

Usage Quality Assurance Tests in Investment Buildings: Need for Paradigm Guidelines - New Tasks for Estate Surveying and Valuation

Iheanyi Nnodirim Alaka

Department of Estate Management, Faculty of Environmental Sciences, Imo State University,
PMB 2000, Nigeria.

Author's E-contact: iheanyialaka@gmail.com

Abstracts

Introduction: Since the wake of the 21st century, rising cases of collapsing investment buildings, renters' rejection of properties structurally unfit as business or residential accommodations, and ongoing sealing of suspected weak buildings especially in Nigeria has become a source of serious concern. It is no longer news that the financial/other benefits from many housing investments and owner-occupied homes might be on-the-line sequel to risks of degenerating building conditions in spite of assurances by the building contractors that their properties would last a hundred years. It has become imperative to make evaluation reports regarding the usage-to-carrying capacity status of these buildings in maintenance and valuations as sustainability measures in directing investors' decisions and government actions regarding usage compliances among housing occupiers and owners of real estate facilities. A sincere transformation in the way housing is managed is the key direction.

Goal: This paper makes strong case for mandatory technical checks in real estate facilities before and during letting as measures to checking this ugly trend of building collapses affecting investments and owner-occupied properties. It therefore recommends the designing of housing quality test assurance policy applicable on all in-use and to-use facilities to eliminate/reduce significantly usage impacts on the lifespan of real estate facilities, its effects of investors' decisions and public trusts on the Estate Surveyors and Valuers competence to guarantee sustainable durability and financial growth especially for investment-driven real estate developments.

Methodology: Nigeria is taken as study area. Author sort the contributions of 30 Practicing Estate Surveyors managing properties in 20 out of 36 states of the federation by conducting structured exploratory interviews to verify the inclusivity of quality tests in real estate investment practices in Nigeria. The questionnaire was evaluated using the SWOT Analysis technique to substantiate the lack and need for such tests by practitioners. Also, the illusionary experimentation was employed to demonstrate the gap in reporting housing durability alterations and its impact on durational and financial decision projections in real estate facilities. Study outcomes were assessed using descriptive analysis techniques and presented on suitable tables.

Findings: Qualitative Usage Assurance Tests in real estate facilities has not been in in-depth considerations; many houses are let without conducting stability impact tests, lack operational evaluation and most often has irregularly-graduated depreciation effects on their durability. Findings also shows possible future risks of more collapses in high density urban buildings capable of undermining the advisory competence of Estate Surveyors and Valuers in handling Investments in Real Estate Facilities.

Conclusion: Usage Quality Assurance Test should be stepped up as mandatory service in business or multi-level properties, certified by an Estate Surveyor and Valuer to guard the nation against unprecedented records of abrupt investment losses. This is wake-up call to the profession to reconsider the use-to-value implications of facility spaces before, during and after letting to properly guide the investment decisions and project plans of investors in real facilities. Originality: This study is the first-ever attempt to introduce and advance the application of technical reporting practices on real estate facilities. It is an eye-opener to possible gaps and solutions to checking causes of distrust in professional reports regarding structural durability and usage reductive effects on investment values of real estate facilities.

Allocated to Theme H - New Technology and Data in Real Estate

1.0 Introduction

Investment buildings are known for their immovability, durability, ability to generate rental incomes and capital gains to the investors; a source of internal revenues to the governments in the forms of levies taxes or rates, and the largest source of accommodation in the emerging cities of the world. Investment buildings provide myriads of rental accommodation for both residential and non-residential accommodation seekers and are preferred above stock and other personal property investments due to their low or moderate risks when compared with their often impressive returns (Alaka, 2011; Kalu, 2009), security of title and of incomes (Okekwe, 2021; Okoh, 2018). They exist as buildings on ground floors, low-rise and high-rise real estate facilities and could serve specific or mixed purposes. This implies their usage may significantly impact against their longevity and durability of rental services thereby threatening the investors' futuristic income flows and possible selling price at termination of investment. Similarly, the alertness and resilience measures against possible neighbourhood environmental threats and the level of facilities maintenance against rapid depreciation of these facilities play major role in their productivity and durability. Technically, the average life expectancy of a modern block-reinforced buildings spans between 80 years to 120 years (Donnelly 2015; Perkins, 2008). The age accuracy significantly depends on a plethora of sustainability factors considered during the construction stages, especially the quality of materials used, quality of workmanship delivered, soil stability over time, duration the structure was exposed to harsh weather conditions prior to its completion; and during the operation stages on the investment buildings (including efficacy of responses to their Facilities maintenance and management needs, resilience measures against adverse neighbourhood environmental challenges to include flooding, hoodlums attacks and reactions from hazardous, toxic or radioactive wastes capable of attacking the foundations of the properties in events of flooding or over-flooding (Ekwujulu, 2019; Egbe, 2018). Sustainable measures therefore remains essential in handling these investment buildings if investors must avert possible collapse in the forms of severe structural defects, implosion or explosion (Umo, Okoknwo and Umo, 2018).

Building defects and collapses dates back to 27AD in the ancient Roman Empire where the famous Fidanae Amphitheatre of Italia collapsed killing over 20,000 persons in a single disaster (Chendo and Obi, 2015); 19th to 20th Century recorded several global cases of structural defects and building collapses caused by storms, fire outbreaks and sabotage (Wikipedia Free Encyclopaedia 2021). Nigeria is not excluded from the annals of building defects and collapses. According to Umo Okonkwo and Umo, (2018), there has been six decades of increasing building collapse cases in Nigeria with Lagos State being the worst hit. Many of these cases were traced to users and user-to-owners attitude towards facility safety, fire outbreaks, overcrowding, dragging of facilities maintenance obligations, neighbourhood flooding, among many reasons. Although the worst scene of building collapses in Nigeria was the Lagos cantonment bomb blasts of 2001 that killed 1,100 persons, and displaced over 18,000 Lagosians caused terrific tremor on several buildings (WHO, 2002; Wikipedia, 2002), building collapse has become an annual phenomenon in various parts of Nigeria with many of the incidents affecting the investment buildings, buildings under construction and owner-occupied properties.

As at 2019, the Building Collapse Prevention Guild BCPG reported that more than 36,000 buildings in Southern Nigeria are awaiting collapse; many of them are investment buildings, hundreds of these properties have already been demolished (Ojoye, 2019). Threatened building collapse is not only an indication of loss of investment assets or capital but inevitable loss of returns, destruction of personal properties in the affected building and damage of vital data that forms the part of businesses linked to the affected corporate

organisations in the affected building. Non-professionals have for clamped on the services of the Estate Surveyors and Valuers in some of these properties without recourse to the possible dangers of poor facilities management and maintenance attention required, unlike in property sales in which valuation reports are produced to prevent the conditions and qualities that determined the values (Lawal, 2015; Oladokun and Ojo, 2011). This largely affected the creditability of the Estate Surveyors and Valuers role in reducing or reporting human-induced building collapses at the detriment of the investors, their investment returns and the society at large. Measures have been taken by various governments especially in Lagos to seal buildings with trace of collapsing (Ojoye, 2019). Since the wake of the 21st century rising cases of collapsing buildings, renter's rejection of properties structurally unfit for residential accommodations, sealing of suspected weak buildings especially in Nigeria has become serious concern. The financial and other benefits from many housing investments and owner-occupied homes might be on the line sequel to risks of degenerating building conditions in spite of assurances by the building contractors or professionals that their properties would last over 100 years. It therefore becomes imperative to make assessment reports regarding the usage-to-carrying capacity status of these buildings for maintenances and valuations, as sustainability measures towards directing investment decisions and government actions regarding usage compliances among housing occupiers and owners of real estate facilities. A sincere transformation in the way housing is managed is the key direction. According to a Punch report, Nigeria recorded 43 cases of building collapses in 2019 alone. Lagos State had 17, cases, Anambra 6 cases as top on the list (Ihua-Maduenyi, 2020). This is perturbing as many of these incidents could have been averted if the Building Control Agencies have established effective synergies with the professionals in charge of building construction and property/facilities management. This way periodic facilities reports especially of the investment buildings are produced and reviewed for improved action plans in the near future. A 2016 update by BBC News illustratively identified six common causes of building collapses in Nigeria to include weak foundations, weak composition of building materials, mistakes from workers during construction, when the building is carrying heavier load than expected, no testing of strength of the building (integrity test), people living in condemned (i.e. unsafe buildings). Lawal (2015) and Alaka (2021) added to the list problems of foundation failure, lack of supervision of building under construction, natural phenomena, unlawful change of use of building, poor maintenances, lack of inadequate enforcement of planning laws and regulations, and bad design. Lawal opined that affected persons should seek redress for compensation, and that only competent professionals should handle issues pertaining to building construction, planning and maintenance such that will compel commitment of the contractors and eschew errors that could result in building collapses.

A cursory review of a study of collapses of building and infrastructure projects in Lagos State by Oyedele (2018) revealed that despite statutory policies setup to regulate building standards across the globe, building collapses are still traced to construction flaws; he reiterated the need to adhere to the National Building Codes of 2006. Conversely the study did not observe that constructed houses also collapse while in use, a reason the indictments on building collapses and burden of its prevention has placed on the Nigerian Institute of Builders, Nigerian Society of Engineers the Nigerian Institute of Architects Nigerian Institute of Town Planners and the Building Collapse Prevention Guild, with no reference to the obligations of the building usage Manager – the Estate Surveyors and Valuers. Facilities management and maintenance has in recent years taken the lead in reducing life-threatening faults in few investment buildings. Conversely, the Valuers' attention and role is only focused on the user-satisfaction during his evaluation of schedule of condition, level of damage and repairs required of the occupants during the termination of the lease show the assessment of the schedule of dilapidation. Most property owners are either oblivious or do not bother who manages their properties, whether their properties

are overcrowded, over-stressed with scattering loads, faced with environmental threats that could jeopardize the operation or durability of their investment buildings. It should be emphasized regularly that loss of an investment building will not only affect the accommodation index in the society, it will negatively impact the nation's physical and fiscal economy. This paper makes strong case for mandatory technical checks in real facilities before and during letting as measures in addressing this ugly trend affecting investment buildings and owner-occupied properties. It therefore recommends the designing of housing usage quality assurance test policy applicable on all in-use and to-use facilities, to eliminate or reduce significantly the usage impacts on the lifespan of real estate facilities, its effects on investors' decisions and on the Estate Surveyors and Valuers' competence to guarantee sustainable real estates and financial growth especially for investment-driven real estate developments.

2.0 Methodology

i. Study Area: Building collapse is wake-up call for paradigm changes from crude to technical or professional handling of investment buildings of which Nigeria is a serious concern within the sub-Saharan Africa. Therefore Nigeria was taken as the study area. As home to more than 200 million inhabitants and top destination to numerous indigenous and international businesses (registered and unregistered), she is made up of 36 states and a Federal Capital Territory almost at the centre of the Federation. The country has witnessed lots of developments of investment buildings in the last two decades with more housing and infrastructure projects..

ii. Sampling Design/Sample size: Nigeria has been faced with serious insecurity challenges threatening habitations especially in 16 states of the Federation. Sequel to the rising insurgence activities and unrest reported by the various local and international radio and television stations housed in Nigeria, the Author avoided studies in many States of the Federation to include Kogi, Niger, Kwara, Katsina, Bauchi, Borno, Benue, Taraba, Rivers Bayelsa, Edo, Zamfara and Sokoto States. The Author therefore sought the contributions of the Estate Surveyors and Valuers managing properties in 20 out of 36 States of the federation by conducting structured exploratory interviews to verify the inclusivity of usage quality assurance tests policy in real estate investments practices in Nigeria. At least one respondent was randomly selected from the remaining 20 States.

iii. Data collection: Information sought focused on assessing the acceptability of the usage-to-carrying capacity of buildings as a new normal in facilities maintenance and management practises for investment buildings within the Nigerian emergency cities. This study considered the opinion of the respondents in the aspects of its strengths, weaknesses, opportunities and threats. Data was retrieved with the aid of a semi-structured questionnaire in which the researcher divided the questions into four segments to capture the reactions of the respondents in line with each set of information sought. The questionnaire was strictly administered to practising and/or academic members of the Estate Surveying and Valuation profession in Nigeria, considering the research as the first step to developing an improved policy.

iv. Data analysis/presentation: Relative importance index analysis was used to determine only respondents' opinions on factors whose impacts are above the benchmark of 0.6 points on the basis of 30 responses as sample size to each question. In order to draw proper inference on the way forward for the adoption of the usage quality assurance test (USQUAT) policy, the Author evaluated the questionnaire using the SWOT analysis technique. This was necessary to substantiate the strength, weakness opportunity and threats of including such tests in Facilities maintenance and management. SWOT analysis is widely used for decision making by weighing the various aspects of an innovation before

their adoption into practices even in the real estate world (Camlibel, Alhangolu and Ugurlu, 2015). The illusionary experimentation approach was also adopted in this study to demonstrate the gap in managing investment building that causes building defects and collapses.

3.0 Results/Discussions

The questionnaire consisted of a set of structured interview questions bearing the author's presumed strengths, weaknesses, opportunities, and threats that could be associated with the adoption of a technical report covering the usage quality assurance tests hereinafter called USQUAT for short description. The result of relative impact values RIVs of responses retrieved and evaluated were presented on Tables 3.1, 3.2, 3.3 and 3.4 respectively. The affirmative confirmations for the author's guidelines/ new normal for the Estate Surveyors were subject to $RIV \geq 0.60$ points and vice versa for the denial of confirmation of author's presumptions. The results of data analysis were presented under suitable headings below.

3.1 USQUAT Guidelines/Strengths:

The author presented the respondents with details of 13 possible strengths of the new guidelines for usage quality assurance tests (USQUAT) investigation and reporting to reflect the proposed roles of the Estate Surveyors and Valuers upon the adoption of the USQUAT. The minimum acceptable value (MAV) to confirm relative adoption of the proposed guidelines and strength of USQUAT was determined at 0.60points using the relative importance index method. The outcomes of the data analysis were presented on Table 3.1. Therefore the adoption of proposed strength or guideline was if the relative impact value is greater than 0.60point (i.e. $RIV > 0.6pt$) while dropping of a guideline was determined at $RIV < 0.60$ points. This criteria was applied in other analysis on Tables 3.2 to 3.4.

Table 3.1: RIV Evaluation of the Author's Recommended Guideline/Strength for the ADOPTION OF USQUAT Policy

S/N	Strengths (Guidelines for USQUAT	MAV	RIV	N	Decision
		pts	pts		
1	<u>Control of electricity current leakage in buildings:</u> USQUAT will place responsibility of addressing reported cases of current electricity current leakages on the Estate Surveyor and Valuer to act promptly and avoid possible fire outbreak	0.60	0.65	30	Adopted
2	<u>Wall crack history documentation and remedying:</u> (a.) The USQUAT subject to information retrieved, report any existing cracks on walls of the buildings, their verified causes and maintenances with dates, to protect occupants from possible risks of structural defects.	0.60	0.72	30	Adopted
	(b.) Clear colored pictures showing the cracks reported should be enclosed with dates taken.	0.60	1.00	30	Adopted
3	<u>Floor cracks or instability and maintenance:</u> The Estate Surveyor and Valuer to use the USQUAT results to report any incidence where the floor(s) in a building indicated tremor effect or vibrates abnormally prior to letting, during schedule of condition, during occupation of the affected	0.60	0.95	30	Adopted

	space as may be complained by the occupant, or at the termination of occupant's lease term.				
4	<u>Indicating Insects/reptiles/rodents habitations:</u> The USQUAT report should clearly state the complaints of occupants (where applicable) about the part of walls or the foundation from which harmful insects, reptiles or rodents emerge into the accommodation as at the period of the investigation.	0.60	0.80	30	Adopted
5.	<u>Facility carrying capacity determination:</u> (a.) USQUAT evaluation shall include carrying out space sustainability tests prior to user occupation, to ascertain the ability of the space to contain the impact of live loads from users, their plants, machines and equipment, on the strength of the building.	0.60	0.85	30	Adopted
	(b.) Live load – to – floor strength evaluation should be emphasized before permission to occupy or use investment buildings or its space may be granted by the Estate Surveyor and Valuer who must be recognized as the Building Surveyor or Facilities Manager.	0.60	0.56	30	Dropped
	(c.) On-the-spot assessment of moving machines, plant and equipment should be evaluated and recommended in the USQUAT report where necessary.	0.60	0.80	30	Adopted
6	<u>Crowd management:</u> The USQUAT report should present the maximum tolerable weight of the accommodation spaces in consideration of the human weights and other moveable items that could exert high impact load on the floors (especially gatherings, or debates, clubs, or viewing units), the escalators, elevators, stairs or balconies within the building. The Estate Surveyor and Valuer should be acclimatized with load measuring devices for in-use and to-use accommodation facilities.	0.60	0.82	30	Adopted
7	<u>Plumbing fault detection:</u> The USQUAT report shall indicate any visible plumbing fault in the facility which its prolonged negligence could degenerate into serious structural defect or be capable of collapsing the building partially or completely.	0.60	1.00	30	Adopted
8	<u>Vibration control/ management:</u> a. While conducting a USQUAT inspection, the Estate Surveyor and Valuer should in consideration of the facility's durability, assess or evaluate where necessary, the possible limits for noise pollution which could affect the building components; and suggest maximum vibration impact level especially in multi-storey, or multi-tenanted real estate facilities.	0.60	0.72	30	Adopted
	b. USQUAT of a real estate facility should also report possible vibration impact arising from external factors such as road construction	0.60	1.00	30	Adopted

	works around the facility, placement of electricity generators, use of any form of explosives on or around the building, speakers on the different floors, etc whose destructive impact could result in gradual collapsing or structural weakness of the building components.				
9	<u>Indicating Environmental threats to real estate facilities:</u> USQUAT report shall where severe and urgent, present cases of or recurrences of flooding or over-flooding, deposits of hazardous wastes within close proximity to the subject facility under assurance testing and being the subject of maintenance management, which is/are capable of weakening the walls or fundamental components of the building. Such urgent recommendations as shall be conducted on the building shall be underlined to quickly draw the attention of the property/facility owner or possible user of the technical report.	0.60	1.00	30	Adopted
10	<u>Caving or losing roof:</u> Depending on the condition of the roof, the Estate Surveyor and Valuer should (with the aid of appropriate device for image data capturing) capture the state of repair of the roof whether bungalow, low-rise or high-rise and assess the roof condition for maintenance recommendation(s). The USQUAT report should therefore draw the attention of the property owner to possible remedy and the urgency needed.	0.60	1.00	30	Adopted
11	<u>Unhealthy social actions:</u> (a.) The Estate Surveyor and Valuer shall during USQUAT investigations and reporting, disclose any remarkable incidents of social unrest which by his perception might damage the building, (investment building or self-use building) as at the period of managing such property. (b.) Whereby the USQUAT inspection/investigation has been conducted prior to such incident, the event should on the client's request be disclosed as an addendum to the USQUAT report earlier produced.	0.60	0.88	30	Adopted
		0.60	0.72	30	Adopted
12	<u>Fire detection and Management:</u> Effective from date of first noticed occurrence, USQUAT reports shall systemically analyze any incidence of fire outbreak in the facility which affected whole or significant proportion of the facility to provide useful information for redefining the maintenance scheduling of the real estate facility/building, its new cost implications and possible impact on the usage (live) load management	0.60	1.00	30	Adopted
13	<u>Age and usage history reporting:</u> As it is evidential that there is relationship between building age, its usage and carrying capacity, the USQUAT report should detail the age of affected building (especially investment buildings), the year	0.60	1.00	30	Adopted

	the property was first occupied, its use or uses over time, and other relevant information whose knowledge could assist in prolonging the duration such facility could still be capable of yielding reasonable return before it can be marked for demolition. Such data should be disclosed by the property owner/ investor’s agent, to guide the preparation of the USQUAT report.				
--	---	--	--	--	--

Hints: MAV = Minimum acceptable value, RIV = relative impact value, N = sample size, pts = points

Findings showed the rejection of proposed guideline/strength on “Facility carrying capacity determination” issue 5(b.) (RIV = 0.56pts) which stipulated that live load –to – floor strength evaluation should be emphasised before permission to occupy or use investment buildings or their floor spaces may be granted by the Estate Surveyors and Valuers.

Those proposals on guidelines/strength of USQUAT that were adopted by relative responses included “control of electricity current leakages investment buildings” (RIV = 0.65pt), wall crack history documentation and remedying” (RIV = 0.72pt), “floor cracks or instability and maintenance” (RIV = 0.95pt), “indicating insects/reptiles/rodents habitations” (RIV = 0.85pt), “Facility carrying capacity determination” for issue 5(a.) (RIV = 0.85pts) and issue 5(c.) (RIV = 0.80pt), “crowd management” (RIV = 0.82pt), “plumbing fault detection” (RIV = 1.00pt), “vibration control/management issue 8(a.) (RIV = 0.72pt) and issue 8 (b.) (RIV = 1.00pt), “indicating environmental threats to real estate facilities” (RIV = 1.00pt) “caving or losing roof” (RIV = 1.00pt), “unhealthy social actions” (0.88pt), “fire detection and management” (RIV = 1.00pt) and “Age and usage history reporting” (1.00pt). In view of the above results the author deduced that developing the guidelines will be embraced by the Estate Surveyors and Valuers and will certainly meet their need to be guided in averting usage-linked building collapses in Nigeria. Therefore developing a policy on the Usage quality assurance testing and reporting as a new normal in addition to the other technical studies conducted on buildings will be welcomed development to the Estate Surveying and Valuation Profession.

3.2 Weaknesses to experience by adopting USQUAT policy in investment buildings

Developing a policy comes with some weaknesses that could be improved upon when confirmed by the policymakers. In order to enforce the usage quality assurance test (USQUAT) policy the author perceived some possible weaknesses that might act against its effectiveness or benefits. Considering the outcomes of analyses of responses to the author’s perception (see Table 3.2).

Table 3.2: Relative Importance value of responses to Suggested Weaknesses of Adopting USQUAT Guidelines on Investment Buildings

S/N	Weakness of the USQUAT	MAV pts	RIV pts	N	Confirmation
1	<u>Lack or insufficient professional exposure:</u> (a.) Most Estate Surveyors and Valuers lack the knowledge of physics especially in relation to vibration, evaluation of moment and momentum to technically compute USQUAT at the present time.	0.60	1.00	30	Absolutely true

	(b.) This skill as required in USQUAT appears very useful but new or yet-be-practiced / learnt in the Profession.	0.06	1.00	30	Absolutely true
	(c.) Most Estate Surveyors and Valuers would find it difficult to produce the Usage Assurance Quality Test report	0.60	1.00	30	Absolutely true
2	<u>Facilities /Technological exposure:</u> The USQUAT investigation will require a practicing firm acquiring or hiring most devices for evaluation to include the image capturing drone, load capacity detector, surveillance cameras etc., as will be required at different stages of the investigation. These professionals will have to be acclimatized with the facilities and new technologies before they can operate them.	0.60	1.00	30	Absolutely true
3	<u>Facility / device costs:</u> There will be more costs to be incurred in order to acquire such facilities for detecting vibrator impact, noise impact, and leakage of electricity current thereby making the evaluation often difficult for the USQUAT investigator.	0.60	1.00	30	Absolutely true
4	<u>Poor data keeping:</u> Most property owners are callous to in keeping records of rent payments, agreement on maintenance obligations, and expenses on maintenances even on the nature of maintenances or structural defects on their facilities. This could delay or hinder effective evaluation of the investor's facility USQUAT.	0.60	1.00	30	Absolutely true
5	<u>Valuation methods with often superficial data:</u> For most investment buildings that were valued using comparison method or profit method, the historical details over the years of existence of the comparable may not be accessible since they were not required initially for maintenance management purposes which the USQUAT requires. This suggests fresh usage quality assurance tests at the monetary detriment of the investor or property acquirer.	0.60	0.72	30	True
6	<u>Dearth of property usage and environmental hazard data:</u> Many property owners do not document accounts of overcrowding, abuse of accommodation use, flooding or over-flooding incidents within the property/neighbourhood, and seldom conducted stability tests on the building years after occupation. They also neglected the threats of waste deposits that could cause structural defects	0.60	0.95	30	True
7	<u>Corruption:</u> Deceitful owners of real estate facilities would like to cut corners and attempt to bribe their ways through to scuttle or compromise the gains of reporting this USQUAT, to the entire affected stakeholders.	0.60	1.00	30	Absolutely True

Hints: MAV = Minimum acceptable value, RIV = relative impact value, N = sample size, pts = points

The study outcomes confirmed that there is possible lack or insufficient professional exposure among members (RIV =1.00pt), facilities/technological exposure (RIV = 1.00pt), facility/devices costs (RIV = 1.00pt), poor data keeping (RIV = 1.00pt), valuation methods with often superficial data (0.72pt), dearth of property usage and environmental hazard data (RIV = 0.95pt) and corruption (RIV = 1.00pt). This suggested that in order to meet the set goals of usage quality assurance testing policy the many practitioners of the Estate Surveying and Valuation profession would be required to adjust to the new innovations in terms of knowledge about relevant devices for usage assessment, thorough facility evaluation and this should also reflect in the academic curriculum of the profession to help upcoming members to adapt to the upgrading practice. Conversely, the author thus opine that in view of the paucity of data from most existing investment buildings to guide the Estate Surveyors and Valuers decisions on USQUAT, the policy should be strongly enforced on properties of less than 10-15 years history of existence and particularly the investment buildings above ground level that carries much human and material loads at peak times.

3.3 Opportunities in adopting USQUAT policy in investment buildings

USQUAT policy is chiefly designed to help the Estate Surveyors and Valuers act against usage-linked building collapses in Nigeria, improve the quality of our valuation and appraisal reports and to align with the changing demands in the way our profession is practiced. The research proposed possible opportunities that could emerge from full adoption of the policy and sought the validation from the respondents using their responses on the retrieved questionnaire. The relative impact values of the responses on the 10 listed opportunities proved affirmative (See Table 3.3).

Table 3.3: Table 3.2: Relative Importance value of responses to Suggested opportunities of adopting the USQUAT for Management and Valuation of Investment Buildings

S/N	Opportunities of USQUAT	MAV	RIV	N	Confirmation Result
1	<u>Job creation:</u> Adopting USQUAT will help define the various roles which the Estate Surveyor and Valuer will perform in the Facilities Maintenance and Management and Valuation Appraisals of clients' properties. This therefore materializes into more jobs for the profession.	0.60	0.88	30	True
2	<u>Defining professional service jurisdictions:</u> Adopting and defending USQUAT will help define the limits of encroachment or coercion in the dispatch of professional obligations towards sustainable real estate practice between the Estate Surveyors and Valuers and the Allied professionals.	0.60	0.95	30	Absolutely true
3	<u>Upgrading Professional Trust and Integrity:</u> Whereby the Estate Surveyors and Valuers eventually embraces the USQUAT guideline, it shall boost their scope of skills in handling clients' real estate facilities, build more trust and integrity with the society and edge out the non-	0.60	1.00	30	Absolutely true

	professionals/charlatans in the real estate market who unhealthily compete with them.				
4	Real Estate Facility Data-banking: With the aid of the usage quality assurance test reports, the Estate Surveying and Valuation profession in collaboration with directly concerned Ministries, Departments and Agencies in Nigeria may develop high quality database for policymaking, regarding housing, investment buildings, environmental public health tracking, property usage capacities, and green real estate revolution and lots more	0.60	0.95	30	Absolutely true
5	Risk Control: USQUAT reports could serve as legal tool for property usage control thereby minimizing rising cases of humanly-induced building collapses in Nigeria	0.60	0.88	30	True
6	Compensation Reduction: A USQUAT study report will reveal early information about impending building collapse or severe structural defects for the facility manager to initiate moves for evacuation of human and personal assets contents within the threatening facility before it collapses. This way the quantum compensation the investor could have incurred for lack of information would have been reduced or averted completely.	0.60	0.75	30	True
7	Tenancy /space allocation review With the aid of USQUAT, reported cases of usage non-compliance or overbearing weight from user's plant/machine acting on part of whole floor or entire investment building could be reviewed and the situation effectively and more transparently salvaged.	0.60	0.66	30	True
8	Emergency Alertness: USQUAT reports will give landlords or facilities managers more administrative authority to know the structural risk level their facilities may be exposed to prior to any eventualities, the causes and implications for more proactive decisions.	0.60	0.72	30	True
9	Ease of tenant eviction The USQUAT report could draw attention of the owners or managers of the investment buildings about ailing tenants and authoritatively empower them on technical basis to evict them.	0.60	0.48	30	Untrue
10	Rental Value Decisions The USQUAT report will reveal the state of health of the facility and guide further decisions on future rents rather than mere reliance on values of comparable real estates with insufficient data on their structural health statuses.	0.6	0.96	30	Absolutely true

Hints: MAV = Minimum acceptable value, RIV = relative impact value, N = sample size, pts = points

Sequel to the results of the relative importance index analyses, the opportunities confirmed as true/very true included job creation (RIV = 0.88pt), defining professional service jurisdictions (0.95pt), upgrading professional trust and integrity (RIV = 1.00pt), real estate facility data-banking (RIV = 0.95pt), risk control (RIV = 0.88pt), compensation reduction (RIV = 0.75pt), tenancy/space allocation review (RIV = 0.66pt), alertness (RIV = emergency alertness (RIV = 0.66pt) and rental value decisions (RIV = 0.96pt). The relative responses however confirmed untrue the authors perception relating to ease of tenant eviction.

3.4 Threats from adopting USQUAT policy in investment buildings

The relative responses of respondents confirmed the author's position on the 9 listed possible threats that could emerge from the implementation of the usage quality assurance test policy on investment buildings (Table 3.4).

Table 3.4: Relative Importance value of responses to Suggested Possible threats associated with the adopting of USQUAT for investment buildings

S/N	The Threats of adopting USQUAT	MAV	RIV	N	Confirmation Result
1	<u>Fear of losing jobs:</u> (a.) The inexperienced members of the professionals that fail to adjust to the new normal after its adoption as legal standard in Estate Surveying and Valuation Practice might be scared of losing their clients to more experienced and upgraded firms or professionals.	0.60	1.00	30	Absolutely true
	(b.) Many non-professionals and charlatans with no knowledge of facilities evaluation, and management will risk being avoided by many clients especially as such jobs will now require technical reports on usage quality assurance tests duly certified by an Estate Surveyor and Valuer.	0.60	1.00	30	Absolutely true
2	<u>More service costs:</u> Periodic USQUAT investigations would imply more financial burden for ascertaining the usage fitness and correction of structural and usage faults thereby reducing the investors targeted investment net returns.	0.60	1.00	30	Absolutely true
3	<u>Disruption of inflow of investment returns:</u> Where a usage quality assurance investigation earmarked the understudied facility as "high risk of collapsing," urgent attention will be needed of the occupants to evacuate the building or stay away from it pending the implementation of any other recommendations, thus the rent count for the occupant will be suspended temporarily or indefinitely.	0.60	1.00	30	Absolutely true
4	<u>Fear of responsibility/accountability:</u> Many Estate or facility managers would scared being indicted for underperformance in managing clients' properties. Any defaulter on	0.60	1.00	30	Absolutely true

	adherence to recommended guidelines of USQUAT reports which results in building collapse or defects that may lead to loss of life and vital assets might risk a legal action, losing license to practice for a given period, incur heavy compensation burdens or imprisonment.				
5	<u>Convicting owners for illegal conversion of use:</u> Illegal change of use not conforming with the building code but more detrimental to the building stability might amount to a legal action, sealing the building, forceful eviction of occupiers, and /or other penalties	0.60	1.00	30	Absolutely true
6	<u>Threatened eviction of defaulting occupants:</u> Occupants whose activities in the building could threaten the building stability might risk being evicted before the expiration of their terms of leases.	0.60	1.00	30	Absolutely true
7	<u>Reducing neighbourhood property demands:</u> Strict adherence to the implementation of the USQUAT report could discourage renters from seeking accommodation within the neighbourhoods prone to high risk of building collapse.	0.60	0.37	30	False
8	<u>Possible increase in gross rent charges:</u> Property rents in developed neighbourhoods may be increased unusually because the most property investors will intentionally build in the cost of the reports into the rents.	0.60	1.00	30	Absolutely true
9	<u>Nonchalant behaviour of facility owners on neighbourhood- related threats:</u> _Neighbourhoods might be indifferent about threatening events or cases of weakening soil stability due to erosion, waterlogging estate premises, over-flooding or social threats.	0.60	1.00	30	Absolutely true

Hints: MAV = Minimum acceptable value, RIV = relative impact value, N = sample size, pts = points

All the threats confirmed as absolutely true included fear of losing jobs, more service costs, disruption of inflow of investment returns, fear of responsibility/accountability, convicting owners for illegal conversion of property use, threatened eviction of defaulting occupants, possible increase in gross rent charges and nonchalant behaviour of facility owners on neighbourhood-related threats. Contrary to the perception of the author the respondents relatively debunked the author's believe that implementing the USQUAT could reduce neighbourhood property demand (RIV = 3.7pt).

Based on the explanation regarding the threats, the researcher therefore viewed that USQUAT will not only affect the professionals, the owners of facilities will be affected also, this suggests that the practitioners will not only make efforts to upgrade in their skills and equipment for the job of the profession, but will require to uphold their integrity and the motto of the noble institution which is honesty and devotion in their discharge of duty as

Estate Surveyors and Valuers. Furthermore, the threats to the owners of real estate facilities would always remind more of them of the need to consult the right professional in property/facility management to always manage their investment buildings and to seek their expertise advice where the need arises.

3.5 SWOT Modelling of Resolutions about Adopting Usage Quality Assurance Test Policy

Sequel to the outcomes of the researcher weighed the affirmation of guidelines on USQUAT policy in line with its weaknesses, opportunities and threats and produced the way forward for smooth application of the USQUAT though subject to possible adjustments when a larger population of professionals are consulted in an FGD forum. The researcher emerged with the summarized model as presented below. The model presented an impression of close relationship between the adopted guidelines for further examination and the array of opportunities it would generate; a close link between the weakness and the threats, showing that the threats emerged because of the possible weaknesses (challenges) from adopting the USQUAT policy. Considering the recommendations on the way forward would enable the Professionals benefit substantially from the USQUAT policy.

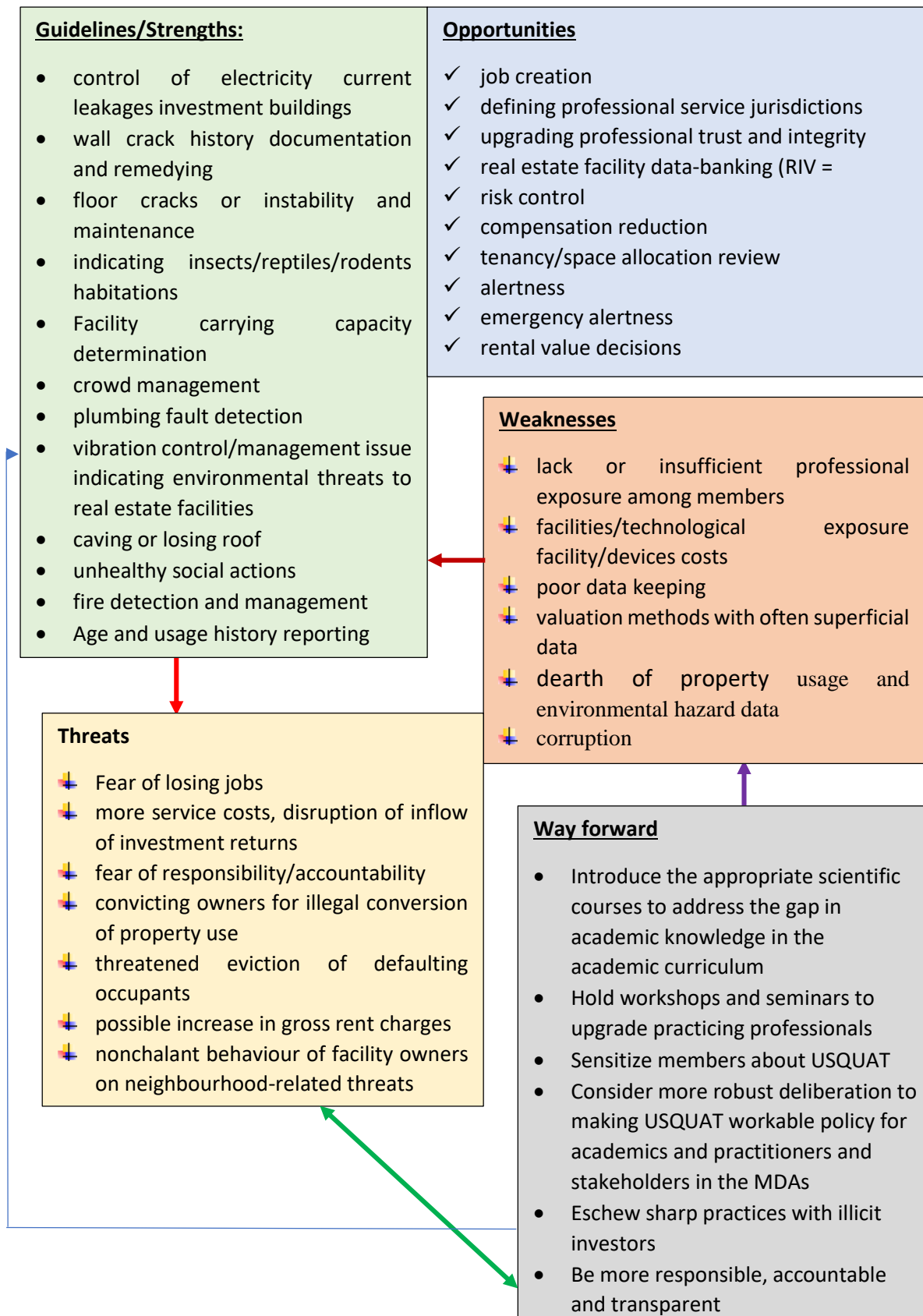


Figure 3.1: SWOT Model Resolution for the adoption of the Usage Quality Assurance Test (USQUAT) Policy

3.6 Illusionary Experimentation on the need for USQAT adoption

Load management on buildings above ground levels ought to be given serious considerations before, during and after construction. After construction of low-rise or high-rise investment buildings, the next step is to subject it to use(s) which from the moment of use begins to attract live loads. The weight and movement of these live loads are usually tolerated within the measurements specified during the construction. Any attempt to apply loads equal to the maximum load of the build could stretch the building component (floor, stairs, elevator, escalator, or even the walls) beyond the elastic limits. Besides, the work done on the building might not be to the standard designed and this calls for more caution especially in buildings that never underwent integrity test before letting. The accounts for the need to always evaluate the users' significant activities on the buildings from time to time to avoid actions that could endanger the health of the building.

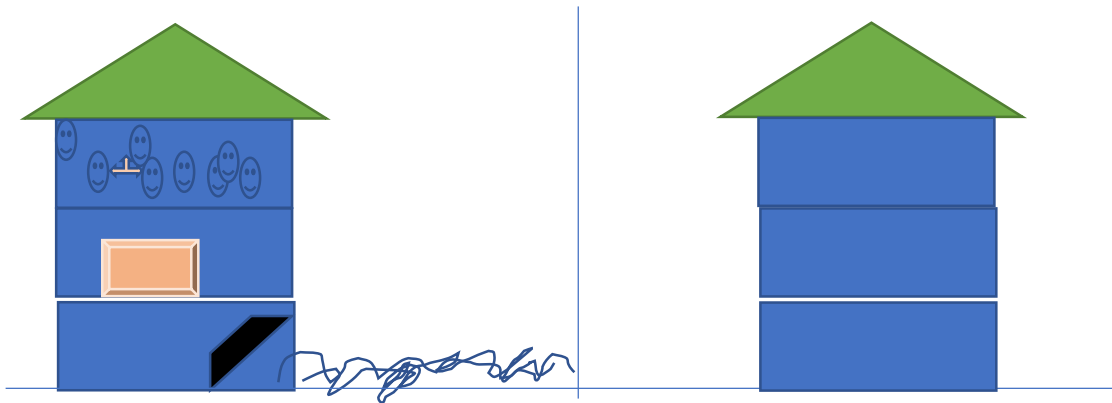


Figure 3.2: Property A with excess live load

Figure 3.3: Property A with minimal live load

Sources: Sketch by the Author

Consider two buildings of relatively equal carrying capacities, with the same soil stability, climatic conditions but bearing different loads as demonstrated on Figure 3.2 and 3.2. Property A was subjected to excess loads at the different levels; overcrowding on the second floor, heavy pole on the massive active machine with load equal to 60% the floor carrying capacity, and heavy column rested temporarily on the wall and later abandoned. Also the premises is more frequently submerged during rainy season and dries only after a week of sustained dry weather. On the other hand is property B with loads not up to 40% of each floor's carrying capacity. Based on the exertion of such live weights on property A, the property might degenerate with some structural defects rapid depletion of its lifespan against the investors assured period and where the load exceeds the maximum elastic limit (i.e. the plastic limit, could result in untimely partial or complete collapse.

4.0 Conclusion

Management of investment buildings in Nigeria should be handled with utmost care and by seasoned professionals with regards to responsibilities in discharge of duties within the jurisdiction of practices of the stakeholders. Negligence of the need to protect professionals' rights of duty must be stopped if the country must make meaningful progress in salvaging the real estate sector from the threats of building collapses rooted to usage after buildings have been certified as safe for habitation or usage. At this point in the history of the country, the Estate Surveyors and Valuers must rise to the call for drastic measures to upgrade the standard of facilities maintenance and management practices and restore

the hope of sustaining the country's real estate and economic developments by considering the scientific and technological knowledge that meets the task of effective and transparent management of investment buildings. Collective resolve to embrace standing facility usage quality assurance policy will be ideal step to conquer this problem is adequately reviewed and adopted as legal document for investment buildings.

References

Alaka, I.N. (2011). *Developing models for the evaluation of rent variability in student hostel investments in Owerri, Nigeria*. MSc thesis, Abia State University, Uturu.

Alaka, I.N. (2021). Property Development and Finance in Nigeria. Seminar Paper presented to the Department of Estate Management 17 March at Estate Management Seminar hall, Imo State University, Owerri.

BBC News (15 March 2019). Six reasons why so many buildings collapse. *BBC World Africa* (Updated record from 2016). Retrieved from <https://www.bbc.com/news/world-africa-47573224>

Camlibel, M.B., Alhanligolu, G., Ugurlu, D. (2015). Structural models of urban regeneration in emerging markets – Turkey case. *Book of proceedings on the 22nd Annual Conference of the European Real Estate Society ERES* held 24-27 June, at Taskila, Istanbul, Turkey. Pp. 85-105.

Chendo, I.G. & Obi, N.I. (2015). Building collapse in Nigeria: the causes, effects, consequences and remedies. *International Journal of Civil Engineering, Construction and Estate Management*, 3 (4), 41-49.

Donnelly, B.C. (2015). The life expectancy of buildings. Retrieved from <https://bradondonnelly.com/2015/09/06/the-life-expectancy-of-buildings/>

Egbe, C. (2018). Impact of organizational structure on the management of highrise facilities, case study of BAE Atlantic Tower, Lekki Phase I, Lagos State. Masters dissertation, University of Lagos, Nigeria.

Ekwujulu, G. J. (2019). Examination of the impact of maintenance on financial flows in the Royal hostel, Umudagu,-Mbieri, Owerri, Imo State. BSC dissertation, Department of Estate management, Imo State University, Owerri.

Ihua-Maduenyi, M. (27 January 2020). Nigeria recorded 43 building collapse cases in 2019 – Report. *Punch*. Retrieved from <https://punchng.com/nigeria-recorded-43-building-collapse-cases-in-2019-report/>

Kalu, I.U. (2009). *Property Valuation and Appraisals* (reprint). Owerri. Bon Publishers Inc.

Lawal P. (2015). Collapse of buildings and infrastructure projects – liabilities and rights of the affected persons. A paper presented at *the General Conference of the Nigerian Bar Association* held on 24th August, at the international conference centre, Abuja,

Ojoye, T. (2019). 36,000 buildings awaiting to collapse says BCPG. *Punch*. Retrieved from <https://punchng.com/36000-buildings-waiting-to-collapse-says-bcpg>

Okekwe, C. (2021). Examination of the effects of infrastructure on property investments within Owerri metropolis. B.Sc dissertation, Department of Estate Management, Imo State University.

Okoh, V.P.O. (2008). *Real Estate Investment Appraisal*. Lagos State: Printserve Ltd.

Oladokun, T. T. & Ojo, O. (2011). Incursion of non-professionals into property management practice in Nigeria. *Property Management*, 29 (3), 305-320.

Oyedele, O.A. (2018). A study of control measures of building collapse in Lagos State, Nigeria. Paper presented at *the 2018 FIG Congress titled Embracing our smart world where the continents connect: enhancing the geospatial maturity of societies*, held 6-11 May at Istanbul, Turkey.

Perkins, B. (9 January 2008). Life expectancy of home components. Reality Times. Retrieved from https://www.realitytimes.com/consumeradvice/homeowneradvice/item/5895-2008110_life_expect

Wikipedia (2002). 2002 Lagos Armoury Explosion-Wikipedia. Retrieved from https://en.wikipedia.org/wiki/2002_Lagos_armoury_explosion

World Health Organization WHO (23 January 2002). Armoury explosion in Lagos, Nigeria/WHO/Regional office for Africa. Retrieved from <http://who.int/disasters/repo/7567.doc>