

**ASSESSING THE IMPACT OF THE STANDARDS ORGANISATION OF NIGERIA ON  
THE PRODUCTION AND CONSUMPTION OF BUILDING MATERIALS IN NIGERIA**

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**Abstract**

Incessant building collapse in Nigeria related with similar historical antecedent seems predestined to lack of quality building materials available to builders or inability to purchase the quality materials due to high cost or selfish intention to make more gains. The study examines the rationale for framework of SON, determining the effect of the agency on the supply and consumption of building materials (roofing sheet) by Nigerian building contractors, examining the challenges confronting SON in regulating the production, supply and consumption of substandard building materials (roofing sheet). The primary data were sourced through questionnaire administered on building professionals, SON officials, building engineers, building materials sellers. Focus Group Discussion (FGDs) were conducted among vulnerable urban and rural drillers (house owners). Secondary data were gathered through relevant texts, seminar paper, workshop papers, articles etc. Data were analyzed using Descriptive method and content discussions. The study observed that most building contractor are using substandard materials not because of cost but with selfish interest of realizing more gains. While the study concluded that SON officials should engage in thorough inspection of building materials at market place and at the instance of sight usage.

**Keywords:** Builders, Engineers, Quantity, Surveyor, SON, Consumer Right.

**Introduction**

Nigerian consumers of this knowledge imbalance had over the years suffered so much in the hand of producers and suppliers of goods and services with whom were engaged in trade relationships in terms of supplying sub-standard goods and services, fake and expired products. Fake product in the opinion of Nkamnebe, Idkomandkalu (2009) are those goods and services that fail to meet up to the promised specification conformance and performance quality. Thus, posited that the of standard organization of Nigeria (SON) to consumer became an important area of interest because of the knowledge imbalance complied with the sophistication of consumer products which made it difficult for consumers to ascertain and distinguish the genuine products from fake and substandard ones. The level of consumer rights violation and exploitation in Nigeria is becoming worrisome to every Nigerian. Although a number of policy and regulatory agencies exist, protecting the consumer against such exploitations has been a big challenge to the relevant agencies. In a number of occasion, these agencies have used threats of dealing with to affect businesses, but the threats have turned empty and have fallen short of meeting or achieving the anticipated objectives (Okojie and Ordon 2003).

However, construction industry plays an important role dynamic role in the process of sustainable and economic growth of any nation and more than 50% of the gross fixed capital budget in Nigeria normally takes the form of construction input (WASE, 2004). Building industry (a sub-sector of the construction industry) is the most complex of all the industries in Nigeria economy today (Akindeyemi, 2002). The basis of the complexity is on the fact that all other industries (whether small scale or large scale) and sectors of the socio-economy depend on it for the environment in which they operate.

Murphy's law cited in Odunlami (2002) that "if everything seems to be going on well, one obviously does not know what is going on". The building industry is not an exception of this law, and this is based on various impalatable occurrences in the recent years. Building collapse has been one of the salient issues and these incidences has continue to occur unabated in most major cities of the country.

Building is "an enclosure for space designed for specific use, meant to control local climate, distribute services and evaluate waste" (Fademiro, 2002). Buildings can be described as structural entities capable of securing self by transmitting weights to the ground. Aside, buildings are defined "as structures for human activities, which are safe for occupants" (Odunlami, 2002). Put differently, Oxford Advanced Learner Dictionary (2002) described the word collapse as "an act of falling down or falling suddenly, often after breaking apart". Collapse as a whole occurs when part or whole body of a structure fails and suddenly gives way, the structure as a result of this failure, would not meet the purpose for which it was meant for. Building collapse is an extreme case of building failure. It means the super structure crashes down totally or partially (Arihesere, 2002). However, building failure occurs when there is a defect in one or more elements of the building to perform it original function effectively, which may finally lead to building collapse.

Be as it may, premised on the analysis of the scholars above, any component of the building that failed to effectively serve it purpose, undoubtedly render the whole building useless and in securable. Holistically, building starts from foundation, structure (these include blocks, cement and sand) and roofing (which involve planks and roofing sheets). Many at times a building may have good foundation, structure but if the roofing is faulty, the entire building is rendered useless. This may be as a result of low quality planks or substandard roofing sheets.

The concern of this study is the influx of low quality roofing sheets that permeate our building market nowadays, and this usually render house owners, dwellers uncomfortable and eventually lead to collapse of building in our society. Odunlami (2002) grouped building material failure into the following categories of building elements and workgroups:

- i) Those that should last a lifespan building (foundation, frame, wall and upper floor falls into this category)
- ii) Those whose lifespan can be prolonged by periodically replacing some part at regular and specific time (such as roofing covering)

- iii) Those that are subjected to wear by human or mechanical agencies (such as floor finishes)
- iv) Those that as a result of technological improvement become obsolete (such as finishing and fittings)

V) Those that are affected by exposure to weather after a period of time, they may fail or need to be changed because of appearance (such as roof covering and wall cladding). Basically, the experience, quality of building and competency of different workmen in Nigeria constrained industry vary from one place to another and this is a function of different level of training received by them. The workmen in Nigeria construction industry can be grouped into skilled (e.g. general Forman), semi- skilled and unskilled. They are employed to carry out activities that may range from laying of brick or concrete to general laboring of handling or moving of materials on site.

The site of building collapse scattered across the length and breadth of Nigeria is quite alarming that is unimaginable what effect it will have on the building industry and Nigeria economy as a whole. One could imagine what edifices these buildings would have been if they were constructed accordingly. Famoroti, (2005) remarked that it has been reported severally that Nigeria, especially Lagos state has become the world's "Junk- yard" of collapse buildings worth billions of naira. It is quite unfortunate that a country blessed with so great potentials in its construction can experience such magnitude of building collapse.

Sequel to above, the successive Federal Governments in Nigeria set up agencies such as the National Agency for Food and Drug Administration and Control (NAFDAC), the Standard Organization of Nigeria (SON), the National Drug Law Enforcement Agency (NDLEA) and most recently the Consumer Protection Council of Nigeria (CPC) and charged them with the responsibility to protect and safeguard the rights of the consumers against the unwholesome practices of producers and suppliers of goods and services in the country. Despite the plethora of consumer protection measures undertaken to address the influx of sub-standard products in Nigeria markets, government efforts have not produced positive result.

Basically, materials in construction projects is an important function that significantly contributes to the success of a project. Poor management of materials on site during construction process will influence the total project cost, time and quality (Whyte, Isaac and Lilly 2008), cited in Andualem and Akilu, 2019). The reduction in construction materials wastage can significantly help in increasing total profit and gaining economic stability for country and construction firms. Put differently, the building materials sector is split into three production groups: The modern or conventional building materials which are materials based on modern conventional production methods like concrete, steel and glass. The traditional materials, which are these materials that have been in local production from ancient times using small – scale rudimentary technologies e.g. laterite, gravel, thatch, straw, stabilized mud, Azaraand palm, palm, lastly , the innovation building materials, which are materials developed through research efforts aimed at providing

alternative to imported based materials e.g.Fiber– based concrete, Ferro-cement products (Eze Okwonkwo, 2010).

The functions of the standard organization of Nigeria as entrenched in enabling decree No. 56 of 1971 and its subsequent amendments include:

- To organize and do everything necessary to ensure compliance with standards designated and approved by council;
- To undertake necessary investigation of the quality of facilities and producers manufactured in Nigeria and imported, so as to establish a Quality assurance System including certification of factories, products and laboratories;
- To ensure reference and standards for calibration and verification of measures and measuring instruments;
- To compile an inventory of products requiring standardization;
- To foster interest in the recommendation and maintenance of acceptable standards by industry and the general specification;
- To develop methods for testing of materials, supplies and equipment, including items purchased for use of departments of the Government of the Federation or a state and private establishments;
- To undertake preparation and distribution of standard samples;
- To prescribe standards for mandatory status;
- To establish and maintain such number of laboratories for its functions under the law;
- To compile and publish general scientific or other data;
- Resulting from the performance of its functions under the law or
- From other sources when such data are importance to scientific or manufacturing interest or to the general public and are not available elsewhere;
- To advise any department of the Government of the Federation or state on specific problems relating to standards specifications;
- To sponsor such national and international conferences as it may consider appropriates.

Historically, Nigeria's aggregate imports have grown substantially since the country's political independence in 1960. Various surveys corroborate this. From a value of 23.6% in 1960 to 46.1% in 1970, it surged to about 53.80% and 56.8% in 1981 and 1982 respectively, then to about 52.7% in 1992 and 60% in 2010 ( Sa'ada and Hassan , 2008).

Be as it may, the standards organization of Nigeria (SON) was established by Decree No 56 of 1971 with the sole responsibility for establishing and elaborating standards for products and processes. In addition, it is to ensure compliance with the Federal Government policies on standards and quality control of both locally manufactured and imported products throughout the country. The decree has introduced three amendments since inception. In 1976, the decree under its first amendment when the Honourable Minister of industries was conferred with the power to prescribe mandatory standards (Decree No 20 of 1976). A second amendment was effected with decree No 32 of 1984, which changed the name of the organization from Nigerian Standards

Organisation (SON) to the Standard Organisation of Nigeria (SON) to avoid confusing the agency with the Security Agency of Federal Government then known as the Nigerian Security Organisation. Decree No 18 of 1990, the third amendment, excused the organization from being an integral part of the Ministry of industries. It granted the organization the statue of a body corporate with perpetual secession and a common seal that sue or be sued in corporate name. The last amendment of 1990 has had for reaching impact on the corporate image of SON as it enhanced the status and powers of the Organisation to carry out its statutory functions in the industrial sector of the national economy.

### **Theoretical Framework**

Quality Assurance (QA) theory is an important framework within manufacturing, particularly in industries that involves the production and consumption of goods, including materials. This theory is deeply rooted in principles that prioritize the development and maintenance of high standards in product design, production process and final outputs. It emphasizes customer satisfaction, continues improvement and adherence to establish norms and regulation (Garun, 1987). In another dimension, Juran and Goffrey, (1992) viewed (QAT) differently and built it on the foundation of a total Quality Management (TQM), which posit that every stage of production should be monitored and controlled to maintain quality from initial design phase through to final delivery. Deming (1986) analyses the goals of QA as to enhance the reliability and durability of products by reducing variability in production, minimizing defects and ensuring conformal to standards.

The synergy between Quality Assurance and building materials is revealed in the comment of Ayeni and Ayodeji, (2015) that the implementation of QA mechanism is therefore essential in regulating the production, distribution and consumption of the material to ensure safety and durability. This assertion are highly relevant to the regulations of building materials, where the quality directly affect the performance of structures, leading to significant financial losses, safety hazards and sometimes fatalities, especially where the quality of inputs: such as cement, steel and roof sheets are directly affected the safety, durability and sustainability of buildings cannot be guaranteed. The Standards Organisation of Nigeria has the mandate to promote standards in all sectors of the Nigerian economy including building materials sector. This implies that SON is saddled with the responsibility of ensuring that building materials meet national and international standards, preventing the circulation of substandard products in the market. In this view, the role of SON aligns with the key principles QAT by:

- Setting and enforcing standards: SON develop and enforce mandatory industrial standards, ensuring the materials produced and consumed in Nigeria conform to quality benchmarks.
- Inspection and certification: SON routinely inspects manufacturing process and certifies products that meet set standards. The practice is in line with the QAT principle of preventing defects through process control (Williams, 1992).

- Product and market surveillance: SON carries out testing of building materials, including cement, steel, roofing sheets and other critical inputs to verify their conformity to standards.

The impact of SON's quality assurance framework is exhibited in area of aiming the influx of counterfeit and substandard. Building materials (including roofing sheets) which has historically been a major problem in Nigeria. This achievement is reliable with the cooperation of custom and other government agencies that help to reducing smuggling of inferior materials and this directly improves the quality of construction outputs.

### **Consumer Right**

Consumer is described in the context as any person who purchases goods and services and uses them at the end of a chain of production. The two key issues involved is that the consumer is the buyer of the goods or services, as well as a member of the production chain. In another words, without the consumer, there will be no basis for production. These characteristics stress the importance of consumers in both economics and marketing market. That is why the consumer is seen as the pivotal point of not only marketing, but of all business activates (Kamarudeen et al 2012) and whose interest must be protected.

The issue of consumer protection is very critical that some consumer right were propounded (Kofter and Keller, 2006). The consumer rights were based on the Bill of Rights as presented to the USA congress in 1962 by President John F. Kenedy (Solomon, 2011). They include:

- I. The right to know or the right to information
- II. The right to be heard
- III. The right to safety
- IV. The right to choose
- V. The right to satisfaction of basic needs
- VI. The right to redress
- VII. The right to consumer education
- VIII. The right to representation and right to healthy environment.

These consumer rights give rise to "consumerism" which contributed a lot to stabilize the market place as most producers and service providers complied with the best practices of doing business especially in advanced countries. Consumerism succeeded in cobing its activities to create strong consumer demand for ideas and activities that would help consumers to set satisfaction in the market place despite the increased complexity of products, broadening of self- service channels and depersonalized shopping, the growth of consumer services (whose quality is difficult for consumer to judge), and increases in consumer's discretionary buying power. However, several opinion poll suggested that consumers strongly appreciates the benefit of consumerism especially the issue of positive attitudes towards various reform measures like SON would benefit and protect consumers generally (Bloom and Greyser, 1981). Consumerism is an organized-effort by individuals, groups and governments to help protect consumers from policies

and practices that infringe consumer's right to fair business practices. It could also be defined as doctrine that ever-increasing consumption of goods and services from the basis of a sound economy (<http://www.businessdictionary.com/definition.html>). Builders could be seen as an individual who possesses the management skills required to plan, organize, control, coordinate and direct the execution of new building projects and maintaining existing buildings, including the economic utilization of materials, equipment and human resources. He is therefore employed by the contractor to plan, monitor and supervise the running of a number of different contracts taking into consideration quality and time. Engineer is seen as well learned person in the field of engineering technology especially civil or building engineering. It also include the structural, services and environmental consultants. They are required to assist the architect in the design of the project within the scope of their specialization. They produce calculations or other relevant data that may help the architect in his design, the quantity surveyor is his cost control and the local authority in its assessment of the suitability of the project with regard to statutory regulation. The quantity surveyor is known to be the project accountant and works in hand in hand with site manager. He assists the client in controlling the cost of the project from the inception to the completion stage. He is also expected to be aware of the properties and cost of materials and components to be used in the building, may advise the architect in the choice of alternative components or materials on the basis of availability, durability and / or cost. He has the responsibility of providing a balance cost plan and the production of periodic cost checks so as to maintain the balance of the plan (Seheeley, 1989).

Notably, it is no gainsay that the activities and involvements of the aforementioned professionals are necessary in the process of erecting a building that can guarantee safety and durability the problem is that most house owners did not employ the services of these bodies because of fear of charges-cost most especially the low-income earners that build their houses on contribution or loan from cooperative societies of which they have to pay back before continuing with the project which may last them for ten years. Many atimes, the year they bought land, sand and cement may be far to the time they purchase roofing sheet. Many of them move to uncompleted building because of the troubles of landlords.

### **Building Collapse**

Building is regarded as collapse if part or whole body of the structure has failed and as a result of such development, the entire building cannot serve the purpose for which it was intended (Chinwokwo, 2000). Further, it was established that when a building whether under collapse, through a common phenomenon in the world is more rampant and devastating in the developing countries (Sodare and Usman, 2006). Many building collapse been recorded in Nigeria have been observed to cut across all building categories (private, cooperative and public). Dare, (2002). Submits that in the current unfavourable economic climate, the Federal Government is finding it increasingly difficult to allot substantial financial resources for fixed capital formation, particularly for construction of buildings to add to the existing one and replace old structure, let alone of replacing collapsed buildings. In the latter, the consequent loss of lives and investment

associated with building collapse in the face of the current unfavourable climate leaves much to be desired. Chinwokwu, (1999) cited in Folagbade (2002) shows that of the twenty three reported cases of building collapse between 1980 and 1999 in Lagos state, 76% and 12% were respectively private, corporate and government or public buildings. This implies that private buildings are more prone to building collapse than all other forms of buildings. Building collapse occurs, with or without warning, from designs and or construction faults and this incidence has become a familiar occurrence, even to the layman on the street of Nigeria major cities. It is usually a disastrous occurrence frowned at and viewed by responsible government worldwide with a great concern. Bolaji, (2002) attributes building collapse as a result of ignorance, negligence and greed. However, ignorance has to do with when incompetent personnel are in charge of design, construction or inspection. While negligence occurs when specification writing is jettisoned and construction is based on the past project without due crosschecking these areas that need improvement, addition or omission. Greed is all about diversion of building materials, cement in particular, meant for production on the clients site to own site by contractor or builder and use sub-standard materials just to realize or achieve high profit.

Builder is a professional who possess the management skills required to plan, organize, control, coordinate and direct the execution of new building project and maintain existing buildings including the economic utilization of materials, equipment's and human resources. He is therefore employed by the contractor to plan, monitor and supervise the running of a number of different contracts taking into consideration quality and time.

## **Methodology**

This section deals with discussion of the study in terms of how the strategies employed by the study help in accomplishing the stated objectives of the study. It also discussed the theoretical framework in terms of gaps observed while reviewing the literature. The matter of interest that is expected to generate new and original thought will also be discussed here.

Discussion of strategies (methods) for achieving objectives.

Strategies adopted in order to accomplish the stated objectives of the study includes the use of primary data from self-administered questionnaires against the backdrop of any similar or related studies and the sub objectives of which the study sought to : examines the rationale for framework of SON, determines the effect of the agency on the supply and consumption of building materials especially roofing sheets and examines the challenges confronting the agency (SON) in regulating the production and supply of sub-standard building materials.

Since the study aims to explain the role of SON on protecting the consumer, the survey method was considered most appropriate methodology to adopt for the study. Furthermore, interviews should be granted to SON officials, building engineers and building material suppliers (sellers). While focus group discussion were conducted among the illiterate consumers (in the rural areas).

Data on the rationale of standard organization of Nigeria (SON) for the past five years should be sourced in order to determine their performance. A sample size of 300 aforementioned groups were used for the study and out of which 286 copies of questionnaires administered were properly filled and returned. Finally, the chi-square statistical tool was used to process primary data generated.

**Analysis**

Table 1: examine the rationale for SON’s Framework and its activities in terms of regulating the supply and consumption of substandard building materials.

Chi-Square Test

	Examine the rationale for SON’s framework and its activities in terms of regulating substandard materials
Chi - square	93.07 <sup>a</sup>
Df	3
Asymp sig.	0.11

9.0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 71.5

The above statistical tool (chi–square) was adopted to critically examines whether the activities of SON in terms of regulating production, supply and consumption of substandard building materials has impact. From the analysis carried out, it is revealed that calculated chi-square value of 93.097 and with P-value of 0.011 shows that the statistical examination is significant. Therefore, the study to a great extent established that the presence and activities of SON are felt and noticed in Nigeria societies. This is premised on the fact that SON has been doing a lot of things to eradicate the supply and production of substandard building materials Nigeria. However, SON do this in collaboration with custom officials.

Table 2: Examine challenges confronting SON in regulating the supply, production and consumption of substandard building materials.

Chi-Square Test

	Examine the challenges confronting SON in regulating the supply, production and consumption of substandard building materials in Nigeria.
Chi-square	142.763 <sup>a</sup>
Df	4
Asymp. Sig.	0.32

To be able to achieve the stated objective 11, the study equally adopted chi-square statistical tool in examination of the challenge confronting standard organization of Nigeria. The chi-square 142.763 and with p – value of 0.000 indicates that SON has not done well in reducing substandard building materials in Nigeria marketing. Owing to possible challenge confronting the agency such as lack of modern equipment for their operation, inadequate laboratory, inadequate personnel, poor funding, political interference, lack of awareness on the part of consumer about their rights and how they can lodge their complaints etc. Nkamnebe, Idoko and Kalu, (2009) remarked that consumers are about their predicaments, leading to lack of awareness

of the laws meant to protect them and consequently resulting in the absence of consumerism and absence of litigation against producer and sellers even in the case of obvious infringement of their rights.

MrAjayi whose house roofing sheets were blown off by wind complained of the quality of roofing materials available in the market. Further, that they are substandard. He said he could imagine that out of seven bundles of roofing sheets used for building, there is no single sheet that he can manage for reroofing of his building. This is the comment of victim of rainstorm at (FDGs) center at OkeAko-Ekiti. Mr Olorunlogbon of FDGs center at Ilaramokin, Ondo state claimed that most buyers have no knowledge of whether there is quality or substandard roofing materials, further that they go to supplier to buy when the time arises. In the same center, Mr. Akanji asked question on who is to be blamed in the scenario of fake building materials. That is it the supplier, producer, government or the buyers who are always victims of circumstances. He concluded that the poor buyers will always patronize the cheapest materials available because of lack of money.

Chief Chinedu a supplier in FDGs center in Ado Ekiti State capital. He claimed that they purchased both produced locally in Nigeria and those ones imported from overseas countries particularly from China, further, that before such goods get to them, there must be series of checks either by SON or custom officials respectively of which they have to certify those materials before getting into the market. Another participant, Mr Okeke shifted the cause of faulty roofing on the kind of planks available for builders nowadays. He claimed that trees are no more matured before plank suppliers cut them and process for use. And all these are expected to be checked by forest guards. Although Nigerians always have their ways when it comes to business issues through bribes on gratifications. Some will not even get to saw mail before cut into pieces popularly called 'payababa'.

### **Conclusion and Recommendations**

The study concluded that quality of Nigerian structural building material is not satisfactory neither is the quality of workmanship of Nigerian workmen. The study further revealed that the use of inappropriate materials supplied to site, inadequate materials, insufficient supervision and lack of proper management of workforce have been the major factors responsible for poor quality of buildings in Nigeria. However, it was also revealed that various bodies bestowed with responsibility for standardization of building materials in Nigeria are not effective enough. Based on the findings, the following are recommended:

1. The standard organization of Nigeria (SON) should give a mere positive response to their responsibility in sanitizing building materials that are offered for sale in Nigerian market.
2. The Nigerian Institute of Building (NIOB) and Nigerian Institute of Structural Engineer (NISE) members should be involved in the building materials sanitization process.
3. Building professionals should ensure prepared efficient supervision of workmen as well as efficient checking of materials before incorporation into building works.

4. SON should employ more personnel to enhance their performance and even afford them the opportunity of reaching nook and cranny of Nigeria
5. The federal government of Nigeria is enjoined to see to proper funding of the organization for better performance.

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