The Social Sciences 12 (4): 600-608, 2017
ISSN: 1818-5800

A Review of Physical and Non-Physical Facilities Performance on Student Satisfaction in Northern Nigerian Universities

Isa Abdullahi, Wan Zahari Wan Yusoff and Emmanuel Gwamna
Department of Real Estate, Faculty of Technology Management and Business,
University Tun Hussein Onn Malaysia, 86400 Parit Raja, Batu Pahat, Johor, Malaysia

Abstract: Facilities have the important role to ensure the quality of teaching and learning with respect to achieving quality of education. The purpose of this study is to discuss the conceptual model on measuring the physical and non-physical facilities performance of Northern Nigerian Universities and how the performance affect student's satisfaction with the facilities. Nigerian universities are in crises and characterized by decline in quality of teaching and learning due to poor facilities which led to unsatisfied performance of staff and students. Archival research was done where previous related research studies were reviewed. The data was obtained from journal articles, conference proceedings and books. The research is expected to be beneficial o students and staff in improving the learning facilities across Nigerian universities. The model is based on the interaction of physical University facilities and the non-physical element's performance based on the student's experiences that determine their overall satisfaction with the University facilities.

Key words: Physical facilities, non-physical facilities, performance, student's satisfaction, unsatisfied performance

INTRODUCTION

Education is the most effective means of bringing about total change that will ensure accelerated economic growth and national development in any given country (Odediran *et al*., 2015). Higher education is a diverse sector, often with specialist on educational development of every nation (HEFCE, 2005). Therefore, the objectives of higher institutions are to provide in-depth knowledge, seek academic development, educate students and coordinate national development demands (Johnes and Taylor, 1990). Every tertiary institution is built to serve tertiary education to students based on the various programmes offered and therefore, the design and facilities provided in the higher institutions must suit the objectives of the education programmes (Khalil *et al*., 2012).

Educational institutions assessment of the facility performance has become a matter of particular interest to government around the globe, seeking to increase effectiveness of educational provision and maximize value for facilities. Hence educational facilities are connected with student's performance either directly or indirectly (Vidalakis *et al*., 2013).

It is notable that most of the satisfaction studies on higher institution of learning focus on student satisfaction with the universities core functions (Karna and Julinn, 2015). However, there is growing evidence that physical facilities support teaching and learning in various ways (Temple, 2008; Uline and Tschannen-moran, 2008; Tan and Kek, 2004). Therefore, facilities are among the major factors that determine the achievement of teaching and learning objectives, hence deplorable facilities pose a barrier to the achievement of this set objectives. This is verifiable with the report of the Nigerian university commission that physical facilities in the Universities were in deplorable condition which hinder the performance of staff and students.

Winsted (2000) and Zeithaml *et al*. (1990) uphold that service providers will only be able to deliver service encounters that will satisfy customers if they know what their customers want. If Universities recognize how their students observe the offered services, they may be able to adapt their services to a certain degree which should have a positive influence on student's perceived service quality and their levels of satisfaction. Oldfield and Baron (2000) sustain that "there is a feeling to view service quality in higher education from an organizational perspective". They recommend that institutions should better pay attention to what their students want instead of collecting "data based upon what the institution perceives its students find important".

Corresponding Author: Isa Abdullahi, Department of Real Estate, Faculty of Technology Management and Business, University Tun Hussein Onn Malaysia, Parit Raja, Batu Pahat, 86400 Johor, Malaysia

Equally, Joseph *et al.* (2005) noted that studies on service quality in higher education has relied too strongly on the input from academic insiders while excluding the input from the students themselves. They believe that traditional approaches leave "decisions about what constitutes quality of service (e.g. such as deciding what is 'most important' to students) exclusively in the hands of administrators and/or academics. The researchers, consequently, recommend that academic administrators should focus on understanding the needs of their students who are the specific and primary target audience. Equally, Douglas and Douglas (2006) suggest that the student experience and its improvement "should be at the forefront of any monitoring of higher education quality". Roberts (2009) have posited that students perform poorly due to the failure of the institutions to create the environment that is accommodating and conducive to their learning and educational needs. The facilities available in most Nigerian Public Universities do not suffice in enhancing students learning and performance (Christiana, 2011).

Recent evidence suggests that physical facilities in the universities require innovative solutions in dealing with the changes demand of its users. Facilities can be a medium of the interaction between student's and university stakeholders and should therefore not only be maintained but need to be managed in line with the need of changing universities education. However, what is clear from the literature review conducted is that there is a lack of an integrating framework for considering the physical facilities performance vis-à-vis student's satisfaction and experience with respect to Nigerian higher institutions, particularly Nigerian universities. In view of the above background, this study seeks to review the performance of physical facilities in relation to students' experience and satisfaction of Northern Nigerian universities.

Issues and problem: Now a days, modification has become so fundamental in the Nigerian universities and it is argued that the very idea of university education is being challenged (Anifawose and Lawal, 2013). Nigerian universities is in crisis and characterized by decline in quality of teaching and learning due to poor facilities and consequently lead to overcrowdings, poor in-door air quality, poorly maintained lecture theater/classrooms and this has a negative impact on staff and students performance (Omogbodegon, 2014).

According to the greatest assets on the balance sheet of a nation educational institution is good/qualitative physical facilities. Several studies established the relationship between facilities and quality of academic performance. Based on literature review, in-adequacy and poor facilities could lead to overcrowding, stress, unruly behavior, distractions and gradual decay.

Christiana (2011) in his study listed some items that contribute to the poor performance of students which include poor funding, lack of frequent curricular review, over population, student unrest, staff strike, poor infrastructure, poor relationship between the university and government and poor physical facilities for both staff and student. Similarly, Omogbodegon (2014) identified overcrowded lecture rooms, unfavorable environment and incessant interruption of electricity supply among the factors that affect student's performance. Oyedeji (2012) reported that there is a close significant relationship between the facilities and goals achievement variable of the educational institutions like; publications, students' academic performance, school discipline and community services.

However, Bello (2011) also observed that physical facilities are crucial for student's academic performance and lecturers' job effectiveness. He further, suggested that the provision of facilities such as buildings, transportation, landscaping, equipment and instructional facilities have positive significant impacts on the academic achievements of Nigerian Universities.

Oyedeji (2012) asserted that facilities in the schools are potent indicator for measuring the quality standard of education given by any level of educational system therefore physical facilities need to be adequately provided and utilized towards research, teacher's job performance and student academic performance.

Based on the literature review it can be deduced that Nigerian universities are in devastated condition with multitude of problems which can broadly be summarized as follows:

- **Inadequate facilities:** Used beyond the original carrying capacity. Physical facilities are old and static which cannot be adjust to present situation
- Dilapidated structures poorly ventilated, illuminated poorly furnished and not well equipped facilities
- Over-stretched/over-crowd facilities lecture theatres classroom, laboratories and workshops shared by many programmes across different faculties
- Indiscriminate or ambiguous conversion of facilities like open-air sport pavilion, old cafeteria, convocation arenas and even uncompleted buildings used for lectures. In some cases, practical are conducted under corrugated sheds or trees (Laughlin and Faulkner, 2012; Insch and Sun, 2013)

There is evidence to support the assertion that research on Universities facilities concentrate on student achievement in relation to physical facilities. From the previous research no study has attempted to measure the effect of performance of physical and non-physical facilities on student satisfaction of Universities in the study area. This therefore prompted the need to

investigate the influence of physical facilities performance on student's satisfaction from the perspective of students.

Literature review

Facilities performance measurement: Amartunga and Baldry (2003) described performance measurement as a process of assessing progress towards achieving pre-determined goals. Therefore, the basic foundations of performance measurement are the qualifications of elements which impact on organisational objectives, management control and evaluation. A classical management perspective, there is a need to assess performance in order to guide management decision-making (Amaratunga and Baldy, 2000). Performance measurement is a driver to an innovation process in an organisation. Alexander (1996) noted measurement of performance as one of the "three essential issues for the effective implementation of a facilities strategy". Thus performance measurement has become increasingly important both for reasons of justification to general management and to support management and practise within FM organisations.

Bernard Williams Associate (1996) identified three main measurement of facilities performance components namely physical, functional and financial. The physical performance relates to behaviour of the building's fabric and embraces physical properties such as structural integrity, lighting, heating, energy efficiency, maintainability, durability etc. Functional performance concerns the relationship of the building with it users and embraces issues such as space, ergonomic, health and safety, flexibility, etc. Finally, the financial performance arises from the physical and functional performance of the building and comprises capital expenditure and recurrent expenditure. The greatest influence upon an organisation's core objectives is the functional performance of its facilities which can account for 80- 90% of its total cost (Valins and Salter, 1996).

Physical (tangible) facilities in higher institutions: Facilities normally form part of the properties in an organization for supporting occupants to achieve goals (Alexander, 1996). Educational organization facilities aim to provide a comfortable learning environment in which to empower students. For years researchers have attempted to define facilities.

"Facilities" comprises buildings, grounds, utilities and equipment and will usually represent the majority of an entity's capital assets. Facilities are in two category, physical and non-physical (intangible). It's evident that real estate has become one of the significant elements to be considered for future direction, physical assets and facilities is real estate that gives the educational institutional excellent physical appearance of the University (Musa and Ahmad, 2012). Higher educational infrastructures are the physical assets and facilities that contribute directly to the teaching and learning process in the educational system. The physical facilities and environment give institutions their appropriate shape and atmosphere for teaching and learning.

According to Okorie and Uche physical facilities and environment depict the quality of the institutions. Therefore, physical assets and facilities development in higher education is complex and cost intensive. Accordingly, to safeguard their quality and maintain global standards is very challenging. Physical assets and facilities development in higher education involves provision of buildings, classrooms, hostels, staff quarters, workshops, laboratories, ICT centers, libraries, health centers and sports facilities.

Duyar (2010) investigated the relationship between school facility condition and the delivery of instruction, descriptive method of survey were used for the study and descriptive statistics and multiple regression was used for data analysis. The result indicated that conditions of natural light, air conditioning, indoor air quality and acoustics or noise control, physical condition of ceiling, floors, walls, windows and doors and configuration of classroom significantly contributed to predicting the delivery of instruction in Universities.

Anifawoshe and Lawal (2013) in a study titled state of physical facilities in Nigerians tertiary educational institution used regression analysis for data analysis. The result portrayed the physical facilities such as classroom, transport facilities, hostels for student well equipped library and laboratory make up Universities. Similarly, Ndiranzu and Udoto (2011) in their study, quality of learning facilities and learning environment, adopted exploratory descriptive design approach and data were analyzed using descriptive statistics. The result indicated that all physical facilities and university environment support academic activities.

Babatope (2010) investigated the problems of facilities in South Western Nigerian Universities. Questionnaires were distributed randomly to academic staff and frequency count and percentage score were used to analyze the data. The result indicated that adequate physical facilities and good maintenance improve the quality of Universities. Research by Fabiyi and Uzoka examined how universities plan to discharge their assignment in offering quality education especially in the area of physical facilities so as to keep pace with increase in student placement. A descriptive research design was adopted and questionnaires were distributed for data collection. Simple percentages and t-test were used for data analysis. The result indicated most of the physical facilities like classroom, laboratories, workshops

and libraries are old in Nigerian Universities and modification of such facilities to global standard will support academic activities of the schools.

In the same vein, study by investigated centralization and decentralization of physical facilities management in Nigeria, questionnaire survey method of research was used as the instrument of data collection, data were interpreted by means of descriptive statistics. The result indicated that adequacy and functionality of physical facilities such as classroom, classroom furniture, staff room, office furniture, laboratories, libraries, computers was realized in decentralize school.

Bakare investigated the availability, adequacy and condition of facilities in south west Universities of Nigeria. Survey design method approach, questionnaire and observation were the tools used for the data collection. Descriptive and inferential statistics were used for data analysis. The result indicated that adequate and good condition of physical facilities boost the morale of student. Sawyerr and Yusof (2013) investigated the infrastructural facilities and academic goals achievement, quantitative method of research adopted for the study, questionnaire were distributed to gather information and the analytical tools used for data analysis was chi-square. The result indicated that infrastructural facilities development variables like building, transportation, recreation and instructional facilities have significant relationship with variables of academic goals.

Mixed method were used for the study to identify certain factors responsible for deteriorating state of the facilities by Oyenuga analysis of data were conducted by means of descriptive and inferential statistics. The result portrayed that proper maintenance of University physical facilities give conducive atmosphere of teaching and learning environment. Beckers *et al*. (2015) in a research; a conceptual framework to identifying spatial implications of new way of learning in higher education. The result indicated that alternative learning space for students that will replaced classroom.

McLaughlin and Faulker examine the responses of a small number of first year University student on type of learning facilities they want on campus. Qualitative method approach were used for the study. The result indicate that student prepare another alternative for lectures with modern technology than the classroom. Provision of inspiring learning environment and safety is also a major attention in physical assets and facilitie's development. Maintenance, renewal and innovation are other determinants of the quality of the physical asset and facilities development effort of the institutions that will attract the students, staff and foreigners to the institutions.

Environmental beautification and sanitation give the aesthetic impression that guarantees the serenity and conducive climate for teaching, learning and research activities, healthy and secured lives in the school and its communities. Quality assurance of these facilities right from their planning, to development and utilization will ensure effective realization of set goals and objectives in higher education institutions. Abbasi *et al*. (2011) School infrastructure is everything from electricity, toilets, safe buildings, libraries, computer rooms, safe classrooms, sports halls and fields, laboratories for science experiments, running water and fencing. Without these things, a school cannot work properly.

Non-physical (intangible) facilities in higher institutions: The non-physical (intangible) facilities are the indoor environmental element in the higher institution. Indoor Environmental Quality (IEQ) is rarely considered as a priority in most development planning and management although IEQ elements account for 21% of green building evaluation criteria for non-residential building such as academic buildings in higher education intuitions based on Green Building Index (GBI) (Yusoff and Sulaiman, 2014). An imbalance of IEQ can also give negative impact to facilities, building and occupants. Many factors contribute to the IEQ. It is not limited for air pollution, thermal conditions, humidity, sound, lighting and odor but also includes the use of energy, design and natural ventilation. The Indoor Environmental Quality (IEQ) of a building is one of the primary concerns today as it reflects and influences the health and well-being of its occupants (Mendell and Heath, 2005). According to the United States Environmental Protection Agency Americans spend 90% of their time indoors, where the level of pollutants is much higher than it is outdoors, due to constant and long exposure to indoor air pollutants through inhalation. Also Fowler *et al*. (2005), posit that IEQ has major impacts on occupant health and productivity and eventually could adversely influence occupant turnover rate, absenteeism and satisfaction. Additionally, IEQ-related problems possess economic insinuations as Singh *et al*. (2010) submits that IEQ related problems, like sick building syndrome, other building-related illnesses and absenteeism result in increased costs. Improved IEQ performance of a facility enhances the satisfaction and productivity level of its occupants (Mozaffarian, 2008; Fowler *et al*., 2005; Mendell *et al*. 2002). Poor IEQ in school facilities adversely impacts the academic performance and attendance of students as it causes health-related problems (Amaratunga and Baldry, 2003; Mendell and Heath, 2005). Furthermore, they conclude that the

performance of students in school or non-school indoor atmospheres establishes direct relationship to indoor pollutants, thermal comfort and building characteristics.

Researches shows that facility performance evaluation must include Indoor Environmental Quality (IEQ) as one of the primary indicators (Sanoff, 2001; Mendell and Heath, 2005; Fowler *et al*., 2005; Amaratunga, and Baldry, 2003). Gursel mentions indoor climate and HVAC system as primary performance domains that must be evaluated and assessed. Furthermore, indoor climate could be assessed in terms of the IEQ and thermal comfort the buildings provide to their occupants. The National Australian Built Environment Rating System (NABERS), Post Occupancy Review of Buildings and their Engineering (PROBE), Comprehensive Assessment System for Building Environmental Efficiency (CASBEE), EcoEffect and Leadership in Energy and Environmental Design (LEED) all specify IEQ as a factor in their building performance evaluation strategies (Fowler *et al*., 2005). In addition, compliance with all relevant local, state and national fire codes should be achieved in order to provide the users with not only a healthy but also a safe indoor atmosphere. The evaluation of fire safety may include verifying that the fire safety system is maintained properly and regularly (Hassanain, 2008). These include fire evacuation plans, sprinkler systems, fire extinguishers, exit signs, emergency lighting and unblocked exits (Hassanain *et al*., 2010).

Students' satisfaction with higher institution facilities: Karna and Julin (2015) analyze facility related factors that have the greatest impacts on staff and student overall satisfaction. Survey method was used for the study and quadrant analysis was used for data interpretation. The result indicate that both student and staff are satisfied with the factor of teaching and learning spaces and improving quality of aforementioned facilities will directly affect student and staff achievement.

Coskun (2014) investigated the essential factors on student satisfaction. The research method used was survey and questionnaires were distributed to collect data from student in the University Albania. The data were analyzed of variance (ANOVA). The result posited that student were dissatisfied with the University learning environment. Investigated the importance of Hierarchical Service Quality Model (HSQM) and student satisfaction with higher education setting in Malaysia. Survey method was used in the study and Pearson correlation coefficient was also used in the analysis of data. The result portrayed that students were in various faculties, satisfied with the physical facilities.

In United Kingdom (UK) Gruber *et al*. (2010) investigated how student perceive the services they are offered at a German University and how satisfied they are with them. Quantitative approach of research were used, Cronbach alpha and regression analysis were used as analytical tools for the study and it is noted that the student shows their level of dissatisfaction with the physical facilities in the University such as classroom, laboratories, furniture and etc. Uka (2014) investigated University student satisfaction from the physical environment and service provided. Survey method approach were adopted, data analysis were analyzed by the use of Conbach alpha and analysis of variance (ANOVA). The result indicated that students are satisfied with campus environment.

In Malaysia, Arokiasamy and Abdullahi (2012) conducted a research investigating the measurement level of student satisfaction with the current service offered. Quantitative method was adopted, regression analysis were used in the analysis of data. The result found students are not satisfied with classroom and transport facilities. In the same vein, in Italy Petruzzellis *et al*. (2006) assess the university performance by testing student satisfaction. Survey method were used and data were analyzed through the use of descriptive statistics. The result indicated that student were dissatisfied with physical environment of the university.

Quantitative method was adopted by Abbasi *et al*. (2011) to measure the level of student satisfaction with current services offered by Pakistani Universities. Correlation analysis and descriptive statistics were used in analysis of the data obtain through the questionnaire distributed and the result portrayed the dissatisfaction of student with library, laboratory and student hostel. In Malaysia, Islam *et al*. (2011) investigated the factor that affect student's satisfaction in a higher learning institution. Survey method adopted and descriptive statistics and analysis of variance (ANOVA) were used in the data analysis, findings indicated cross-section of respondent the overall services offered by the University were moderate.

Yusof and Wen (2014) in their researched aimed to investigate the sufficiency of the facilities provided in the student's hostels and to also study the level of satisfaction of the students to the available facilities. The 250 questionnaires were distributed and answered by the respondents. A cluster sampling method in the data collection was used in order to get a fair representation on each floor of the hostel blocks. The data were analyzed by means of descriptive statistics such as the mean score and standard deviation. The result showed that students were generally dissatisfied with the hostel facilities with an average score of 2.42 on a 5-point scale which

represents 66.6% dissatisfaction level as well as not all the necessary facilities as noted by other researchers were provided for the student in the hostel. The study provided the students viewpoint of the housing facilities thus giving room for continuous improvement in student housing. In the same vain, Najib *et al.* (2011) conducted a study to investigate the degree of student satisfaction with campus Student Housing Facilities (SHF) at Malaysian Research Universities (RUs) and the relationship between satisfaction and loyalty actor. In the study, they proposed Students for Residential Satisfaction (SRS) framework to examine residential satisfaction from the student's point of view. They distributed questionnaires to respondents in three RUs. Data were analyzed using descriptive statistics. The result established that students are satisfied with the provided SHF with the SRS index of 2.96-74% satisfaction level and there is an important relationship between overall satisfaction and loyalty behavior as well as the proposed model is a sufficient instrument to measure SRS.

In United Kingdom (UK) Douglas *et al.* (2006) in their research they used the concept of the service-product bundle to plan the survey questionnaire and then applied SPSS and quadrant analysis to observe the results to establish which aspects of the University's services were most significant and the degree to which they satisfied the students. In the result, it was noted that the most important aspects were associated with teaching and learning while the least important were related with the physical facilities.

MATERIALS AND METHODS

The conceptual model started with a comprehensive review of relevant literature on physical and non-physical facilities in general. Therefore, a knowledge base for the current research was established. Secondary data was used and the Documentary secondary data adopted where journals, articles, books and the cyber internet were accessed for information. This type of study is seen as archival research.

The conceptual model: Studies and approaches have been discussed on the significance of school facilities to influence student's academic outcome. This study proposed a model to measure the level of school physical and non-physical facility performance and their effect on student's satisfaction. The following conceptual model seeks to combine the standard approaches on school facility (Fig. 1).

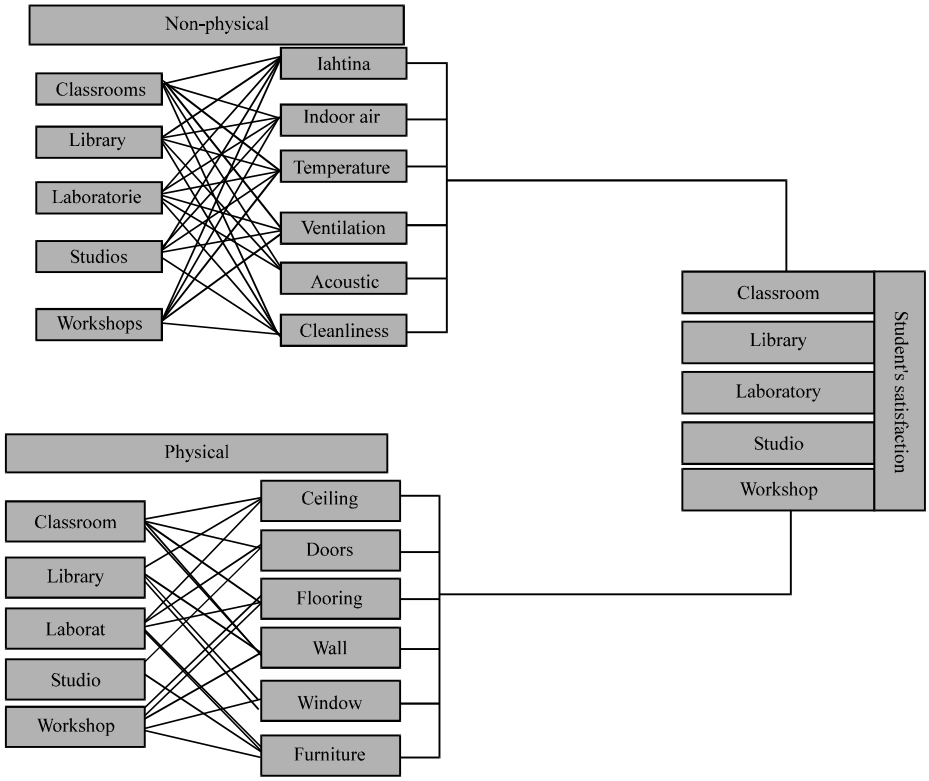

Fig. 1: Conceptual model for the study

RESULTS AND DISCUSSION

The model is based on the interaction of physical University facilities and the non-physical elements' performance based on the student's experience that determine of their overall satisfaction with the University facilities. The student's satisfaction construct is the dependent variable where the physical facilities (student's experience) and non-physical facilities serve as independent variables. The students experience component determines the student perception base on their experience of facilities as well as student satisfaction base on their perception of physical facilities. The purpose of using physical facilities performance is to generate feedback and to provide knowledge of how to improve both the facilities and the management process. The result of this process will lead to a better understanding of what the student's really needs and more about how the facilities perform. Physical facilities performance therefore finds expression within the domain of facilities management. FM encompasses a vast spectrum of perspectives about people, organizations and change processes to realize organizational goals and value.

CONCLUSION

The projected model revealed the performance of physical and non-physical facilities in Northern Nigerian Universities and how it affects the student's satisfaction. Also, it evaluated how performance of physical and non-physical universities facilities affect student's satisfaction with the facilities. Therefore, school facility is recognized significantly as supporting part in providing good teaching and learning environment. In this study, we have proposed and discussed the conceptual model in measuring the level of school facility performance and students' satisfaction such feedback is expected to improve quality of education in Nigerian universities.

REFERENCES

Abbasi, M.N., A. Malik, I.S. Chaudhry and M. Imdadullah, 2011. A study on student satisfaction in Pakistani universities: The case of Bahauddin Zakariya University, Pakistan. Asian Soc. Sci., 7: 209-221.

Alexander, K., 1996. A Strategy for Facilities Management: Theory and Practice. E & FN Spon, London, England.

Amaratunga, D. and D. Baldry, 2000. Assessment of facilities management performance in higher education properties. Facilities, 18: 293-301.

Amaratunga, D. and D. Baldry, 2003. A conceptual framework to measure facilities management performance. Property Manage., 21: 171-189.

Anifowose, M.O. and P.O. Lawal, 2013. State of physical facilities in Nigerian tertiary educational institutions: Case study of the federal university of technology, Minna, Niger State Nigeria. Niger. J. Technol. Res., 8: 56-60.

Arokiasamy, A.R.A. and A.G. Abdullah, 2012. Service quality and students' satisfaction at higher learning institutions: A case study of Malaysian university competitiveness. Int. J. Manage. Strategy, 3: 1-16.

Babatope, B.A., 2010. Problems of facilities in South West Nigerian universities and the way forward. Int. J. Educ. Administration Policy Stud., 2: 039-043.

Beckers, R., V.D.T. Voordt and G. Dewulf, 2015. A conceptual framework to identify spatial implications of new ways of learning in higher education. Facil., 33: 2-19.

Bello, T.O., 2011. Public private partnership infrastructural development and academic goals achievement of universities in the Southwest. Ph. D Thesis, University of Ilorin, Ilorin, Nigeria.

Bernard Williams Associates, 1996. Facilities Economics and Building Economics. University of Kent, Canterbury, England.

Christiana, O.O., 2011. Modes of funding Nigerian universities and the implications on performance. J. Int. Educ. Res., 7: 75-82.

Coskun, L., 2014. Investigating the essential factors on student satisfaction: A case of Albanian Private University. J. Educ. Soc. Res., 4: 489-495.

Douglas, J. and A. Douglas, 2006. Evaluating teaching quality. Qual. Higher Educ., 12: 3-13.

Douglas, J., A. Douglas and B. Barnes, 2006. Measuring student satisfaction at a UK university. Qual. Assur. Educ., 14: 251-267.

Duyar, I., 2010. Relationship between school facility conditions and the delivery of instruction: Evidence from a national survey of school principals. J. Facilities Manage., 8: 8-25.

Fowler, K.M., A.E. Solana and K. Spees, 2005. Building cost and performance metrics: Data collection protocol. Pacific Northwest National Laboratory, Richland, Washington.

Gregor, M.W. and D.S.S. Then, 1999. Facilities Management and the Business of Space. Routledge, Abingdon, England, Pages: 247.

Gruber, T., S. Fub, R. Voss and G.M. Zikuda, 2010. Examining student satisfaction with higher education services: Using a new measurement tool. Int. J. Public Sector Manage., 23: 105-123.

HEFCE, 2005. Higher education in United Kingdom. Bristol. Higher Education Funding Council for England, England.

Hassanain, M.A., 2008. On the performance evaluation of sustainable student housing facilities. J. Facilities Manage., 6: 212-225.

Hassanain, M.A., A. Sedky, Z.A. Adamu and A.W. Saif, 2010. A framework for quality evaluation of university housing facilities. J. Build. Appraisal, 5: 213-221.

Insch, A. and B. Sun, 2013. University students' needs and satisfaction with their host city. J. Place Manage. Dev., 6: 178-191.

Islam, M.A., A.R. Jalali and K.H.K. Ariffin, 2011. Service satisfaction: The case of a higher learning institution in Malaysia. Int. Educ. Stud., 4: 182-192.

Johnes, J. and J. Taylor, 1990. Performance Indicators in Higher Education: UK Universities. McGraw-Hill, New York, USA.

Joseph, M., M. Yakhou and G. Stone, 2005. An educational institution's quest for service quality: Customers' perspective. Qual. Assur. Educ., 13: 66-82.

Karna, S. and P. Julin, 2015. A framework for measuring student and staff satisfaction with university campus facilities. Qual. Assur. Educ., 23: 47-66.

Khalil, N., H.N. Husin and A.H. Nawawi, 2012. An analytical literature: Strategic improvement of sustainable building performance tool for Malaysia's higher institutions. Procedia Soc. Behav. Sci., 36: 306-313.

Laughlin, M.P. and J. Faulkner, 2012. Flexible spaces what students expect from university facilities. J. Facilities Manage., 10: 140-149.

Mendell, M.J. and G.A. Heath, 2005. Do indoor pollutants and thermal conditions in schools influence student performance?. A Crit. Rev. Lit. Indoor Air, 15: 27-52.

Mendell, M.J., W.J. Fisk, K. Kreiss, H. Levin and D. Alexander *et al.*, 2002. Improving the health of workers in indoor environments: Priority research needs for a national occupational research agenda. Am. J. Public Health, 92: 1430-1440.

Mozaffarian, R., 2008. Life-cycle indoor air quality comparisons between LEED certified and non-LEED certified buildings. P.hD Thesis, University of Florida, Gainesville, Florida.

Musa, M.F. and Z. Ahmad, 2012. Higher education physical assets and facilities. Procedia Soc. Behav. Sci., 50: 472-478.

Najib, U.M.N., A.N. Yusof and Z.N. Abidin, 2011. Student residential satisfaction in research universities. J. Facilities Manage., 9: 200-212.

Ndirangu, M. and M.O. Udoto, 2011. Quality of learning facilities and learning environment: Challenges for teaching and learning in Kenya's public universities. Qual. Assur. Educ., 19: 208-223.

Odediran, S.J., J.T. Gbadegesin and M.O. Babalola, 2015. Facilities management practices in the Nigerian public universities. J. Facilities Manage., 13: 5-26.

Oldfield, B.M. and S. Baron, 2000. Student perceptions of service quality in a UK university business and management faculty. Qual. Assur. Educ., 8: 85-95.

Omogbadegun, Z., 2014. Pilotable framework for overcoming barriers in learning in Nigerian educational system. Proceeding of the International Conference on Technology Education and Development, March 10-12, 2014, IATED, Valencia, Spain, ISBN: 978-84-616-8412-0, pp: 1879-1889.

Oyedeji, N.B., 2012. Principles and Practices of Educational Management. ARAS Press, Lagos, Nigeria,.

Petruzzellis, L., D.A.M. Uggento and S. Romanazzi, 2006. Student satisfaction and quality of service in Italian universities. Managing Serv. Qual. Int. J., 16: 349-364.

Roberts, L.W., 2009. Measuring school facility conditions: An illustration of the importance of purpose. J. Educ. Administration, 47: 368-380.

Sanoff, H., 2001. School building assessment methods. MSc Thesis, National Clearinghouse for Educational Facilities, North Carolina State University, Raleigh, North Carolina. https://eric.ed.gov/?id=ED448588.

Sawyerr, T.P. and N.A. Yusof, 2013. Student satisfaction with hostel facilities in Nigerian polytechnics. J. Facilities Manage., 11: 306-322.

Singh, A., M. Syal, S. Korkmaz and S. Grady, 2010. Costs and benefits of IEQ improvements in LEED office buildings. J. Infrastruct. Syst., 17: 86-94.

Tan, K.C. and S.W. Kek, 2004. Service quality in Higher Education using an enhanced SERVQUAL approach. Qual. Higher Educ., 10: 17-24.

Temple, P., 2008. Learning spaces in higher education: An under-researched topic. London Rev. Educ., 6: 229-241.

Uka, A., 2014. Student satisfaction as an indicator of quality in higher education. J. Educ. Instructional Stud. World, 4: 6-10.

Uline, C. and M. Tschannen-Moran, 2008. The walls speak: the interplay of quality facilities, school climate and student achievement. J. Educ. Admin., 46: 55-73.

Valins, M.S. and D. Salter, 1996. Futurecare: New Directions in Planning Health and Care Environments. Blackwell Publishing, Hoboken, New Jersey.

Vidalakis, C., M. Sun and A. Papa, 2013. The quality and value of higher education facilities: A comparative study. Facilities, 31: 489-504.

Winsted, K.F., 2000. Service behaviors that lead to satisfied customers. Eur. J. Market., 34: 399-417.

Yusoff, W.Z.W. and M.A. Sulaiman, 2014. Sustainable campus: Indoor environmental quality performance measurement for Malaysian public universities. Eur. J. Sustainable Dev., 3: 323-338.

Yusoff, W.Z.W. and W.R. Wen, 2014. Analysis of the international Sustainable Building Rating Systems (SBRSS) for sustainable development with special focused on Green Building Index (GBI) Malaysia. J. Environ. Conserv. Res., 11: 11-26.

Zeithaml, V.A., L.L. Berry and A. Parasuraman, 1990. Delivering Quality Service: Balancing Customer Perceptions and Expectations. The Free Press, New York, USA., ISBN-13: 9780029357019, Pages: 226.