

OBSERVANCE OF HEALTH, SAFETY, SECURITY AND ENVIRONMENTAL POLICIES BY FACILITIES MANAGEMENT FIRMS ON COMMERCIAL REAL ESTATE IN LAGOS

¹Kazeem .B. AKINBOLA, PhD; ²Iyabo .A. OLADENI AND ³Adeleye .G. ODEWANDE

¹DEPARTMENT OF ESTATE MANAGEMENT AND VALUATION,
THE FEDERAL POLYTECHNIC, ILARO, OGUN STATE, NIGERIA.

kazeem.akinbola@federalpolvilaro.edu.ng; +2348030494742

²DEPARTMENT OF ESTATE MANAGEMENT,
ADESEUN OGUNDOYIN POLYTECHNIC, ERUWA, OYO STATE, NIGERIA.

iyabodeni@gmail.com; +2348058601836

³DEPARTMENT OF ESTATE MANAGEMENT AND VALUATION,
THE FEDERAL POLYTECHNIC, EDE, OSUN STATE, NIGERIA.

odewande.adeleve@federalpolvede.edu.ng; +2348034631178

ABSTRACT

Generally, workplace dynamics which encapsulates among other things, inter and intra movements of persons, materials, goods and even services, all with tangential requirements that call for FM concerns in terms of health, safety, security and environmental safeguards, with central motives revolving around tranquillity in workplace thereby increasing the per capital productivity of individual workers, as well as overall collective turn-over of the organisation. Hence the need to assess the level of observance of HSSE policies and practices of FM services providers with respect to the commercial real estate sub-sector of the Lagos property market, as it was established that, availability of health, safety, security and environmental policies, notwithstanding, risks and accidents of unimaginable dimensions are still prevalent among commercial real estate in particular, leading to casualties sometimes, especially among the high-rise multi-users commercially held properties, with overall suspicion to doubt the observance of HSSE policies by FM service providers, the assessment of which forms the basis for conducting this research.. Survey research design was adopted and data were collected using 125 copies of 5-point Likert scale questionnaires. From which 106 copies were retrieved, translating to 84.8% distribution-retrieval rate. Descriptive and inferential statistics laced with mean and standard deviation were used for the analysis. Results show that there are significant levels of observance of health, safety, health and environmental policies by FM services providers on commercial real estate via institutionalisation of HSSE procedural framework FM service providers to key into, as well as upskilling of commercial real estate users' understanding of HSSE policies and practice through bespoke trainings, with standard deviation output of 0.798 and 0.795 respectively, but paradoxically, the observance failed to impressively translate to expected contributions of HSSE policies in terms of values and eases the stringency of the safety tasks of FM service providers with a somewhat low standard deviation output of 0.451. The study concluded by suggesting among other things, that there is need for increased sensitisation as well as regulatory monitoring by relevant government agencies on HSSE with a view to improving upon the present appalling state of impact of the HSSE policies observance by FM service providers on the real estate industry.

KEYWORDS: *FM Firms, Health & Safety, Security & Environment, Policies Compliance, Commercial Real Estate*

1.0 INTRODUCTION AND BACKGROUND RATIONALE

It is no gainsaying that workplace activities in more than three-quarter of developing countries and even economies in transition, are physically driven by movements of all manners of human beings, making them more labour intensive and less technology-entwined. Sadly to know that, even some of these activities are sometimes conducted at height beyond the common storeys, which makes such workplaces need more than one can imagine, the presence of framework that offers steady and stable services provisioning that ensures guaranteed health, safety, security and environment, so as to address the naked risks being brought to the fore, by the vulnerability quotients of such workplaces (Choudhry and Masood, 2011; Zock, 2005). Besides the fact that some of these workplaces are being occupied as embodiments of socio-economic activities, it is important to stress that, they are also being seen as havens for storing a lot of goods, used, waiting to be used, produced, etc, which thus make them to be full of all manners of typical or near-typically-injurious substances, the containment of which necessitates the provisioning of policies and practises that serve as system-driven frameworks on health, safety, security and environment (Zweers, *et al.*, 2012).

In addition, it is important to aver that, improperly monitored super-structural edifice, especially those ones with multidimensional usage of commercial nature are of greater propensity to trigger challenges that induced by highly-intensive traffic of human and vehicular classification, resultantly culminating in disaster of collapse, which could be of micro, meso and even macro scales, which HSSE provisioning could naturally avert [Yau and Ng,

2011; Zohar, 2010]. Empirical findings abound that have sufficiently affirmed that clear differential are found between cases, preponderance and magnitudes of risks and vulnerability levels among first, second and third economies, with copious evidences pointing to the fact that, in some instances there could be as great as a three-some of occurrences of breaches in safety, security, health and environmental backlashes, especially among workplaces found in third worlds as compared to statistics in the first world (Vacher, *et al.*, 2010).

In fact, it has been further clarified that there exists some degree of innate hazards during the design and construction stages of some the commercially-held properties, the manifestations of which become known at the usage and operations stages, the resultant effects of which affect the anticipated productivities of workforce so greatly, the benefits of hindsight of which an FM services providers should be able to harness and deploy through carefully orchestrated HSSE policies and practices [Tuomainen, *et al.*, 2004].

It is also being argued that, the issue of health, safety, security and environment in the real estate and facilities management sector in Nigeria cannot be over-emphasised, as it has extended its eminence in a way that makes it a *sine qua non* to what can address the festering challenges linked to increasing cases of risks and fatalities of varying degrees emanating from dysfunctional building system, the prevalence of which is fuelled partly by the intensity of use and ill-operationalisation as well as total non-compliance to standards as prescribed by HSSE policies, among others [Tarlo, *et al.*, 2008].

As it were, it is no gainsaying to aver that robust framework of policies drives a well-sensitised culture of full awareness of health, safety, security and environment in ensuring a front-end capacity to internalise any tendencies of risks that build up to vulnerability that often resultantly lead to casualties of differing scales, especially if not properly contextualised early enough, especially those workplaces with high intensity at the floor levels on the storey height of commercially-held properties. It is as well also important to add that policies with insurance-driven contents can be of great impact in forestalling the recklessness associated with manhandling of safety and health related happenstances by facilities management services providers, through appropriate provisions on safeguarding against foreseen and unforeseen challenging circumstances that may pose threat[s] of calculable magnitude against the users and other stakeholders of a commercially-involved real estate [Takahashi, et., 2008], for example, the stating of ways and manners of transporting foul-oozing substance, as well as the quantum of such item allowable at any given time, among other relevant clauses.

Therefore, it is against the above background that this research was conducted to seek the extent of the level of observance being exhibited by facilities management services providers with respect to provisions of the health, safety, security and environment-defined policies and practices, towards frontally arresting tendencies of vulnerability, threats, risks and potential fatalities by examining the impacts and / or adversity that compliance with, or rejection of HSSE policies have respectively prevented, or brought, and still have the propensity to bring upon commercially-held real estate in Nigeria, with special reference to Lagos.

2.0 REVIEW OF PAST RELEVANT EMPIRICAL WORKS

It was earlier opined by Tait and Walker (2000) that, paramountcy in the challenges associated with issues that border on health, safety, security and environment that bedevil real estate and construction industry, especially those of manageable size is the operational duration available for such size of organisation. Most often, the custodians of facilities management assignments that are found within the real estate and construction industry, do discover that requests of the different FM supports, which form main parts of what they do in dealing with the business take-off, but unfortunately, all of these restrict time to address health and safety issues. It is important to aver that, hiccups being experienced by businesses, which include but not limited to workforce gap, operational and production related activities, circuiting of the cash-flow, fluctuated sales volume, all of which are considered to be quite enormous for companies of manageable size, as against that of companies with relatively bigger extent [Zalejska-Jonsson & Wilhelmsson. 2013; Wu, *et al.*, 2011].

Thence, it stands to reason that the above revealed scenario has a way of resultantly make all of the issues that are captured therein to prevent manageably-sized facilities management service providers on the one hand, as well as their client-focused FM service receivers, the needed wherewithal to sufficiently allocate the requisite resources and priority to health, safety, security and environment needs as expected (Guidotti. 2011). Along the same vein, it is being argued that often times, there are huge and copious gap in terms of absence of well-orchestrated structure outfitting the

health, safety, security and environment arrangement in form of an organised unit through which modules to monitor the degree of observance of stipulations of HSSE could have been deployed, as it is always being further established that a sufficient number of manageably-sized facilities management services providers flout a greater number of HSSE rules, at the detriment of their clients which in this case, are the commercially-held real estate concerns [Sundell, *et al.*, 2011; Sivasubramani, *et al.*, 2004b].

Demonstrably, one can illustrate the simplest provision of HSSE policies from the perspective of food consumption and / or dietary formulae that should be avoided completely or sometimes, partially, while one engages in the business activities of certain nature, seldom at some heights along the vertical floors of some high-rise commercially-held real estate concerns [Sterflinger, *et al.*, 2013; Phares, *et al.*, 2007]. For example, food and drinks that contain elements of ethanol, such as gins, hot wines, etc, as well as drugs of hard substances which are found in marijuana, cocaine, etc are completely bared for consumptive uses in workplaces, regardless of the production or operational activities that go on there, as well as the height of the building, among others [Norhidayah, *et al.*, 2013]. The HSSE provision says that whoever is confirmed to have engaged in the habit of consumption of, or in caught with the possession of, or by extension suspected to be under the influence of, alcohol or drugs, within and around workplace[s], such individual shall immediately be removed from such commercially-held real estate perimeter area, and risks being absolutely banned from future access, especially if found to be a serial user of such hard substances [Muise, *et al.*, 2010; Mesa-Frias, *et al.*, 2014].

Hence, it is pertinent to submit that, often times, the non-possession of well-structured arrangement by manageably-sized business organisations, even including that of the FM services providers, of HSSE unit within their organizations, continue to make it quite difficult to deploy necessary measures in controlling the injurious activities of workers in their business organisations [Mendell, *et al.*, 2013; Li, *et al.*, 2007]. In addition to the foregoing, is such other aspect of HSSE policies that revolves around such acts like inordinate or reckless handling of left-overs, or remnants from used items of say, janitorials, or any other such items of daily, weekly, fortnightly or any other regularly deployed consumables that are meant to upkeep and constantly maintain the pleasantness of the built facilities, with which desirable level of productivity of the workforce could be maintained and improved upon [Hobday and Dancer, 2013]. It is also being found out that on some instances, quite a number of facilities service providers, as well as those of the concerned commercially-held real estate concerns, which is the latter upon which the expertise of the former is being deployed, such are found in the contexts of exhibition of habits of disposing incompletely used liquid waste, wittingly or unwittingly on the ground, ditches and pits, as well as drains, both on ground and in storm open pipes, as against the compliance with properly laid down waste disposal procedure[(Adeogun & Okafor, 2013; Fisk, *et al.*, 2009).

Furthermore, it is very pertinent to note that, such ideal actions of HSSE defined, which contemplates that the waste of liquid or pseudo-liquid nature, should be properly disposed through well annotated and detailed IDs that showcase the distinguishing features of whichever containers, within which such



supposedly obnoxious liquid substance are being stored, all for the purpose of careful handling before disposal, so as to avoid all manners of blow-out which are capable of increasing the vulnerability of the workforce in a commercially-held real estate concern, with resultant inability of the facility management service providers to curb its festering and far reaching HSSE implications on all stakeholders.[Akinbola and Oluwole, 2019a]. According to Griffin, Hall and Watson (2005), part of the reasons given for not partaking in the ‘Fair Chance at Work’, commenced by SMEs, wherein only 4 out of several considered businesses took advantage of free services to encourage health at work, which focused on curbing the poor HSSE mentality, such as: time to spend on operations; difficulties during the business year; pushed timescales; executive and technical negligence; and other production-related priorities [Fairman and Yapp, 2005].

Lastly, it is important to recognise and be truthful to state that, Nigeria, inspite of being adjudged as the demographically-strongest nation on the continent of Africa, as well as the economy with the largest growth variable indices (World Bank, 2016), yet, sadly to note that, her real estate and construction industry which plays such a very noble role upon which nation’s economy pivotally relies, in terms of comparative sectoral contribution to national Gross Domestic Product GDP, which as at 2017 stood at 3.77% (National Bureau of Statistics, 2018), could be treating health, safety, security and environmental related requirements with such insignificant steam of consideration. It is quite disturbing to note that this poor recognition has been attributed to less consideration for managerially-driven scorecards, upon which the health, safety, security and

environment practices are being viewed, which ultimately pre-envisions the emerging policy frameworks attendant thereto (Al-Humaidi and Tan, 2010). It is hard to comprehend the rationale behind Nigeria, which as a country, persists in being found quite poor in the evolvement and execution of, especially the occupational aspects of HSSE practices, inspite of the fact that, the country signed a pact as a member to the Geneva Occupational Safety and Health Convention 1981[Akinbola and Oluwole, 2019b; Idoro, 2011].

3.0 MATERIALS AND METHODS

The choice of survey method was considered suitable and eventually deployed in conducting this research. The demographics with which the research was based, was made up of the trio of facilities management service providers, clients’ organisations which are into one form of commercial-based business activities or the other, as well as those that are considered to be customers who come around to transact one form of business or the other within the selected commercially-held facilities in highbrow island area of Lagos. The three target groups from where these respondents were selected, was informed as a decision based on the fact that, they are directly involved in the spectrum of activities which are performed within the selected commercial real estate with a high degree of unavoidable contacts with one another vis-à-vis commonality in the real reception of the impacts that goes with non-observance of HSSE policies and poor handling of desirably-expected practice, but with different nuances and perception of how the rightness or otherwise about the observance is being measured, which the room for an objective, fair and balanced viewpoints and assessment of the underlie issues.

Further to this, one can as well aver that Lagos was chosen, essentially because, much as HSSE issues are found everywhere, their intensity is greater in the study area, due partly to the fact that the volume of what characterises the requirements to warrant the need for HSSE is much in Lagos than so many other places, due to a lot of reasons, part of which is multiplicity of business activities, driven by large demographics of people, with greater steam into which facilities are made to experience, as well as the fact that well above 50% of Nigeria's commercial real estate assets are found in Lagos, among others reasons. One hundred and six (106) copies of questionnaire were retrieved out of one hundred and twenty-five (125) copies that were distributed, in consonance with Holloway (2007), among the three targeted respondents, who are FM service provider, clients' organisations using the commercially-held real estate, and customers to these commercially-held business organisations in Lagos State. This research adopts a purposive sampling technique. The study deployed purposive sampling technique, this was on the rationale that the survey required focus on well set pockets of targeted respondents, being research that relies on sufficient knowledge an awareness about the issues under consideration

4.0 RESULTS AND DISCUSSIONS

4.1 Demographic Characteristics of the Respondents

Table 1 shows the results of the demographic characteristics of the respondents. Out of the 106 respondents from whom the retrieved copies of questionnaire could be traced, 39 were engaged as facilities management service providers while 67

were engaged as admixture of FM clients organisations who are held within commercial real estate for their various business and economic activities, as well as their numerous customers who come around for all sorts of transactions. Eminently, the percentages that are associated with the three categories of respondents who are being subsumed into two major classes for the ease of analysis and by the nature of the similarities of their involvement in FM issues, particularly the one under the study, which are FM service providers on the one hand and the commercial real estate stakeholders, who are the business organisations that are direct clients to the FM service providers and the customers that patronise and / or transact all sorts of business activities with them, are 36.78% and 63.22% respectively. While the in-demographical breakdown are of the fact that well half of the total population of the FM service providers are of sufficient age, as 19 which translates to 17.92% out of the totality of 39 FM service providers are above 50 years of age, coincidentally with a commensurate large population on the side of the FM clients and the customers to them, which jointly form the users and operators of the business activities that are conducted within commercial real estate, as 38 out of total of 67 respondents, translating to 35.84% are found to be 50 years and above. Other pointers in the direction of the fact that there is expectation to strongly believe there will be adequate awareness and understanding of the FM service provisioning, especially from the large population of FM service providers with sufficient level of education of not less than HND / BSc with 15 of the 39 respondents, which translates to 14.15%, as well as their counterparts in the class of FM clients and their customers within the commercial real estate with

minimum of an MSc / MBA in the hands of 24 of the 67 respondents, translating to 22.64%, but so surprisingly to note that the experience with FM service provisioning and most especially the awareness and understanding of the health, safety, security and environmental dimensions of the FM services to the society, as evidenced through

commercial real estate is damn low, as revealed by just 10 to 15 years as the longest years with largest population of respondents, where 16 and 20 respondents, translating to 15.09% and 18.87% of FM service and FM clients cum their associated customers are respectively of such awareness, which is considered not so impressive.

Table 1: Demographic Characteristics of the Respondents

Demographic Variables	FM Service Providers		FM Clients / Customers		Total	
	F	%	F	%	F	%
Age group						
20-30	4	3.77	3	2.83	7	6.60
31-40	7	6.60	11	10.38	18	16.98
41-50	9	8.49	15	14.15	24	22.64
51 and above	19	17.92	38	35.84	57	53.77
Highest level of education						
High School/Tech. Cert.	1	0.94	4	3.77	5	4.72
ND / NCE	9	8.9	16	15.09	25	23.58
HND / B.Sc	15	14.15	21	19.81	36	33.96
M.Sc / MBA	12	11.32	24	22.64	36	33.96
PhD	2	1.89	2	1.89	4	3.77
Years of Exposure to FM Experience						
1-5 years	3	2.83	11	10.38	14	13.21
6-10 years	10	9.43	10	9.43	20	18.87
10-15 years	16	15.09	20	18.87	36	33.96
15-20 years	6	5.66	19	17.92	25	23.58
Above 21 years	4	3.77	7	6.60	11	10.38

4.2 Observance of Health, Safety, Security and Environmental Policies on Commercial Real Estate in Lagos

The extent and strength of observance were gauged on a graduated scale that was measured through a

5- point Likert scale, with high observance, moderate observance, low observance, least observance, no observance rating, as results displayed in Table 2 eminently so depict, which is the fact that HSSE_vulnerability threats [HVTs], Activities-Embedded Safety Awareness and

Injury_Prone Assessment are most considered worthy of policies of HSSE that are being observed, with 2.37, 2.26 and 2.31, as well as 0.429, 0.536 and 0.845 as mean and standard deviation of the mentioned HSSE policies respectively. Essentially they are variously providing safeguards of different pedestals against challenges associated with all manners of fallouts from ill-provision or outright absence of provision of HSSE policies in mentioned areas by FM services providers for their commercial real estate clients, as their existence, protect all stakeholders from unfortunate situation that stand to arise in the complexion of injuries, fatalities, epidemics, etc, which are driven by operational conditions in workplaces. Also, it is very imperative to report that, those that are found to be of less priorities among the HSSE policies being pursued by FM services providers for their clients and their customers that are found to be involved in one

business activities or the other within the commercial real estate are facilities system jamming alarm, building defects human responsiveness and HSSE human-statutory interface, with 1.92, 1.85 and 1.82 as well as 1.102, 0.970 and 0.723 as the mean and standard deviation of those HSSE policies, as observed by the FM services providers on the commercial real estate, respectively. The import of this is that, the propensity is quite evident that, the expected protection to shield stakeholders who are the business organisations that are the FM clients, as well as the customers patronising them, with all the economic activities going on within the commercial real estate, stand to be unguaranteed, thereby exposing them in the arms way of an environment without or with less than required policy frameworks on health, safety, security and environmental dimensions to FM service provisioning on commercial real estate.

Table 2: Observance of Health, Safety, Security and Environmental Policies by Facilities Management Service Providers on Commercial Real Estate in Lagos

HSSE Policies	Mean	Std. Deviation
HSSE Vulnerability Threats (HVTs)	2.37	0.429
Activities-Embedded Safety Awareness	2.26	0.536
Injury_Prone Assessment	2.31	0.845
Safety_Perception Mechanism	2.29	0.580
Environmental_Inspection Procedure (EIP)	2.45	0.614
Programmed Facilities Audit	2.13	0.815
Professional Security Provisioning	2.09	0.813
Liability Consequential Measures	1.97	0.725
Value_Based HSSE Culture	1.95	1.109
Facilities_System Jamming Alarm	1.92	1.102
Building Defects Human Responsiveness	1.85	0.970
HSSE-Human Statutory Interface	1.82	0.723

4.3 Frequency of Health, Safety, Security and Environmental Policies Deployed by Facilities Management Firms on Commercial Real Estate in Lagos

Frequency of deployment of HSSE policies upon commercial real estate by Facilities Management providers was being evaluated through a well-structured 5-point Likert scale questionnaire detailed with a set of 12-thronged questions that were directed at assessing the preponderance via the usage of Never, Rare, Sometimes, Often and Always. Afterwards, the outcome that emanated from the analysis is hereby being presented in table 3, which reveals that HSSE_Vulnerability Threats (HVTs), Activities-Embedded Safety Awareness, Injury_Prone Assessment, Safety_Perception Mechanism and Environmental_Inspection Procedure (EIP) are captured as being chosen to be HSSE policies that are considered to be sometimes used by the FM service providers on commercial real estate in Lagos. It is noticeable that the two least frequently deployed of the HSSE policies on urban real estate by FM service providers are the facilities

system jamming alarm and HSSE Vulnerability Threats (HVTs) with a standard deviation of 0.502 and 0.429 respectively, while Building Defects Human Responsiveness ranks highest as the most frequently deployed HSSE policy with a standard deviation of 0.970. It is noteworthy that regardless of the infrequency in the pace of deployment of some policies, their being integral to the overall optimal performance of the total FM HSSE policies is undoubted, with overall implication bordering on increased cost-ineffectiveness in the HSSE related decisions of any business organisation.

Along the same vein is the fact that, HSSE policy on Injury Prone Assessment flaunts some impressive propensity for having the capacity to safeguard against potentiality of preponderant accident and other related safety issues within urban real estate with a standard deviation of 0.845. Above all, it has been reaffirmed through this statistical results, that the frequency of deployment of HSSE policies on urban real estate by FM service providers is damn poor and sub-optimal, especially by comparing with global minimal level stipulated.

Table 3: Frequency of Health, Safety, Security and Environmental Policies Deployed by Facilities Management Services Providers on Commercial Real Estate in Lagos.

HSSE Policies	Mean	Std. Deviation
HSSE Vulnerability Threats (HVTs)	3.37	0.429
Activities-Embedded Safety Awareness	3.26	0.536
Injury_Prone Assessment	3.11	0.845
Safety_Perception Mechanism	2.95	0.580
Environmental_Inspection Procedure (EIP)	2.68	0.614
Programmed Facilities Audit	2.53	0.815
Professional Security Provisioning	2.49	0.813
Liability Consequential Measures	2.37	0.725
Value_Based HSSE Culture	2.28	0.709
Facilities_System Jamming Alarm	2.22	0.502
Building Defects Human Responsiveness	2.18	0.970
HSSE-Human_Statutory Interface	2.14	0.723

I= never, 2= rare, 3= sometimes, 4=often, 5= always, MS= Mean Score, N=Number of respondents (46)

4.4 Facilities Management Services Providers' Observance of Health, Safety, Security and Environmental Policies on Commercial Real Estate in Lagos

Observance of laid down rules as codified in a framework goes a long way achievement of desired results for which the existence of rules and policies stands justified. It thus comes up as very important to ritually apply the stipulated measures as designed in the policy, so as to ensure the observance follows accurately all necessary requirements as stated by the regulatory authorities on the one hand, as well as targeted users or receivers of the essence of the policies, on the other hand. Hence, the analysis contained in table 4 contains the issues and the degree of the level of observance of HSSE policies by FM services providers on urban real estate, especially in such a way that health, safety, security and environmental concerns are of topmost and consistent priority by stakeholders, with a view to achieving a guaranteed and sustainable existential and productive workplace personnel. FM services providers' level of observance to 12 variables in respect of HSSE policies were barometered on a 5-point Likert scale ranging from "absence of observance" (which is given rating 1) to "absolute observance" (which is allocated with rating 5). The outcome of the field survey as captured in the results presented in Table 4 showed that FM service providers were of absolute observance of the HSSE policies such as: institutionalisation of HSSE procedural framework by commercial real estate users for FM service providers to key into, which is with impressive standard deviation value 0.798, pre-

existence configuration of HSSE operational architecture prior to business organisation's activities, which records a sufficient standard deviation value of 0.399, acculturation of HSSE policies into the doings of the commercial real estate users, which is greeted with adequate standard deviation of 0.531, as well as upskilling of commercial real estate users' understanding of HSSE policies and practice through bespoke trainings, with an excellent standard deviation output of 0.795, among others, all of which are clear reaffirmation of existing empirical submission on similar studies. The import of the present studies results are partly that, observance HSSE policies informs better romance with rules and regulations, as well providing room for possible overhauling if the need be, towards filling likely gap in terms demographics of users, intensity of usage, complexity of use requirement, outdated of deployment procedures, abuse of policies' provisions among others, the overall impact of which tells on the desired outcomes of HSSE policies on commercial real estate. However, it is noted that there exists the fact that there is a rejection in the truism that awareness of the relevance and the admittance of the contributions of HSSE policies adds values and eases the stringency of the safety tasks of FM service providers with a somewhat low standard deviation output of 0.451, as well departure from the need to constantly be reviewing HSSE policies for enduring robustness in taking care of the ever increasing safety needs of business organisations, with a standard deviation of 0.315.

Table 4: FM Service Providers’ Observance of Health, Safety, Security and Environmental Policies on Commercial Real Estate in Lagos

HSSE Policies	Mean	Std. Deviation
▪ HSSE procedural documentation is institutionalised by the business organisations who are the urban real estate users, for FM service providers to follow.	4.6	05.798
▪ HSSE operational architecture is configured at pre-existence of the full business activities by urban real estate users.	4.597	0.399
▪ HSSE sensitisation is well in-built into the business organisation’s culture and doings, to assist FM service provider’s assignment on urban real estate.	4.569	0.531
▪ HSSE training is <i>bespoken</i> for the upskilling of urban real estate users on riskiness of business organisation’s activities.	4.457	.795
▪ HSSE policy framework is made fully comprehensibly deployable by urban real estate users on their business activities for FM service providers to acknowledge.	4.257	0.567
▪ HSSE operational frameworks are being consistently reviewed for urban real estate benefits by the FM service providers to be abreast of global best practices.	4.248	0.568
▪ HSSE policy delineated <i>modus operandi</i> is tailored to every aspect of business organisation’s activities for FM service providers to be guided.	3.954	0.563
▪ HSSE policy and logistics are adequately provided by commercial real estate users for the sufficient deployment of FM service providers.	3.876	0.678
▪ HSSE policies are etched into the dynamics and ethos of business organisation for them to serve as directives to FM service providers to imbibe on FM tasks.	3.733	0.636
▪ HSSE rules observance is configured for higher attention in active business operation and to template efficient application by FM on maintenance tasks.	3.729	0.675
▪ HSSE recommendations and relevance to business organisation acts as driver for FM service providers resolve for quality solutions to safety issues.	2.914	0.451
▪ HSSE rules and regulations and operational deployments are reviewed to be attune with business requirements for FM service providers to observe.	2.683	0.315

1= No compliance, 2= Very low compliance, 3= Low compliance, 4= Moderate, 5= Full compliance, MS= Mean Score, N=Number of respondents (42)

4.5 Challenges Facing Local and Foreign FM Service Providers in Observance of Health, Safety, Security and Environmental Policies on Commercial Real Estate in Lagos

Observance of HSSE policies by the FM service providers, notwithstanding, this research concerned itself with quite a number of objectives, among which is an highlight of the challenges being faced by FM service providers in respect of their resolve in the delivery and implementation of HSSE policies on commercial real estate in Lagos. The outputs as displayed in table 5 depicts that on the part of the local FM service providers (LFMSP), poor perception on the relevance of HSSE policies by stakeholders (MS= 4.58), followed by sub-optimal attention to HSSE policies by stakeholders (4.55), while lack of conviction on self-sustenance capacity of HSSE framework followed next (MS=4.51) respectively as the first three most important challenges being faced. Meanwhile, on the side of the foreign FM service providers (FFMSP), rated poor perception on the relevance of HSSE policies by stakeholders, sub-optimal attention to HSSE policies by stakeholders and while lack of conviction on self-sustenance capacity of HSSE framework, as MS=3.75, MS=3.63 and MS=3.59 respectively.

Also, it is as well important to state that, much as all stakeholders strive in their respective efforts in ensuring that HSSE policies and practices are indeed sufficiently put to vivid actions and regular doings, with the central goal of guaranteeing the existential continuity of business organisations and as well to

deepen the chances of keeping risks and discomfort away from everyone, both the directly involved within and around the commercial real estate, as well as others who are indirectly connected therewith, the full realisation of which are all hampered by one form of debacle or the other. Therefore, it is noteworthy to say that as several as such challenges are, within the purview of this research, the following that are now being presented as displayed outputs that are the three least ranked challenges being faced by local facilities management service providers [LFMSP] in the observance of HSSE policies on commercial real estate, which are: poorly configured measuring tenet leading to wrongful gauging of organisational posterity preventing the full deployment of all what is required in observance of HSSE policies to the letter (MS= 4.17), followed by inconsistent and infrequent review exercises revolving around deployment of HSSE policies on commercial real estate (4.13), while poor and insufficient knowledge of the existence of HSSE policies by local FM service providers followed last (MS=4.06) respectively. Further to this, is the fact that the foreign FM service providers (FFMSP) are as challenged by the same debacle confronting their local counterparts, as evidences on those least ranked challenges mentioned previously are affecting the foreign FM services providers in the following orders, viz: ill-measurement of organisational posterity, inconsistency and non-constancy of HSSE reviews and poor and insufficient knowledge of HSSE existence, as MS=3.27, MS=3.18 and MS=3.13 respectively.

Table 5: Challenges Facing Local and Foreign FM Service Providers in the Observance of Health, Safety, Security and Environmental Policies on Commercial Real Estate in Lagos

	Local FM Firms		Foreign FM Firms	
	Mean	Std. Deviation	Mean	Std. Deviation
Poor perception on the relevance of HSSE policies by Stakeholders	4.58	1.285	3.75	1.298
Sub-optimal Attention to HSSE policies by Stakeholders	4.55	1.027	3.63	1.049
Lack of Conviction on self-sustenance capacity of HSSE framework	4.51	0.987	3.59	0.981
Ineffective and inefficient management	4.47	0.863	3.51	0.858
Inexistence of HSSE practice manual	4.41	0.631	3.44	0.414
Lack of respect for HSSE and policies	4.35	1.095	3.39	1.083
Incoherence of HSSE provisions	4.24	1.083	3.33	1.079
Ill-measurement of organisational posterity	4.17	1.039	3.27	1.035
Inconsistency and non-constancy of HSSE reviews	4.13	1.087	3.18	1.023
Poor and insufficient knowledge of HSSE existence	4.06	1.109	3.13	1.015

1= Strongly Disagree, 2= Disagree, 3= Indifferent, 4= Agree, 5= Strongly Agree, TS= Total Score, MS= Mean Score

5.0 CONCLUSIONS

It was at the epicentre of this research to assess the degree to which FM services providers observe the health, safety, security and environmental policies on commercial real estate in Lagos. The fundamental rationale revolving around the conduction of the research was to evolve series of actionable suggestions, which are timely, sufficient, enduring, robust, cost-effective and strategic in forestalling and frontally preventing the potential occurrence of risks, curbing the escalation of already fall-out of safety and health issues, as well as environmental discomforts of all forms, which are befalling commercial real estate in Lagos. The outputs as exhibited in the displayed outcomes from the various analyses depict that there is significant difference in the extent of understanding and awareness of HSSE policies, resulting to not-a-top-notch observance of stipulations by both local and

foreign FM services providers on commercial real estate in Lagos. Therefore, the following become important, so as to nip some of non-salutary situation as revealed by this research, in the bud. Such suggestions are as follows, viz:

1. There is every need to augment the present quantum of health, safety, security and environmental stipulations and provisions to be observed by FM service providers.
2. Overhauling of the HSSE architecture and increasing of the adequacy of safety related insurance coverage to capture all dimensions and needs of FM users.
3. Liaise with regulatory and other related bodies of government to conduct pre, during and post HSSE installation assessment and monitoring on FM service providers and commercial real estate users.

4. Scaling up the efforts of the relevant authorities of government in compelling the adherence to ISO codes as they border on safety, security and health in respect of real estate development materials and operations.
5. Increase in the volume and latitude of HSSE education and training as well as sensitisation to maintain desirable level of applications of safety and health related efforts by all stakeholders.
6. Constancy in the monitoring of HSSE activities of FM service providers by the clients who are commercial real estate users to ensure the desirable level of efficiency with a view to gauging the overall impact of the observance on the organisation's growth and development.

REFERENCES

- Abdul Rahim, A. H., Muhd, Z., & Majid, B. S. (2008). Causes of Accidents at Construction Sites. *Malaysian Journal of Civil Engineering*, 20(2), 242-259.
- Adeogun, B. K., & Okafor, C. C. (2013). Occupational Health, Safety and Environment (HSE) Trend in Nigeria. *International Journal of Environmental Science, Management and Engineering Research*, 2(1), 24 – 29.
- Akinbola, K. B., & Oluwole, T. G. (2019a). Management of Public Real Estate Facilities: The Mediation of Outsourcing on Standards, Efficiency and Longevity. *Ilaro Journal of Environmental Research and Development*, 3(1). Available at
- Akinbola, K.B., & Oluwole, T. G. (2019b). Benchmarking of Real Estate and Facilities Management Strategies for Higher Educational Institutions in Nigeria. *In Sustainable Environment and Economic Development Challenges: Options and Prospects*. Proceedings of the 7th National Environmental Research Conference, organised by The School of Environmental Studies and held at the International Conference Centre of The Federal Polytechnic, Ilaro between 22nd and 25th April, Ilaro, Nigeria.
- Al-Humaidi, H. & Tan, F. (2010). Construction Safety in Kuwait. *Journal of Performance of Constructed Facilities*, 24(1), 70-77.
- Ali, A. S., Kamaruzzaman, S. N., & Sing, G. C. (2010). A study on Causes of accident and prevention in Malaysian construction industry. *Journal of Design + Built*, 3, 95-113.
- Choudhry, M. R., & Masood, R. (2011). Assessment of Multi-level Safety climates of Working Groups to drive perceptual unification. Proceedings of CIB W099 international conference on “Prevention: Means to the End of Construction Injuries, Illnesses, and Fatalities”. Washington, D.C., USA.
- Fisk, W. J., Mirer, A. G., & Mendell, M. J. (2009). Quantitative relationship of sick building syndrome symptoms with ventilation rates. *Indoor Air*, 19(2), 159–165.
- Griffin, B. L., Hall, N., & Watson, N. (2005) Health at Work in Small and Medium Sized Enterprises: Issues of Engagement. *Health Education Journal*, 105(2), 126-141.

- Guidotti, T. L. (2011). *Global Occupational Health* (1st ed.). New York: Oxford University Press.
- Hamalainen, P., Takala, J., & Saarela, K. L. (2006). Global estimates of occupational accidents. *Health and Safety Science*, 44, 137-156.
- Health and Safety in Construction (2006). HSE books ISBN 978 0 7176 6182 2. Available on line from www.hse.gov.uk/pubns/books/hsg150.ht
- Hobday, R. A., & Dancer, S. J. (2013). Roles of sunlight and natural ventilation for controlling infection: historical and current perspectives. *Journal of Hospital Infection*, 84(4), 271–282.
- Idoro, G. I. (2011). Comparing Occupational Health and Safety (OHS) Management Efforts and Performance of Nigerian Construction Contractors. *Journal for Construction in Developing Countries*, 16(2), 151–173.
- Li, Y., Leung, G. M., Tang, J. W., Yang, X., Chao, C. Y. H., Lin, J. Z., et al. (2007). Role of ventilation in airborne transmission of infectious agents in the built environment—A multidisciplinary systematic review. *Indoor Air*, 17(1), 2–18.
- Mendell, M. J., Eliseeva, E. A., Davies, M. M., Spears, M., Lobscheid, A., Fisk, W. J., et al. (2013). Association of classroom ventilation with reduced illness absence: A prospective study in California elementary schools. *Indoor Air*, 23(6), 515–528.
- Mesa-Frias, M., Chalabi, Z., & Foss, A. M. (2014). Quantifying uncertainty in health impact assessment: A case-study example on indoor housing ventilation. *Environment International*, 62, 95–103.
- Muise, B., Seo, D. C., Blair, E. E., & Applegate, T. (2010). Mold spore penetration through wall service outlets: A pilot study. *Environmental Monitoring and Assessment*, 163(1), 95–104.
- National Bureau of Statistics (2018). Overview of GDP in Q4 2017. *Nigerian Gross Domestic Product Report*, National Bureau of Statistics, Abuja, Nigeria.
- Norhidayah, A., Chia-Kuang, L., Azhar, M. K., & Nurulwahida, S. (2013). Indoor air quality and sick building syndrome in three selected buildings. In *Malaysian Technical Universities Conference on Engineering & Technology 2012, MUCET 2012 Part 3—Civil and Chemical Engineering; Procedia Engineering*, 53, 93–98.
- Phares, C. R., Russell, E., Thigpen, M. C., Service, W., Crist, M. B., & Salyers, M. (2007). Legionnaires' disease among residents of a long-term care facility: The sentinel event in a community outbreak. *American Journal of Infection Control*, 35(5), 319–323.
- Sivasubramani, S. K., Niemeier, R. T., Reponen, T., & Grinshpun, S. A. (2004b). Fungal spore source strength tester: laboratory evaluation of a new concept. *Science of the Total Environment*, 329(1), 75–86.
- Sterflinger, K., Ettenauer, J., & Pinar, G. (2013). Bio-susceptibility of materials and thermal insulation systems used for historical buildings. European Geosciences Union General Assembly 2013, EGU, Division Energy, Resources & the Environment. *Energy Procedia*, 40, 499–506.
- Sundell, J., Levin, H., Nazaroff, W. W., Cain, W. S., Fisk, W. J., Grimsrud, D. T., et al. (2011). Ventilation rates and health: multidisciplinary review of the scientific literature. *Indoor Air*, 21(3), 191–204.

- Takahashi, Y., Takano, K., Suzuki, M., Nagai, S., Yokosuka, M., Takeshita, T., et al. (2008). Two routes for pollen entering indoors: Ventilation and clothes. *Journal of Investigational Allergology and Clinical Immunology*, 18, 382–388.
- Tarlo, S. M., Balmes, J., Balkissoon, R., Beach, J., Beckett, W., Bernstein, D., et al. (2008). Diagnosis and management of work-related asthma: American College of Chest Physicians Consensus Statement. *CHEST Journal*, 134(3_suppl), 1S–41S.
- Tuomainen, A., Seuri, M., & Sieppi, A. (2004). Indoor air quality and health problems associated with damp floor coverings. *International Archives of Occupational and Environmental Health*, 77(3), 222–226.
- Vacher, S., Hernandez, C., Bärtschi, C., & Poussereau, N. (2010). Impact of paint and wall-paper on mould growth on plasterboards and aluminum. *Building and Environment*, 45(4), 916–921.
- World Bank Group (2016). The World Bank in Nigeria. The World Bank Working for a World Free of Poverty.
- Wu, M. J., Feng, Y. S., Sung, W. P., & Surampalli, R. Y. (2011). Quantification and analysis of airborne bacterial characteristics in a nursing care institution. *Journal of the Air & Waste Management Association*, 61(7), 732–739.
- Yau, Y. H., & Ng, W. K. (2011). A comparison study on energy savings and fungus growth control using heat recovery devices in a modern tropical operating theatre. *Energy Conversion and Management*, 52(4), 1850–1860.
- Zalejska-Jonsson, A., & Wilhelmsson, M. (2013). Impact of perceived indoor environment quality on overall satisfaction in Swedish dwellings. *Building and Environment*, 63, 134–144.
- Zock, J. P. (2005). World at work: cleaners. *Occupational and Environmental Medicine*, 62(8), 581–584.
- Zohar, D. (2010). Thirty years of safety climate research: Reflections and future directions. *Journal of Accident Analysis and Prevention*, 42(5), 1517–1522.
- Zweers, T., Preller, L., Brunekreef, B., & Boleij, J. S. M. (2012). Health and indoor climate complaints of 7043 office workers in 61 buildings in The Netherlands. *Indoor Air*, 2(3), 127–136.