.05 level of significant. The findings showed that the level of resource utilization was moderate, while the internal efficiency was high in secondary schools in Ekiti State. The study revealed that there was a significant relationship between physical resource utilization rate and internal efficiency of secondary schools in Ekiti State.

Bizimana (2014) examined the correlation between availability of teaching and learning resources and effective classroom management and content delivery in secondary schools in Huye District, Rwanda. A descriptive survey research design was used. Stratified sampling technique was applied to select a sample size of 619 respondents comprising 81 school administrators, 160 teachers and 378 students. A questionnaire was the main research instrument used to collect data. Data was analyzed using Pearson Product Moment Correlation Coefficient statistical technique. The major finding was that although the level of teaching and learning resources in the study locale was insufficient, hence compromising the effectiveness of classroom management and content delivery. There was a positive and significant correlation between most of the teaching and learning resources and level of classroom management and content delivery ( $r = .711$   $p < .001$ ) at  $\alpha = 0.5$  level of statistical significance. It was recommended that the Government of Rwanda through the Ministry of education and other key education stakeholders should increase allocation of critical teaching learning resources such as audio-visual resources, library facilities and computers in order to facilitate effective teaching and learning not only in the study locale of Huye District, but the entire country of Rwanda. Akomoye and Paulina (2018) examined the impact of educational facilities on students' academic performance in Abeokuta North Local Government Area of Ogun, Nigeria. To achieve the purpose, two null hypotheses were formulated to direct the study. Literature review was carried out accordingly. Ex-post facto research design was adopted for the study. A sample size of five hundred and fifty secondary schools' students were randomly selected, through the simple random sampling techniques. The questionnaire was the main instrument used for data collection. The reliability estimate of the instrument was established through the test-retest method. Independent t-test analysis was the statistical analysis adopted to test the hypotheses. Each hypothesis was tested at 0.5 level of significant. The result of the analysis revealed that good classroom buildings and the use of ICT significantly affect students differently in their academic performance. Based on the findings, it was recommended that adequate well structure classroom buildings and the use of ICT in teaching and learning process should be made available for all school. Also, learners should be encouraged to take active part in the learning process with computers.

Eliasu, Abdul-Rasak and Isaac (2016) investigated the state of academic facilities and its influence on teachers' job stress in Tamale polytechnic. The study adopted a case study approach because it probes a specific tertiary institution in Ghana. Results revealed a significant relationship of variable for status of school facilities and teacher academic stress sources. Results of hypothesis tested show that status of school facilities influence teacher job stress significantly. It was concluded that inadequate or complete lack of academic facilities for state of the time would not only impair academic productivity, but rather exert undue stress on teachers and available facilities and recommended that the development priorities of the institution should be staff –students oriented. David and Suraiya (2020) study investigated the issues obstructing the effectiveness of public universities in Nigeria. The conceptual framework was adapted from the European Foundation for Quality Management Excellence model (EFQM). This study adopted a generic qualitative design to collect data through semi-structured interviews from eight participants, including the deputy vice-chancellor, deans, and head of departments, and lecturers that were purposively selected. Data collected were analyzed using thematic analysis with Nvivo (version 10). The findings of the study revealed that leadership, academic and administrative issues, contextual issues and funding are the major factors affecting the effectiveness of public universities in Nigeria.

Felicia and Hezekiah (2017) investigated the relationship between effective University leadership and academic excellence in Southern Nigerian Universities. The population of the study was made up of all the Vice chancellors from the seventeen federal Universities in Southern Nigeria. A random sampling technique was used to select nine (09) Universities and their Vice chancellors representing 52% of the studied population. 135 academic staff were also randomly selected from the sampled Universities as respondents. Questionnaire was the main instrument used for data collection. Descriptive statistics was used to analyze the data collected for the study. The findings of the study revealed a positive and high relationship between facilities and students' academic performance (Ahmed & Almaamari, 2020; Al-Harethi & Al-Maamari, 2018; Aldoseri & Almaamari, 2020; Alsaad & Almaamari, 2020; Alkadash, 2020). Ng Chiaw (2018) investigated the impact resources on lecturers in one of the private tertiary institutions in Malaysia. Quantitative research method was used to collect the data from the tertiary students. Data collected from the different academic programmes were analyzed by using Pearson Correlation Analysis and Multiple Regression Analysis. Findings revealed a positive correlation between the two variables. Aderonke and Adesina (2018) examined university lecturers' readiness and motivation towards utilizing online technologies for instructional delivery in Kwara State, Nigeria. The study adopted a survey research design. A total of 254 lecturers from three universities within Kwara State, Nigeria represents the sample for the study. Four research questions were raised to guide the study. The results reveal that lecturers do access to online technologies; however, at a relatively low extent. There is no difference between male and female lecturers' readiness to use online technologies for instructional delivery. Based on the findings, it was concluded that university lecturers in Kwara State were relatively ready and highly motivated to utilize online technologies for instructional delivery. The implication of the study is that online technologies could be easily integrated into education with ease.

Felicia and Omotayo (2019) investigated availability and utilization of e-learning facilities for management and business courses in universities in Kwara state. Two research questions and two hypotheses guided the conduct of the study. Descriptive survey research design was adopted for the study. The population comprised of 282 lecturers of management and business courses in universities in Kwara state. Random and stratified sample techniques were used to select one hundred management and business lecturers in universities in Kwara State. A questionnaire with Cronbach Alpha reliability of 0.80 was used for the data collection. Descriptive of mean rating was used to answer the research

questions while the two hypotheses formulated were tested using One-way ANOVA at .05 level of significance. The findings indicated that e-learning facilities were moderately available (mean = 96.64) while utilization was found occasionally used (mean = 98.16) for teaching and learning activities of business and management courses in the selected universities in Kwara state. It was also revealed that there was no statistically significant difference within the group ( $F(2, 82, 84) = 1.57, .213 @ p > .05$ ). Based on the findings, it was recommended that there is need for universities authority to give more priority in the provision of e-learning facilities through industry-university collaboration for effective teaching and learning to take place.

## 2.2. Theory on Resource-Based Theory

This study is anchored on resource-based theory. The resource-based theory examines performance differences of organizations based on their facilities. The theory makes two main assumptions: (1) organizations within an industry may differ in their facilities, and (2) these resources may not be perfectly mobile across organizations, so organizational differences in resources can be very long lasting. The theory seeks to explain how organizations maintain unique and sustainable positions in competitive environments. It focuses on efficiency-based differences, instead of on other ways in which organizations could be different, such as market power, collusion, or strategic behaviors (Barney, Ketchen & Wright, 2021). The central idea in resource-based theory is that organizations compete against others based on their resources and capabilities. An organization's competitors can be identified by the similarity of their products, facilities, capabilities, and substitutes. The theory assumes that organizational decisions to select and accumulate facilities are economically rational and subject to limited information, biases and prejudices, and causal ambiguity. Causal ambiguity means that it is not known exactly how a facility leads to above-average performance for an organization. An organization's competitive position relative to other organizations is based on its collection of unique resources and relationships. An organization has a competitive advantage when it uses a profitable, value-creating strategy that is not being used by competing. If competing organizations are not able to learn about that strategy and copy it, then an organization has a sustainable competitive advantage. Organizational SCA derives from the resources and capabilities that an organization controls that are valuable, rare, inimitable, and non-substitutable. Facilities are valuable when they help an organization create or implement strategies that improve its efficiency and effectiveness (Schauerte, Feiereisen & Malter, 2021).

Resources are valuable when they help an organization create or implement strategies that improve its efficiency and effectiveness. Resources are rare when more organizations want the resource than are able to obtain it. Resources are inimitable and non-substitutable when they are immobile and expensive to imitate or replicate. An organization must have the ability to absorb and utilize its resources in order to obtain a sustainable competitive advantage (Sony & Aithal, 2020; Barney, 2021). A key assumption in resource-based theory is that it focuses on an enterprise level, or business level, of analysis (Barney, 2021). The theory focuses on the resources and capabilities controlled by an organization that underlie performance differences across organizations. Resource-based theory is different from other theories that focus on the dyad level (boss and supervisee), the group level, or the industry level. Also, resource-based theory is not a substitute for other industry-level analytic tools. The theory focuses on performance differences across firms. Performance differences are viewed as earnings differentials attributable to resources having different levels of efficiency (Sony & Aithal, 2020; Barney, 2021). Superior resources enable an organization to produce better products and satisfy customers more sufficiently than it would with inferior resources.

Organizational efficiency means that a firm has lower costs and can create greater value and net benefits compared to inefficient firms. Efficiency is measured in terms of net benefits, or the benefits to an organization that are left after the firm's costs are subtracted. Sustainable competitive advantages and disadvantages can occur immediately, such as through a purchase, or can develop over a period of time (Sony & Aithal, 2020). Resource-based theory did not initially focus on whether resources were static or changing. However, more recent research attention has focused on how resources change, adapt, and evolve over time. For example, research has examined how organizations integrate, build, and reconfigure their resources and capabilities in response to rapidly changing environments. Research has also examined how resources and capabilities can follow a dynamic life cycle in which they grow from birth to death (Chen, Zhang, Yu, Lin, Xu, & Hu, 2021). The utilization of educational resources is very important because of its roles in the achievement of educational objectives and goals. Based on review of past studies, it can be said that a number of studies have evaluated the perception of lecturers on the resources provided for them in terms of teaching and learning, whereas not much research has been done to link the resource utilization with lecturers' effectiveness.

## 3. Conceptual Framework

Based on the above discussions, the theory of resource-based view supports the assumption that the competitive advantage of organization can be conducted by the effective human resources, which need the suitable resources. In addition, the previous studies support these assumptions and based on the literature review, we can identify four

dimensions of resource utilization; as shown in Figure 1. Therefore, this particular study has four hypotheses, as the following:

- **H1:** There is no significant relationship between health resource utilization and lecturers' effectiveness in universities in Kwara State.
- **H2:** There is no significant relationship between internet resource utilization and lecturers' effectiveness in universities in Kwara State.
- **H3:** There is no significant relationship between library resource utilization and lecturers' effectiveness in universities in Kwara State.
- **H4:** There is no significant relationship between classroom resource utilization and lecturers' effectiveness in universities in Kwara State.

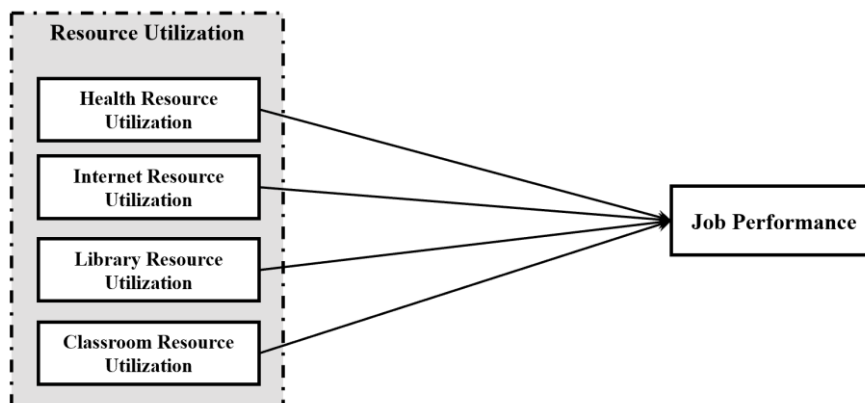


Fig.1. Conceptual framework of the study

## 4. Methodology

### 4.1. Population/Sampling Techniques

The research design adopted for the study was descriptive design of correlation type. The population for this study comprised 3,927 of all lecturers in universities in Kwara State, Nigeria based on the data collected from the registry units of the six universities (Al-Hikmah University, Crown-Hill University, Kwara State University, Landmark University, Summit University and University of Ilorin) on 16th July, 2020. While the population of the study based on qualitative research approach consists of all principal officers of six universities in Kwara State. Specifically, the principal officers are Vice-Chancellor, Deputy Vice-Chancellor, Registrar, Bursar and Librarian. The table below indicates the population of the study.

Table 1. Population of the Study on Quantitative (Survey)

S/N	Name of University	Number of Academic Staff	Type
1	Al-Hikmah University	142	Private
2	Crown-Hill University	68	Private
3	Kwara State University	684	State
4	Landmark University	176	Private
5	Summit University	74	Summit
6	University of Ilorin	2,783	Federal
	<b>Total</b>	<b>3,927</b>	

Source: Registry units of the selected universities

Based on the population of 3,927, sample size of 351 were determined with the use of Krejcie and Morgan's (1970) sample size table. Two sampling techniques was used to select the respondents for the study; they are stratified and proportionate techniques. First, stratified technique was used to group all the universities. Secondly, random sampling technique was used to select 351 respondents and out of 351 respondents it was only 346 respondents was able to retrieve.

### 4.2. Research Instrument

In this study, an instrument titled "Resource Utilization and Lecturers' Effectiveness Questionnaire" (RULEQ) was adapted from the studies of Abdulrahman (2018) and Oladimeji (2017). The instrument was divided into two sections "A" and "B". Section "A" deals with demographic characteristics of respondents, while Section "B" consists of items

relating to resource utilization and lecturers' effectiveness. According to Joy (2016), validity is the extent to which an instrument or test measures what it purposes to measure. In order to ensure the validity of the research instrument, draft copies of the instrument were given to the researcher's supervisor, lecturers in the Department of Educational Management and two other experts in Educational Measurement and Evaluation for their observations so as to ensure face, content and construct validity of the instrument. In order to ensure the reliability of the instrument, pilot study was conducted. Specifically, questionnaires were given to 50 lecturers in one tertiary institution that were excluded from the study. The data collected were analyzed, which yielded the following reliability index as displayed below:

**Table 2.** Results of the Pilot Study

S/N	Construct	Reliability Index
1	Health Resource Utilization	0.81
2	Internet Resource Utilization	0.85
3	Library Resource Utilization	0.91
4	Classroom Resource Utilization	0.82
5	Lecturers' Effectiveness	0.88

#### 4.3. Procedure for Data Collection

As part of data collection procedure, the researcher applied for authorization and permission for data collection from the officials of the universities prior to the time of data collection through submission of approval letter. The questionnaires were administered to the respondents by the researcher with the assistance of five trained research assistants. These research assistants were trained on how to distribute the questionnaires. Due to the sensitive nature of the study, we sought the permission of the respondents and assured them of confidentiality before administering the questionnaires. Furthermore, no respondent was compelled to give responses to the questionnaires; the distribution of questionnaires was determined by the willingness of the respondents.

#### 4.4. Method of Data Analysis

Data collected was subjected to screening so as so to ensure the accuracy of the data. Specifically, missing value and outlier screening was done with the use of Statistical Package for Social Science (SPSS). It was also used to analyze the data via the use of percentage which was used to describe the demographic characteristics of the respondents and perception on utilization of resources. Furthermore, sophisticated software called Partial Least Square (Structural Equation Modeling) was used to test all the hypotheses generated for the study.

### 5. Analysis

#### 5.1. Demographic Information

This section presents the results of data obtained from the respondents in percentages. Table 3 displayed below indicates the profile of the respondents based on the analysis of the data collected.

**Table 3.** Profile of the Respondents

Variable	Frequency	Percentage (%)
<b>Sex</b>		
Male	119	34.4
Female	227	65.6
<b>Marital Status</b>		
Single	145	41.9
Married	196	56.6
Divorced	5	1.4
<b>Ranks</b>		
Professor	17	4.9
Associate Prof/ Reader	48	13.9
Senior Lecturer	42	12.1
Lecturer I	69	19.9
Lecturer II	91	26.3
Assistant Lecturer	44	12.7
Graduate Assistant	35	10.1
<b>Highest Qualification</b>		
BSc	119	34.4

Variable	Frequency	Percentage (%)
MSc	122	35.3
PhD	105	30.3
<b>Length of Service</b>		
Less than 5 years	152	43.9
6-11 years	123	35.5
11 years and above	71	20.5
<b>Total</b>	<b>346</b>	<b>100</b>

Table above shows the profile of the respondents that participated in the study. The profile includes Sex (Male 119 (34.4%); and Female 227(65.6%), Marital Status (Single 145 (41.9%); Married 196 (56.6%); and Divorced 5(1.4%), Rank (Professor 17 (4.9%); Assistant Professor/ Reader 48 (13.9%); Senior Lecturer 42 (12.1%); Lecturer I 69 (19.9%); Lecturer II 91(26.3%); Assistant Lecturer 44(12.7%); Graduate Lecturer 35(10.1%), Highest Qualification (BSc 119 b(34.4%); MSc 112 (35.3%); and PhD 105 (30.3%), Length of Service (Less than 5 Years 152 (43.9%); 6-11 Years 123 (35.5%); 11years And Above 71 (20.5%).

## 5.2. Descriptive Analysis of Lecturers' Perception on Resource Utilization

Results in Table 4 are based on health resource utilization and reveal that 246 of the respondents strongly agreed with the statement that I do use clinic whenever am ill, 208 respondents also strongly agreed that the clinic is well-equipped with personnel for lecturers' usage. Likewise, 188 respondents strongly agreed that there is a sick bay in the university clinic for lecturers to use and 198 respondents strongly agreed that there is regular provision of drugs in the university clinic for lecturers' usage, 192 respondents strongly agreed that lecturers are allowed to use first aid box in the university clinic. Finally, 192 respondents strongly agreed that I and my family use university clinic always because it is cheaper and accessible.

**Table 4.** Lecturers' Perceived Utilization on Health Resource

S/N	Item	N	SD (%)	D (%)	A (%)	SA (%)	Remark
1	I do use clinic whenever am ill	346	3 (0.9)	6 (1.7)	91(26.3)	246(71.1)	Agreed
2	The clinic is well-equipped with personnel for lecturers' usage.	346	7(2.0)	3(0.9)	128(37.0)	208(60.1)	Agreed
3	There is a sick bay in the university clinic for lecturers to use.	346	4(1.2)	7(2.0)	147(42.5)	188(54.3)	Agreed
4	There is regular provision of drugs in the university clinic for lecturers' usage.	346	3(0.9)	9(2.6)	136(39.3)	198(57.2)	Agreed
5	Lecturers are allowed to use first aid box in the university clinic.	346	3(0.9)	9(2.6)	142(41.0)	192(55.5)	Agreed
6	I and my family use university clinic always because it is cheaper and accessible.	346	3(0.9)	11(3.2)	140(40.5)	192(55.5)	Agreed

Results in Table 5 are based on internet resource utilization and reveal that the respondents are satisfied with the internet resource which 223 of the respondents strongly agreed with the statement that there is adequate use of internet for lecturers in the university without any restriction, 192 respondents also agreed that lecturers in the university uses internet anywhere within the university for research and 166 respondents also strongly agreed that lecturers are allowed to use computers and printers available in the ICT for university development. Likewise, 174 respondents strongly agreed that lecturers have access to E-books and journals using the university internet. Finally, 174 respondents strongly agreed that ICT related tools and resources could be used by lecturers within the departments and faculties to store downloaded materials from internet.

**Table 5.** Lecturers' Perceived Utilization on Internet Resource

S/N	Item	N	SD (%)	D (%)	A (%)	SA (%)	Remark
1	There is adequate use of internet for lecturers in the university without any restriction.	346	4(1.2)	7(2.0)	112(264.5)	223(64.5)	Agreed
2	Lecturers in the university uses internet anywhere within the university for research.	346	1(0.3)	6(1.7)	147(42.5)	192(55.5)	Agreed
3	Lecturers are allowed to use computers and printers available in the ICT for university development	346	0(0.0)	13(3.8)	167(48.34)	166(48.0)	Agreed
4	Lecturers have access to E-books and journals using the university internet.	346	0(0.0)	13(3.8)	159(46.0)	174(50.3)	Agreed
5	ICT related tools and resources could be used by lecturers within the departments	346	0(0.0)	16(4.6)	156(45.1)	174(50.3)	Agreed

and faculties to store downloaded materials from internet.

Results in Table 6 are based on library resource utilization and show that 201 of the respondents strongly agreed with the statement that the lecturers are allowed to use functional library of the university, 207 respondents also strongly agreed that the university library is regularly supplied with current reading materials and journals lecturers' usage. Likewise, 180 respondents strongly agreed that E-book materials are adequately made available and utilizes by lecturers in the university library, 160 respondents agreed that books are released to staff on loan basis in adherence to the library procedure. Finally, 169 respondents strongly agreed that lecturers collect relevant information from the university library to lecture students.

**Table 6.** Lecturers' Perceived Utilization on Library Resource

S/N	Item	N	SD (%)	D (%)	A (%)	SA (%)	Remark
1	Lecturers are allowed to use functional library of the university.	346	1(0.3)	13(3.8)	131(37.9)	201(58.1)	Agreed
2	University library is regularly supplied with current reading materials and journals lecturers' usage.	346	2(0.6)	7(2.0)	130(37.6)	207(59.8)	Agreed
3	E-book materials are adequately made available and utilizes by lecturers in the university library.	346	1(0.3)	10(2.9)	155(44.8)	180(52.0)	Agreed
4	Books are released to staff on loan basis in adherence to the library procedure.	346	4(1.2)	8(2.3)	174(50.3)	160(46.2)	Agreed
5	Lecturers collect relevant information from the university library to lecture students.	346	5(1.4)	15(4.3)	157(45.4)	169(48.8)	Agreed

Finally, results in Table 7 are based on health resource utilization and indicate that 210 of the respondents strongly agreed with the statement that there is utilization of classroom in the universities for effective teaching and learning, 191 respondents also agreed that the classrooms are spacious and well ventilated. Likewise, 185 respondents strongly agreed that classroom resources are made available for teaching, 191 respondents agreed that classrooms have functioning resource and well utilized, 178 respondents strongly agree that lecturers' make use of the available resources provided (e.g., projector, chairs, table, etc.) and finally, 177 respondents agreed that there is appropriate light in the classrooms.

**Table 7.** Lecturers' Perceived Utilization Classroom Resource

S/N	Item	N	SD (%)	D (%)	A (%)	SA (%)	Remark
1	There is utilization of classroom in the university for effective learning.	346	1 (0.1)	124(35.8)	11(3.2)	210(60.7)	Agreed
2	Classrooms are spacious and well ventilated.	346	1(0.3)	5(1.4)	149(43.1)	191(55.2)	Agreed
3	Classroom resources are made utilized for teaching.	346	0(0.0)	4(1.2)	157(45.4)	185(53.5)	Agreed
4	Classrooms have functioning resource and well utilized.	346	1(0.3)	4(1.2)	150(43.4)	191(55.2)	Agreed
5	Lecturers' make use of the available resources provided (e.g., projector, chairs, table, etc)	346	2(0.6)	4(1.2)	162(46.8)	178(51.4)	Agreed
6	Appropriate light in the classrooms.	346	4(1.2)	5(1.4)	160(46.2)	177(51.2)	Agreed

**Note:** SD =Strongly Disagree; D=Disagree; A=Agree; SA= Strongly Agree

### 5.3. Descriptive Analysis of Lecturers' Perception on Effectiveness

As displayed in Table 8, lecturers' perceived level on quality of teaching showed that majority of the respondents demonstrated high level of perception on lecturers' effectiveness 69.9%, followed by 24.6% of the respondents that demonstrated average perception while 5.5% demonstrated low perception. Also, lecturers' perceived level on research output showed that majority of the respondents demonstrated high level of perception on lecturers' effectiveness 61.8%, followed by 27.7% of the respondents that demonstrated average perception while 10.4% demonstrated low perception. Lastly, lecturers' perceived level on community service revealed that majority of the respondents demonstrated high level of perception on lecturers' effectiveness of 64.2%, followed by 28.9% of the respondents that demonstrated average perception while 6.9% demonstrated low perception. The high level was determined by the number of strongly agreed, followed by medium, which is agreed as well as low perception, which includes disagreed and strongly disagreed in universities in Kwara State, Nigeria.



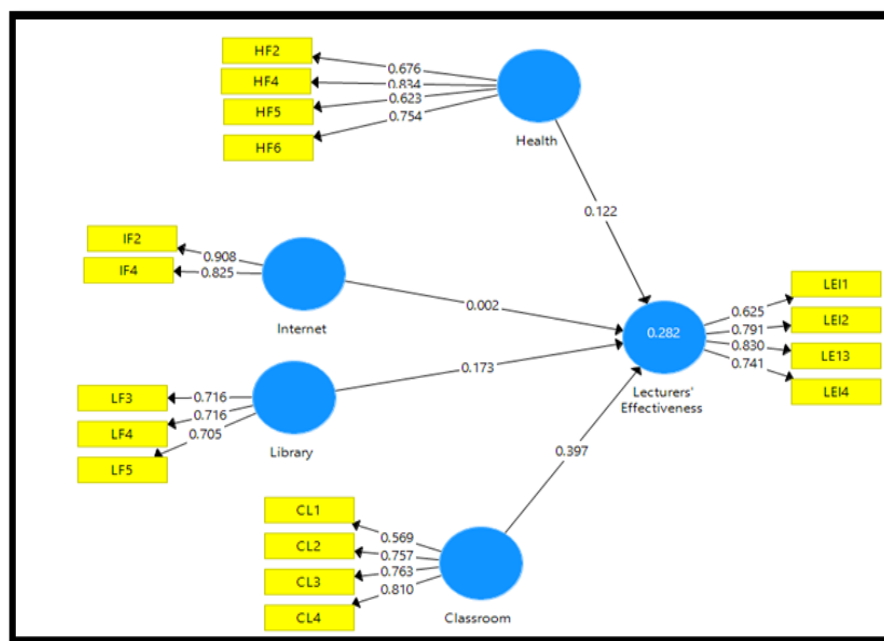
**Table 8.** Lecturers' Perceived Level on Effectiveness

S/N	Dimensions	Frequency	Percentage
<b>Quality of Teaching</b>			
1.	High	242	69.9%
2.	Average	85	24.6%
3.	Low	19	5.5%
	<b>Total</b>	<b>346</b>	<b>100.0</b>
<b>Research Output</b>			
		<b>Frequency</b>	<b>Percentage</b>
1.	High	214	61.8%
2.	Average	96	27.7%
3.	Low	36	10.4%
	<b>Total</b>	<b>346</b>	<b>100.0</b>
<b>Community Service</b>			
		<b>Frequency</b>	<b>Percentage</b>
1.	High	222	64.2%
2.	Average	100	28.9%
3.	Low	24	6.9%
	<b>Total</b>	<b>346</b>	<b>100.0</b>

**5.4. Measurement Model Assessment (Reliability and Validity)**

The PLS-SEM is a known statistical tool for path model estimation with reference to variables and their relationships. This section describes the two steps on how path models of the study conceptual framework were estimated using PLS-SEM (Hair, Ringle & Sarstedt, 2012). In analyzing path models, two procedures were followed, they are measurement model assessment, and structural model assessment.

Measurement model is described as the part of the model that assesses the link between the variables and their measures. In this study, individual item reliability, internal consistency, and discriminant validity formed the criteria for determining the measurement model of the study (Hair, Ringle & Sarstedt, 2012). The figure displayed below shows the output of the measurement model with the use of PLS-SEM software.



**Fig. 2.** Measurement Model of the Study

**Assessing the Individual Item and Consistency of the Model**

Following the suggestion of Henseler, Ringle and Sarstedt (2012) of 0.40 as minimum benchmark for determining adequate reliability of individual item in research, all items contained in the measurement model loaded more than .40,

which is the minimum benchmark. Specifically, the items in the model had loading between .569 and .908, indicating adequate loading of items. Furthermore, according to Malik, Mustapha, Sobri, Abd Razak, Zaidi, Shukri and Sham (2021), composite reliability is described as the most conventional way of determining the internal consistency reliability of adapted or adopted instrument in research. Therefore, in this study, composite reliability was adopted for two reasons. First, it is assumed that Cronbach's alpha underestimates the true reliability of the scale because it is well known when the correlation is lower. Second, unlike Cronbach's alpha, composite reliability measures the overall reliability of a collection of heterogeneous with related items (Ma & Qin, 2021). The table below indicates the composite reliability of the study model.

**Table 9.** Composite Reliability and AVE

	Composite Reliability	Average Variance Extracted (AVE)
Health Resource	0.815	0.527
Internet Resource	0.859	0.753
Library Resource	0.755	0.507
Classroom Resource	0.819	0.534
Lecturers' Effectiveness	0.836	0.563

### *Assessing the Convergent and Discriminant Validity of the Model*

According to Hair et al., (2012), convergent validity entails the sub-type of the construct validity of the model. It can also be described as the measure of a certain construct because it takes into consideration constructs that are meant to measure the same construct and signifies that they are truly connected. In consonance with Fornell and Larcker's (1981) process for determining the AVE of each model, it is presumed that the AVE (minimum of 0.5) estimates measure the exact variance that is captured by a particular construct based on measurement error. Thus, the AVE estimates of the current study as shown in Table 10 reveal adequate convergent validity of the study model. Specifically, the AVEs of Health Resource (HR), Internet Resource (IR), Classroom Resource (CR), Library Resource (LR) and Lecturers' Effectiveness (LE) loaded at 0.534, 0.527, 0.753, 0.563 and 0.507 respectively, showing that the variance in the indicators were clearly explained by common factors. In addition, Chin (2010) described discriminant validity as the two measures that are not supposed to related, are unrelated and that a value less than 0.75 indicates that discriminant validity likely exists between the two scales. In consonance with Chin's (2010) benchmark, the discriminant validity for the constructs of the current study (HR: 0.726; IR: 0.868; CR: 0.731; LR: 0.712; LE: 0.751) indicates a good discriminant validity (see Table 11). Furthermore, as explained earlier that discriminant validity indicates that a test of a concept is not extremely correlated with other tests that is designed to measure the theoretically different concepts. Tables below indicate the cross loadings of the current study constructs, signifying adequate discriminant validity.

**Table 10.** Discriminant Validity of the Study

	Classroom	Health	Internet	Lecturers' Effectiveness	Library
Classroom	<b>0.731</b>				
Health	0.162	<b>0.726</b>			
Internet	0.210	0.224	<b>0.868</b>		
Lecturers' Effectiveness	0.479	0.241	0.186	<b>0.751</b>	
Library	0.362	0.314	0.424	0.356	<b>0.712</b>

Note: All the items in bold color indicate adequate discriminant validity

**Table 11.** Cross Loadings

	Classroom	Health	Internet	Lecturers' Effectiveness	Library
CR1	<b>0.569</b>	0.136	0.176	0.233	0.278
CR2	<b>0.757</b>	0.165	0.209	0.340	0.291
CR3	<b>0.763</b>	0.068	0.166	0.377	0.271
CR4	<b>0.810</b>	0.122	0.093	0.419	0.242
HR2	0.058	<b>0.676</b>	0.232	0.074	0.174
HR4	0.102	<b>0.834</b>	0.128	0.229	0.194
HR5	0.124	<b>0.623</b>	0.151	0.174	0.213
HR6	0.170	<b>0.754</b>	0.204	0.155	0.336
IR2	0.199	0.198	<b>0.908</b>	0.182	0.359
IR4	0.162	0.192	<b>0.825</b>	0.135	0.386
LE13	0.330	0.168	0.092	<b>0.830</b>	0.230
LEI1	0.405	0.150	0.077	<b>0.625</b>	0.237
LEI2	0.407	0.218	0.190	<b>0.791</b>	0.311
LEI4	0.257	0.177	0.197	<b>0.741</b>	0.276
LR3	0.271	0.265	0.344	0.222	<b>0.716</b>
LR4	0.240	0.182	0.373	0.311	<b>0.716</b>
LR5	0.272	0.244	0.147	0.201	<b>0.705</b>

### 5.5. Structural Model Assessment of the Study

After booming assessment of the psychometric properties of the study measurement model, the psychometric properties of the structural model were equally assessed. This enabled to obtain the significance paths of the model based on the hypotheses. Before structural model assessment, adequate bootstrapping of the model was performed using 1000 values to estimate a sample of 346 cases with the use of PLS. The outcome of the bootstrapping is given in Figure 3 and Table 12 below:

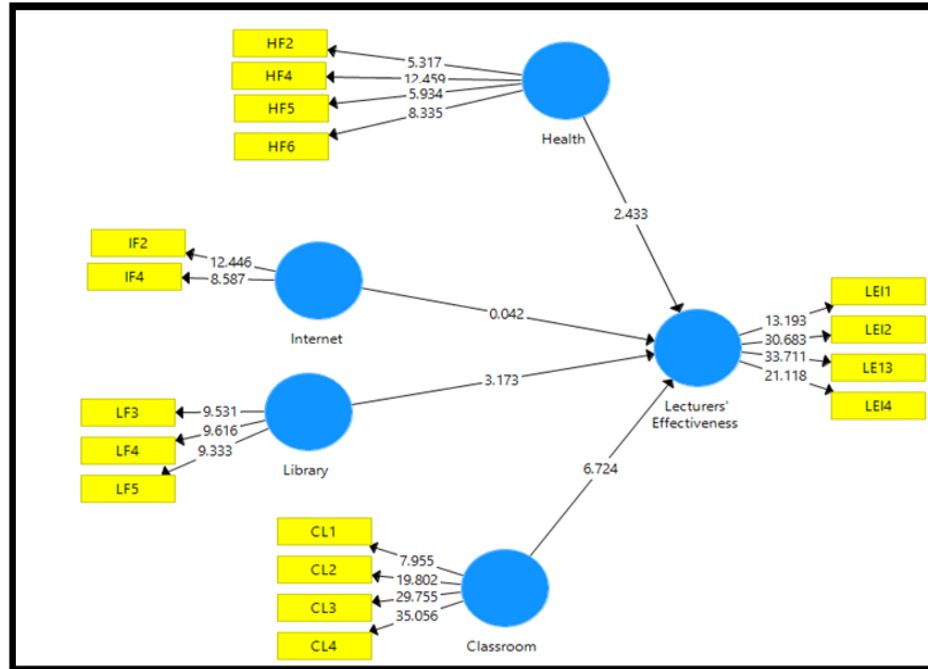


Fig. 3. Structural Model of the Study

Table 12. Hypotheses Testing

	Sample (M)	Mean	Standard Deviation (STDEV)	T ((O/STDEV))	Statistics	P Values	Decision
Ho <sub>1</sub> : HR -> LE	0.137		0.050	2.433		0.015	Rejected
Ho <sub>2</sub> : IR -> LE	0.004		0.048	0.042		0.966	Accepted
Ho <sub>3</sub> : LR-> LE	0.176		0.055	3.173		0.002	Rejected
Ho <sub>4</sub> : CR -> LE	0.395		0.059	6.724		0.000	Rejected

Note: HR=Health Resource. IR=Internet Resource; CR =Classroom Resource; LR=Library Resource; LE=Lecturers' Effectiveness.

The above table shows the level of significance of the hypotheses tested. The hypotheses were tested using PLS-SEM statistics tool based on the main hypothesis and operational hypotheses. The results revealed significant relationship between resource utilization indicators (health, library and classroom) and lecturers' effectiveness in universities in Kwara State, Nigeria.

## 6. Discussion

In line with the first research question of the study, it was established that the resource utilization as perceived by lecturers were properly structured and well organized in universities. Specifically, resources utilization in universities includes health, internet, library and classroom resource utilization. The finding is in sync with the work of Bizimana (2014) who found that adequate and proper resources are essential in the administration of a school. The prospect of education is in the educational resources, as a lot of resources in universities are on the increase, making teaching and learning in the four corners of a school environment less significant. Everyone and indeed every organization necessarily needs to be effective and efficient in the use of resources availability to the lecturers, as a real success in today's changed, rapidly changing and highly competitive world depends on such knowledge and skills. Lecturers' themselves are they

ready to be diligent enough to use the resources to better their own delivery of lectures and not by extension of upgrading themselves because there are many that will be distracted by many other things in pursuing other matters that bother on their personal life's which may not even be appreciated, and this may bring distractions for them in utilizing the resources available to better their knowledge transfer exercise. The current study finding is in line with the theory of resource based-theory which posits that performance differences of organizations based on their resources. The theory makes two main assumptions that organizations within an industry may differ in their resources, and these resources may not be perfectly mobile across organizations, so organizational differences in resources can be very long lasting. The study concluded that resource utilization creates room for lecturers' effectiveness in transferring their knowledge to students and thereby boosting their self-esteem. Resources are acquired in recognizing in an educational environment and inculcating innovative culture, which contribute to the development of the economy (Mcintyre, 2016).

In consonance with the second research question of this study, which examined the level of lecturers' effectiveness in universities in Kwara State, findings indicate that on quality of teaching 19 respondents (representing 5.5%) were not sensitive of lecturers' effectiveness, 85 respondents (representing 24.6%) were neutral, while 242 respondents (representing 69.9%) were sensitive of it. Also, lecturers' perceived level on research output showed that majority of the respondents demonstrated high level of perception on lecturers' effectiveness 61.8%, followed by 27.7% of the respondents that demonstrated average perception while 10.4% demonstrated low perception while, lecturers' perceived level on community service revealed that majority of the respondents demonstrated high level of perception on lecturers' effectiveness of 64.2%, followed by 28.9% of the respondents that demonstrated average perception while 6.9% demonstrated low perception. The current finding is synonymous with the study conducted by Yusuf (2020) who revealed that high efficiency and effectiveness of teachers in secondary schools. Resources utilization is the core that emphasizes the lecturer's interests and needs. In most universities in Kwara State, the resources that serve the academic staff are in bad shape, as many do not have adequate health, internet, library and classroom. There are inadequacies of physical structures as most academic staff lack office accommodation. He submitted that effectiveness is no doubt a function of appropriate availability and utilization of input resources. Thus, lecturers at universities are faced with the challenge of how to convince the various stakeholders of education of their capability in efficient utilization of the scarce resources availability in their universities. Abdullahi and Sirajo (2020) who found similar result on lecturers' perception on resource utilization. Specifically, the study established high level of lecturers' perception on resource utilization in universities in Nigeria. The current finding is also aligned with the study of Ibrahim, Titilayo, Suleiman and Ishola, (2020) who concluded that utilization of ICT facilities is a veritable tool for achieving effectiveness in higher institutions.

Thirdly, the first research hypothesis postulates that there was significant relationship between health resource and lecturers' effectiveness. The PLS path model results revealed a significant relationship between the two variables (HR>LE: mean: 0.137; standard deviation: 0.050; T statistics: 2.433; P-values: 0.015), which indicates a correlation between health and lecturers' effectiveness. In the same vein, the second research hypothesis of the study postulates that there was significant relationship between internet resource and lecturers' effectiveness. Unexpectedly, the PLS path model results revealed no significant relationship between the two variables (IR>LE: mean: 0.004; standard deviation: 0.048; T statistics: 0.042; P-values: 0.966). Also, the third research hypothesis of the study postulates that there was significant relationship between library resource and lecturers' effectiveness. The PLS path model results revealed a significant relationship between the two variables (LR>LE: mean: 0.176; standard deviation: 0.055; T statistics: 3.173; P-values: 0.002). Lastly, the fourth research hypothesis of the study postulates that there was significant relationship between classroom resource and lecturers' effectiveness. The PLS path model results indicate a significant relationship between the two variables (CR>LE: mean: 0.395; standard deviation: 0.059; T statistics: 6.724; P-values: 0.000), indicating a significant nexus between classroom and lecturers' effectiveness. Evidence from interview conducted established a link between classroom resource and lecturers' effectiveness as perceived by the participants that participated in the study. The current findings are in tandem with the study of Adedamola, Olufemi, Chukwuemeka and Mayowa (2017) who found that recognized positive association between the resource and effectiveness in the school system. The current findings are in line with resource-based theory. The central idea in resource-based theory is that organizations compete against others based on their resources and capabilities (Awolola, 2020; Buba & Hamman, 2020). An organization's competitors can be identified by the relationship of their products, resources, capabilities, and substitutes. The theory assumes that organizational decisions to select and accumulate resources are economically rational and subject to limited information, biases and prejudices, and causal ambiguity. Causal ambiguity means that it is not known exactly how a resource leads to above-average performance for an organization (Adeleke, Solanke & Oguntayo, 2019).

## 7. Conclusion and Recommendations

Based on the findings of the study, answers were provided to the research questions formulated for the study. Particularly, resources such as health, internet, library and classroom were provided for the development of lecturers' effectiveness in the universities in Kwara State. Thus, it can be concluded that resource utilization is certainly necessary

for the progression of universities system. If provided, it has the trend to achieve the goals and objectives of school. In view of the foregoing, following recommendations were made:

1. Management of universities should ensure that universities resources are in good conditions to serve the purpose by which they are made available and also to ensure that lecturers should be trained and/or retrained on the use of universities resources in order to ensure their adequacy in using them, particularly those sophisticated ones; because we cannot talk about lecturers' utilization of these resources when they are not conversant with them in universities in Kwara State. Nigeria.
2. Universities should support in ensuring adequate provision of educational resources through utilization of internally generated fund for lecturers so as to facilitate the use availability of educational resources and lecturers should have access to educational resources whenever the need arises, their job effectiveness would be greatly improved in universities in Kwara State. Nigeria.
3. The management should create enabling environment where the lecturers can have access to resources for self-development and for the training of the students. There should be adequate awareness creation through seminars, workshops, conferences, memo, and bulletin on academic staff to acquire resource and adopt utilization of educational system in the teaching and learning processes in order to ensure quality teaching and lecturers perceived on educational resources in universities, Kwara State. Nigeria.
4. The management of the universities should as matter of urgency pay more attention to other quality teaching-learning processes. Even though, the universities are facing quite some challenges ranging from inadequate funding to lack of external support. There should constant maintenance and well equipped with enough resources and construction of new ones. While the development and utilization of resources continues to grow to include more effectiveness on lecturers for teaching and learning. The ongoing development cycle of resources utilization in universities, as with all other learning environments, needs to include an evaluation process to determine and maintain the effectiveness of the system. Teachers should make good effort in incorporating the available school facilities in their pedagogical practices to develop them and thereby promoting the academic growth of learners.

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