RESEARCH ARTICLE   **OPEN ACCESS**

BUILDING SURVEYING PRACTICE IN THE NIGERIAN CONSTRUCTION INDUSTRY: PROSPECTS, BARRIERS AND ENHANCED MEASURES

Dele Roger Simeon*[1], Gideon O. Adeyanju[2], Charles-Obi Owen[3] and Rabiu A. Aminu[4]

[1, 2, 3, 4] Department of Building, University of Lagos, Lagos, Nigeria.

[1] http://orcid.org/0000-0002-3927-7547 , [2] http://orcid.org/0009-0006-2996-8703 , [3] http://orcid.org/0009-0007-9332-8759 ,
[4] http://orcid.org/0009-0005-2527-2111

Email: *simeondele2@gmail.com, goadeyanju@gmail.com, charlesobiowen@gmail.com, rabiuaminu67@gmail.com

ARTICLE INFO

ABSTRACT

The building surveying profession is an emerging field of expertise that professionals in the Nigerian building industry have not yet embraced. This study, therefore, aims to investigate the barriers constraining the uptake of the profession and suggest measures for its survival amidst other professions in the Nigerian built environment. A survey research strategy was espoused to elicit empirical data from 108 construction experts in Nigeria who were randomly selected. The data collected were analyzed using Statistical Packages for Social Sciences (SPSS version 23.0) and Microsoft Excel. The study revealed that barriers constraining the practice of building surveying in Nigeria were a lack of public awareness, limited education and training opportunities, and resistance from existing professions. While developing better relations, reviewing the academic curriculum, and raising awareness were key strategies for its uptake. The study concludes that the building surveying profession is deemed important by the majority of built professionals in Nigeria, and possesses significant prospects, but constrained by the lack of public awareness and resistance from existing professions in the built environment. It is therefore recommended that building surveyors should strengthen their relationships with existing professional bodies. This may be accomplished through establishing periodic forums for idea-sharing and collaboration.

I. INTRODUCTION

The building industry plays a pivotal role in the economic development of any nation [1], and Nigeria is no exception. As the country experiences rapid urbanization and infrastructural development, the demand for competent building surveyors becomes increasingly crucial. [2] note that the building surveyors expertise is essential to ensure the safety, quality, and sustainability of buildings amidst bustling construction activities. Thus, within this dynamic context, the building surveying (BS) profession emerges as an indispensable aspect of the construction process, providing specialized knowledge and services in various areas such as building inspection, assessment, maintenance, and project management. The emergence of the BS profession reached a pivotal point in the 1970s, particularly within the United Kingdom, where it became firmly established [3]. Over the years, building surveyors in the UK have played a crucial role in the planning,

design, and construction of structures, as well as in the ongoing maintenance and management of buildings. [4] posit that building surveyors expertise extends to various domains, including building control works and activities pertaining to the built environment. However, beyond the UK, Hong Kong, and Australia, the awareness of BS practice remains relatively limited, necessitating further efforts to promote and expand the profession's reach [5, 3]. While the BS profession has already established itself as a well-regarded profession in these developed countries, Nigeria still faces challenges in fully exploring and utilizing its potential. [6] stressed that the utilization of building surveys by individual building owners, professionals in the building industry, and the government in Nigeria is alarmingly low, and in most instances, not employed at all. According to [7], this lack of implementation has resulted in significant challenges confronting the Nigerian construction industry. Moreover, [8] opined that regardless of the promising

growth potential in the construction sector, the BS profession currently faces a significant shortage of skilled professionals. This has created a gap in the uptake of the BS profession in the building construction industry. [9] corroborate that the BS profession in Nigeria is not practiced as it should. These constraints limit the profession's capacity to deliver its full range of benefits to the sector and the wider society. As the construction industry continues to evolve in Nigeria, the expertise of building surveyors stand poised to play a vital role in shaping a sustainable and prosperous future for the nation's-built environment. In order to reduce the aforementioned barriers, this study aims to bridge the knowledge gap by identifying barriers constraining BS practice and propose key measures for BS profession uptake in the Nigerian construction industry. The objectives of the study are to; determine the prospects of the BS profession in the Nigerian building construction industry, identify the barriers constraining the practice of BS, and propose measures that can enhance BS practice in Nigeria. The study hypothesizes that the barriers constraining the practice of the BS profession do not significantly differ among organization practice. The significance of this study is in its ability to pinpoint the barriers constraining BS practice in the industry, hence provide enhanced measures for its implementation and survival in the Nigerian construction industry.

II. THEORETICAL REVIEW

II.1 GLOBAL PERSPECTIVES ON THE BS PROFESSION

The global adoption of the BS profession into the construction and built environment industries may be achieved through improving building surveyor competences in accordance with growing roles and service expectations [4]. Developed countries with advanced construction industries and well-established regulatory frameworks have witnessed widespread adoption of BS practices. Nations such as the United Kingdom, Australia, Hong Kong, and New Zealand have integrated building surveyors as indispensable professionals in their construction processes [2]. In these regions, building surveyors play a significant role in ensuring compliance with building codes, regulations, and sustainability standards. Their active involvement in various construction stages, from pre-construction inspections to safety assessments and project management, has contributed to the successful completion of complex projects with high-quality standards. Conversely, many developing countries still lag behind in recognizing BS as a distinct profession and face challenges in fully embracing its practices [6]. Limited resources, inadequate infrastructure, and less stringent regulatory enforcement can hinder the widespread implementation of BS in these regions. Cultural attitudes and perceptions of the BS profession also influence its adoption across different countries. In some nations, like Malaysia, the role of building surveyors may be less established, leading to difficulties in gaining recognition and trust among stakeholders [10].

II.2 BARRIERS CONSTRAINING THE BS PRACTICE

Over the years, building disasters and advancements in materials and technologies have necessitated the introduction and revision of new standards, building regulations, and legislation, significantly impacting the building surveying profession [8]. While countries like the UK and Malaysia have well-established professional bodies governing the BS profession, such as RICS and RISM, and have recognized building surveyors as integral to the construction industry, challenges persist in widespread adoption [4]. One of the primary barriers to BS practice is the lack of awareness and recognition among stakeholders in the construction industry [2]. Building surveyors often face difficulties in communicating the value of their expertise and the benefits they bring to construction projects. Consequently, clients, contractors, and regulatory authorities may not fully appreciate the contributions building surveyors can make throughout a project's lifecycle. Insufficient regulatory support is also a concern, as some regions may not fully recognize or emphasize the role of building surveyors, leading to fragmented approaches to construction oversight [11] Another challenge is the limited integration of building surveyors into various stages of construction processes. Oftentimes, building surveyors are brought in only for specific tasks, such as building inspections or defect assessments, rather than being involved throughout the entire project lifecycle. Therefore, building surveyors must actively position themselves as proactive partners, advocating for early involvement in projects to ensure better coordination, risk management, and adherence to quality standards [10]. The acceptance of BS profession by the existing construction professions poses another significant barrier to the establishment of the BS profession. It is argured that other professionals in the built environment, such as builders, engineers and architects, possess comparable knowledge and ability and thus, BS may not be necessary. This ongoing confrontation against the establishment of the BS profession hinders its widespread adoption [11]. Furthermore, public recognition, poor understanding of surveyor skills, and limited job opportunities act as barriers to the adoption of building surveying [2]. In cost-sensitive or competitive construction markets, cost considerations may discourage clients or stakeholders from engaging building surveyors. The perception that BS services add an extra financial burden may lead to their exclusion from projects [12].

II.3 MEASURES FOR THE UPTAKE OF BS PROFESSION

One of the key measures for BS practice is actively promoting awareness and education about the profession's value and contributions. [4] advocate for universities to take a strategic educational approach by rethinking academic course material to complement the capabilities required and create a paradigm shift in BS practise and education. [2] adds that collaborating with architects, engineers, contractors, and other construction professionals can lead to more comprehensive project involvement and enhance the value of BS services. Additionally, [13] note that active participation in industry associations and forums provides opportunities for knowledge exchange, professional development, and staying updated with industry trends. Embracing technology and innovation is a crucial survival strategy for building surveyors to remain competitive and efficient in their practices. Adopting Building Information Modelling, laser scanning, drones, and other digital tools can streamline BS processes, improve data accuracy, and enhance the quality of deliverables [14]. Technology-driven solutions not only differentiate building surveyors in the market but also enable them to offer valuable insights to clients, facilitating better decision-making throughout the construction lifecycle. Engaging the government, and private organisations to embark on a strategic enhancement of BS so that the profession achieves local and global recognition [4]. Establishing strong professional networks is vital for building surveyors to gain visibility and credibility within the construction industry. To enhance BS adoption globally, collaboration and knowledge exchange play crucial roles. International organizations, academic institutions, and professional associations can facilitate the transfer of best

practices and expertise across borders [2]. Collaborative research projects, conferences, and training programs can promote the standardization of BS practices and foster mutual learning among professionals worldwide.

III. MATERIALS AND METHODS

This study used a quantitative research design to gather and analyse data from the participants in Lagos metropolis, Nigeria. The population of the study comprised key built environment professionals involved in the construction and maintenance of building infrastructure in the Nigerian construction industry, which comprises Architects, Builders, Civil Engineers, Estate surveyors and valuers, and Quantity surveyors. The sample size refers to the number of participants chosen from the population to represent the entire population [15]. The sample size for this research was determined using Cochran's equation. [16] proposed the following equation to obtain a representative sample for proportions.

Cochran's Equation
$$n = \frac{p(1-p)z^2}{e^2} \qquad (1)$$

Where: n = sample size; p = population proportion; e = acceptable sampling error; z = value at reliability level of significance level. For an acceptable error of 10% and reliability level of 95% or significance level 0.05, z = 1.96, and assuming a maximum variability in the proportion, p = 0.5. Therefore, the resulting sample size is shown below

$$n = \frac{(0.5)(1-0.5)1.96^2}{(0.1)^2} = 97 \text{ Professionals.}$$

Hence, a sample of 97 professionals was calculated. A total of 130 questionnaires were administered out of which 108 numbers were duly completed and returned, representing an 83.1% response rate. To choose a representative sample of built environment professionals from the population of interest, a simple random selection procedure was utilised. Simple random sampling is a strategy in which every member of the population has an equal probability of being chosen for the study's sample [17]. This helps to ensure that the sample is representative of the population, and reduces the risk of bias in the selection process. The study made use of primary data obtained through a questionnaire survey and secondary data from existing information. The questionnaire was designed to gather information on the prospects, barriers and measures for the uptake of the BS profession in Nigeria. The questionnaire was divided into four sections to cover the various aspects of the research topic. Data collected through the questionnaire was stored electronically and handled in accordance with ethical principles and confidentiality requirements. Section A provided information about the respondents and their orginisation, including their professional background, professional affiliations, academic qualifications, years of experience, and organisation practice. Section B provided the respondents with questions on the prospects for the uptake of BS profession in Nigeria, on a 5-point Likert scale where 1 represents very poor, 2 represents poor, 3 represents moderate, 4 represents good, and 5 represents very good. Section C of the survey instrument focuses on the barriers constraining the practice of BS on a 4-point scale where 1 represents not significant, 2 represents less significant, 3 represents significant, and 4 represents most significant. While Section D focused on the measures for the uptake of the BS profession amidst other professions in Nigeria using a 5-point Likert scale where 1

represents least effective, 2 represents less effective, 3 represents moderately effective, 4 represents effective, and 5 represents most effective. The structured questionnaires were self-administered to the respondents and were retrieved after completion. Prior to the analysis, the Cronbach's Alpha (CA) reliability test was carried out on the variables of the questionnaire. CA is a statistical method used to evaluate the reliability of an instrument by measuring the extent of shared variance or covariance among its constituent items, in relation to the total variance where CA < 0.6 = poor, 0.6 to < 0.7 = moderate, 0.7 to < 0.8 = good, 0.8 to < 0.9 = very good, 0.9 > = excellent [19]. Table 1 presents a summary of reliability analysis conducted for the research construct. Based on the given Table, the questionnaire used for this study is reliable.

Table 1: The summary of reliability analysis on constructed items.

Section	Constructs	CA	CA based on standardized items	No of items	Strength of association
C	Barriers	0.860	0.856	17	Very good
D	Measures	0.928	0.928	15	Excellent

Source: Authors, (2023).

At the end of the survey period of 8 weeks, 108 copies of the questionnaires were retrieved and processed with the aid of Statistical Packages for Social Sciences (SPSS Version 23.0) and Microsoft Excel. The data collected were analyzed using descriptive statistical tools such as frequencies, percentages, relative index, and ranking. While the inferential results were analysed using the Analysis of Variance (ANOVA) test. The analysis was carried out based on the objectives of the study to provide the expected results. The demographics were analyzed using frequency tables and percentages. Objective one is to determine the prospects of the BS profession in the Nigerian building construction industry was also analysed using frequency table and percentage. Meanwhile, objective two which seeks to determine the barriers constraining BS practice was analysed using relative significant index (RSI).

The RSI is calculated as:

$$RSI = \frac{\Sigma W}{AN} \qquad (2)$$

Where,

W = weight given to each factor by the respondents and ranges from 1-5, A = the highest weight = 5, N = the total number of respondents [19]. The RSI score varies between 0 and 1. Each factor's resulting value provides an indication of its level of significance.

The third objective proposes measures that can enhance BS practice in Nigeria. The relative importance index (RII) was used in analyzing this objective.

The RII is calculated as:

$$RII = \frac{\Sigma W}{AN} \qquad (3)$$

Where,

W = weight given to each factor by the respondents and ranges from 1-5, A = the highest weight = 5, N = the total number of respondents [19]. The RII score varies between 0 and 1. Each factor's resulting value provides an indication of its level of importance.

IV. RESULTS AND DISCUSSIONS

IV.1 DEMOGRAPHIC INFORMATION

The demographic information of the respondents and organisations are shown in Table 2.

Table 2 reveals that 16.7% of the respondents have Architecture background, 27.8% have Building background, 31.5% have background in Civil engineering, 8.3% have background in Estate management, while 15.7% have background in Quantity surveying. The result shows that the respondent with civil engineering background constitute a greater percentage of the respondents and were closely followed by respondents with a background in building construction. The other professionals are equally well represented and the information provided can be relied upon. About 16.7% of the sampled respondents are affiliated to Nigerian Institute of Architects (NIA), 27.8% are affiliated to Nigerian Institute of Building (NIOB), 31.5% are affiliated to Nigerian Society of Engineers (NSE), 8.3% are affiliated to Nigeria Institute of Estate Surveyors and Valuers (NIESV), while 15.7% of the respondents are affiliated to Nigerian Institute of Quantity Surveyors. As a result, the research may rely on the respondents'

professionalism and commitment to delivering honest and legitimate replies, assuring the trustworthiness of the data obtained. In terms of academic qualification, 4.6% of the respondents have National Diploma Certificates, 22.2% have Higher National Diploma Certificates, 48.1% have Bachelors' degree, 23.1% have Master's degree, while 1.9% have Doctorate degree. This indicates that the respondents have received extensive formal education and specialised knowledge in their respective fields, making them more capable of understanding complex issues and providing thoughtful responses to the research questionnaire. Table 2 further shows the distribution of the years of experience of the respondents. About 71.3% of the respondents have over 10 years of experience in business, while 28.7% have below 10 years of work experience. Thus, majority of the respondents have considerable track record in the industry and the data supplied can be relied upon. Moreover, 27.8% of the respondents work in consulting organisations, 42.6% in contracting organisations, while 29.6% in consulting and contracting organisations. The contracting organisations constitute a greater percentage of the organisations surveyed. The results indicate a high degree of overlap and integration between these two practices within the organizations surveyed.

Table 2: Demographic Information.

Description	Frequency (N)	Percentage (%)
Professional Background		
Architecture	18	16.7
Building	30	27.8
Civil engineering	34	31.5
Estate management	9	8.3
Quantity surveying	17	15.7
Total	108	100.0
Professional Affiliation		
NIA	18	16.7
NIOB	30	27.8
NSE	33	30.6
NIESV	10	9.3
NIQS	17	15.7
Total	108	100.0
Academic Qualification		
National Diploma	5	4.6
Higher National Diploma	24	22.2
Bachelors	52	48.1
Masters	25	23.1
Ph.D.	2	1.9
Total	108	100.0
Years of Experience		
1-5 Years	17	15.7
6-10 Years	14	13.0
11-15 Years	41	38.0
16-20 Years	20	18.5
21 years and above	16	14.8
Total	108	100.0
Organisation Practice		
Consulting	30	27.8
Contracting	46	42.6
Consulting & contracting	32	29.6
Total	108	100.0

Source: Authors, (2023).

IV.2 PROSPECTS OF THE BS PROFESSION IN NIGERIA

The viewpoints of the respondents on the prospects of BS profession in the Nigerian construction industry are shown in Table 3. The response rates for the potential of embracing the BS profession by the professionals are as follows. 1.9% of the respondents sees a very poor potential of the BS practice in the Nigerian construction industry, 25.9% of the respondents indicated "poor" prospect, 23.1% indicated a "moderate" propsect, 32.4% indicated "good", while 16.7% indicated "very good". Moreover, the mean value for the prospects of BS profession in the Nigerian construction industry was interpreted using the following scale; $1.00 \leq MS < 1.49$ represents 'Very poor', $1.50 \leq MS < 2.49$ represents 'Poor', $2.50 \leq MS < 3.49$ represents 'Moderate', $3.50 \leq MS < 4.49$ represents 'Good' and $4.50 \leq MS \leq 5.00$ represents 'Very good'. The mean score value as calculated in Table 3 is 3.36. This suggests that the respondents have a moderate viewpoint toward BS uptake in the building construction industry. According to the findings, the majority of respondents feel the BS profession has a moderate potential for practice in the Nigerian built environment. This moderate disposition among professionals towards the BS profession validates one of the barriers constraining BS adoption in Nigeria. This reflects the resistance that the BS is facing from existing built environment professionals.

Table 3: Prospects of BS profession in Nigeria.

Type	Response rate (%)					SD	MS
	1	2	3	4	5		
Prospect	1.9	25.9	23.1	32.4	16.7	1.098	3.36

Note: 1= very poor; 2= poor; 3= moderate; 4= good; 5= very good; SD= Standard Deviation; MS= Mean Score.
Source: Authors, (2023).

IV.3 BARRIERS CONSTRAINING BS PRACTICE IN NIGERIA

Table 4 shows the descriptive analysis result of barriers constraining BS practice in the Nigerian construction industry. The objective of the study was to determine the barriers constraining the practice of BS in the Nigerian construction industry. In order to achieve the objective, seventeen barriers were presented to each respondents through the questionnaire. The respondents were asked to rate the level of significance of each barrier using a 4-point rating scale. Where 1 represents not significant, 2 represents less significant, 3 represents significant, and 4 represents most significant. The results of the analysis is presented in Table 4. To interpret the results, a graduated scale of 1-4 was used and the RSI were calculated. The RSI were calculated using the scale of 0.76 and above to indicate most significant, 0.67 – 0.75 indicates significant, 0.45 – 0.67 to mean less significant, and below 0.45 indicates not significant. The result shows that the respondents rank the lack of public awareness on the profession (RSI=0.90), resistance from existing built environment professionals

(RSI=0.89), lack of BS programme in tertiary institutions (RSI=0.86), lack of patronage by stakeholders (RSI=0.84), unwillingness of other professions to specialize (RSI=0.80), inadequate skills to produce a building survey report (RSI=0.79), insufficient workshops and trainings on BS and the lack of professional recognition from other professions in a tie (RSI=0.77) respectively were the most significant barriers constraining the practice of BS in the Nigerian built industry. The significant barriers according to the respondents are failure to adapt to new work techniques (RSI=0.73) and the construction industry resistance to change (RSI=0.68). The barriers which the professionals perceive as less significant were cultural attitudes and perceptions of the BS profession (RSI=0.59), lack of cost data on the previous work undertaken (RSI=0.56), inadequate building codes and legislation (RSI=0.54), non-involvement of Building surveyors throughout the entire project life cycle (RSI=0.53), unfavorable perceptions of homebuyers to engage building surveyors (RSI=0.50), and high cost of conducting a building survey (RSI=0.45). While the lack of quality assurance to oversee survey activities (RSI=0.40) was not significant. The findings on the lack of public awareness of the BS profession conforms with those of [2] and [4] who discovered that the barriers constraining BS practice is the lack of public awareness and recognition among stakeholders in the construction industry. Besides, the authors corroborate the research findings on the lack of BS programme in tertiary institutions with the notion that the BS profession is offered as a course in Architecture, Engineering and Construction in tertiary institutions in Nigeria and not a degree program. [6] further buttressed that many developing countries still lag behind in recognising BS as a distinct profession and face challenges in fully embracing its practices. Also, the barrier on the resistance from existing built environment professionals conforms to the results of [11] that the ongoing confrontation against the establishment of the BS profession by other professions hinders its widespread adoption. Furthermore, the barrier on inadequate skills to produce a building survey report agrees with the findings of [2] who noted that poor understanding of surveyor skills is a barrier constraining the practice of BS. Moreover, the findings on inadequate building codes and legislation corroborate the results of [11] that insufficient regulatory support from the government is a barrier constraining BS practice. Meanwhile, the findings on the high cost of conducting a building survey supports the results of [12] that BS services add an extra financial burden leading to their exclusion from project. The barrier on the non-involvement of building surveyors throught the entire project lifecycle conforms to the findings of [10] that limited integration of building surveyors into various stages of construction is a key barrier to BS practice uptake. The findings on the lack of patronage by stakeholders conform with the results of [9] that the BS profession is not being practiced. The barrier on the lack of patronage by stakeholders align with the findings of [2] that the lack of understanding of the building surveyor's skills, and limited job opportunities act as barriers constraining BS practice.

Table 4: Barriers constraining the practice of BS in Nigeria.

Barriers Constraining BS Practice in Nigeria	1	2	3	4	N	SD	RSI	R
Lack of public awareness on the profession	0	5	34	69	108	.581	0.90	1
Resistance from existing built environment professions	1	10	23	74	108	.700	0.89	2
Lack of building surveying programme in itertiary institutions	0	4	54	50	108	.567	0.86	3
Lack of patronage by stakeholders	1	11	46	50	108	.699	0.84	4
Unwillingness of other professions to specialize	0	13	61	34	108	.633	0.80	5
Inadequate skills to produce a building survey report	12	17	23	56	108	1.054	0.79	6
Insufficient workshops and trainings on building surveying	5	20	46	37	108	.846	0.77	7

Barriers Constraining BS Practice in Nigeria	1	2	3	4	N	SD	RSI	R
Lack of professional recognition from other professions	1	21	56	30	108	.714	0.77	7
Failure to adapt to new work techniques	8	26	42	32	108	.912	0.73	9
The construction industry's resistance to change	6	30	60	12	108	.734	0.68	10
Cultural attitudes and perceptions of the building surveying profession	12	50	43	3	108	.713	0.59	11
Lack of cost data on previous works undertaken	11	61	35	1	108	.639	0.56	12
Inadequate building codes and legislation on the building surveying practice	10	72	25	1	108	.583	0.54	13
Non-involvement of building surveyors throughout the entire project lifecycle	21	59	22	6	108	.782	0.53	14
Unfavourable perceptions of homebuyers to engage building surveyors	22	69	14	3	108	.670	0.50	15
High cost of conducting a building survey	30	52	25	1	108	.742	0.45	16
Lack of quality assurance to oversee survey activities	60	33	13	2	108	.773	0.40	17

Note: 1= not significant; 2= less significant; 3= significant; 4= most significant; N= frequency; SD= standard deviation; RSI= relative significant index; R= ranking.

Source: Authors, (2023).

IV.4 EFFECTIVE MEASURES FOR BS UPTAKE IN NIGERIA

Table 5 shows descriptive results of enhanced measures for the uptake of the BS profession in the Nigerian construction industry. To quantify the measures for BS uptake, fifteen measures were presented to each respondents through the questionnaire. The respondents were asked to rate the level of importance of each measures using a 5-point Likert scale. Where 1 represents not eefective, 2 represents slightly effective, 3 represents moderately effective, 4 represents effective, and 5 represents most effective. The results of the analysis is presented in Table 5. To interpret the results, a graduated scale of 1-5 was used and the RII was calculated. The RII were calculated using the scale: 0.81-1.00 implies most effective, 0.61-0.80 implies effective, 0.41-0.60 moderately effective, 0.21-0.40 implies less effective, and 0.00-0.20 implies least effective. This decision rule for the RII is adapted and modified from [20]. The rsults confirmed that developing better relations with other professions (RII=0.95), introducing BS programme in tertiary institutions (RII=0.92), raising awareness on the significance of conducting building survey (RII=0.88), organisation of workshop and training programs (RII=0.85), stakeholder's engagement (RII=0.84),

adjusting services (RII=0.83) and ensuring students gain hands-on experience (RII=0.82) are the most effective measures for BS uptake in Nigeria. The results further showed that leveraging tecchnology to enhance precision and effectiveness (RII=0.78), government legislation and supports to sustain the profession (RII=0.75), marketing strategy development, and control of BS procedures (RII=0.74) respectively, emphasizing health and safety when conducting a survey (RII=0.72), implementing quality assuarance and control during survey procedures and documenting previous surveys conducted (RII=0.66) respectively and seeking knowledge of the contractual aspect of the profession (RII=0.64) are effective measures for BS uptake in the Nigerian construction industry. All the evaluated measures are effective to enhance the uptake of the BS profession irrespective of the RII ratings of the measures. [4, 21] highlight raising awareness as key measure for BS practice admist other professions. The findings of [13, 14] corroborate the findings that leveraging technology to enhance precision and effectiveness are crucial measures for the uptake of BS practice. [21] support the findings of this study that introducing the BS program in tertiary institutions is a key measure to BS practice. Meanwhile, [2] agree that developing better relations by collaborating with other built environment professionals is a key measure for the uptake of the BS professio.

Table 5: Enhanced measures for the uptake of BS in Nigeria.

Enhanced measures for BS uptake	1	2	3	4	5	N	SD	RII	R
Developing better relations with other professions	1	1	1	18	87	108	.613	0.95	1
Introducing building surveying programme in tertiary institutions	0	0	2	38	68	108	.527	0.92	2
Raising awareness on the significance of conducting a building survey	1	4	5	39	59	108	.820	0.88	3
Organisation of workshops and training programs	0	3	16	42	47	108	.804	0.85	4
Stakeholder's engagement	1	1	22	35	49	108	.862	0.84	5
Adjusting services	0	1	27	35	45	108	.830	0.83	6
Ensuring students gain hands-on experience	1	17	7	29	54	108	1.132	0.82	7
Leveraging technology to enhance precision and effectiveness	0	10	21	47	30	108	.917	0.78	8
Government legislation and supports to sustain the profession	4	12	24	33	35	108	1.132	0.75	9
Marketing strategy development	3	13	31	30	31	108	1.101	0.74	10
Control of building surveying procedures	3	8	34	39	24	108	.994	0.74	10
Emphasizing health and safety when conducting a survey	1	18	28	39	22	108	1.024	0.72	12
Implementing quality assurance and control during surveying procedures	3	21	33	40	11	108	.994	0.66	13
Documenting previous surveys conducted	1	8	62	29	8	108	.759	0.66	13
Seeking knowledge of the contractual aspect of the profession	13	12	33	41	9	108	1.131	0.64	15

Note: 1= least effective; 2= less effective; 3= moderately effective; 4= effective; 5= most effective; N= frequency; SD= standard deviation; RSI= relative significant index; R= ranking.

Source: Authors, (2023).

IV.5 ANOVA TEST RESULT ON BARRIERS CONSTRAINING THE PRACTICE OF BS

Table 6 shows the inferential results of barriers constraining BS practice in the Nigerian construction industry. To further analyze the barriers constraining the uptake of BS profession, an hypothesis was postulated as follows:

Ho_1: The barriers constraining the practice of the BS profession do not significantly differ among organization practice.

It can be seen from the results of the one-way ANOVA presented in Table 6, there is no significant difference on the perception of the respondents among the organisation of practice on 15 out of the 17 hypothesized barriers constraining the BS profession with p-values greater than 0.05 ($P>0.05$). Barriers constraining the practice of BS profession for which there is no significant difference and for which the null hypothesis was accepted includes; lack of professional recognition from other professions, lack of public awareness on the pofession, high cost of carring out a building survey, non-involvement of building surveying throughout the entire project lifecycle, lack of quality assurance to oversee survey activities, resistance from existing built environment professions, inadequate skills to prepare a building survey report, unfavorable perceptions of homebuyers to engage surveyors, the construction industry's resistance to change, inadequate building codes and legislation on building surveying practice, lack of cost data on previous work undertaken, insufficient workshops and trainings on building surveying, lack of building surveying programmes in tertiary institutions, lack of patronage by stakeholders, and the unwillingness of other professions to specialise. Whereas, barriers constraining BS profession for which there is significant difference with p-values less than 0.05 ($p<0.05$) and for which the null hypothesis was rejected includes; cultural attitudes and perceptions of the building surveying profession and failure to adapt to new work techniques.

Table 6: ANOVA Test Results on the barriers constraining BS profession among organisation practice.

Barriers	DFb	DFw	DFt	F	P-value	Remark	Decision
Lack of professional recognition from other professions	2	105	107	2.262	.109	NS	Accept
Lack of public awareness on the profession	2	105	107	.355	.702	NS	Accept
High cost of carrying out a building survey	2	105	107	.739	.480	NS	Accept
Non-involvement of building surveying throughout the entire project lifecycle	2	105	107	.026	.974	NS	Accept
Cultural attitudes and perceptions of the building surveying profession	2	105	107	6.829	.002	S	Reject
Failure to adapt to new work techniques	2	105	107	7.648	.001	S	Reject
Lack of quality assurance to oversee survey activities	2	105	107	.637	.531	NS	Accept
Resistance from existing built environment professions	2	105	107	.441	.645	NS	Accept
Inadequate skills to produce a building survey report	2	105	107	.224	.800	NS	Accept
Unfavourable perceptions of homebuyers to engage building surveyors	2	105	107	.738	.481	NS	Accept
The construction industry's resistance to change	2	105	107	.539	.585	NS	Accept
Inadequate building codes and legislation on building surveying practice	2	105	107	.738	.482	NS	Accept
Lack of cost data on previous works undertaken	2	105	107	.086	.918	NS	Accept
Insufficient workshops and trainings on building surveying	2	105	107	.121	.887	NS	Accept
Lack of building surveying programme in tertiary institutions	2	105	107	.781	.460	NS	Accept
Lack of patronage by stakeholders	2	105	107	.167	.846	NS	Accept
Unwillingness of other professions to specialize	2	105	107	.383	.683	NS	Accept

DFb represents degree of Freedom between groups, DFw represents degree of Freedom within groups, DFt represents degree of Freedom total, NS represents no significant difference, S represents Significant difference. Note: P is significant at $P \leq 0.05$.

Source: Authors, (2023).

V. CONCLUSIONS

Based on the findings of this study, the study draws the following conclusions.

There is a moderate disposition among the respondents on the possible implementation of the BS profession in the construction industry. This implies that as the programme is a relatively new one that is not being offered by tertiary institutions in the country, there are currently no institution in place that make it a degree course, thus the professional are hesitant. Despite this, if efforts are made towards eliminating the barriers constraining the uptake of BS and the proposed measures are implemented, this tendency should reverse, as it has in countries where the BS profession is being practised.

The study further identified seventeen (17) barriers constraining effective implementation of the BS profession in Nigeria. The topmost three significant barriers among them are the lack of public awareness on the profession, resistance from existing built environment professionals, and the lack of BS programme in tertiary institutions. The implication of the lack of public awareness of the BS profession is that it impedes long-term growth of this critical area of expertise thereby resulting in insufficient building upkeep, hazardous constructions, and poor resource utilization. In the same vein, the findings on the resistance from existing built environment professionals implies that the BS profession cannot be fully embraced due to opposition from existing construction professionals. As a result, this limits holistic project insights thereby hampers accurate assessment, maintenance, and safety, which leads increased costs and potential oversights. Also, the

implications of the findings on the lack of BS programme in tertiary institutions constrain the number of professional employees entering the industry. The unavailability of the BS programme in tertiary institutions impedes expansion of the sector, hinders accurate construction evaluation, and restricts sustainable development.

Moreover, the study proposed fifteen effective measures for the uptake of BS profession in Nigeria. Topmost 3 measures are developing better relations with other professions, introducing BS programme in tertiary institutions, and raising awareness on the significance of conducting building survey. The implication of the first measure on deveolping better relations with other professions is that it strengthens institutional ties among the professions, establish relationships that drive collective growth, increase productivity, and foster a cohesive professional community that respects each profession's unique contributions. Meanwhile, the implication of introducing BS degrees is that institutions which provide BS degrees give their students specialized knowledge for the building sector. Graduates will be better equipped to evaluate structures, oversee maintenance, and improve safety and by closing the knowledge gap, sustainability and industry standards are ensured, and professionals are produced. Furthermore, the findings on raising awareness on the significance of conducting building surveys implies better protection of the general public, encourages openness, and raises industry standards, which eventually results in more secure and satisfying property transactions.

Based on the conclusion drawn, the study therefore recommends that increased awareness of the BS profession is needed. This may be accomplished through workshops, internet advocacy, and seminars that promote the benefits of BS. Besides, building surveyors should improve their relationships with existing professional bodies in the construction sector. This may be accomplished through establishing periodic forums for idea-sharing and collaboration. Moreover, the BS programme should be offered as degree courses at Nigerian tertiary institutions. This will be achievable if the Nigerian University Commission and other players in the country's education sector work together to design an all-encompassing curriculum for BS.

VI. AUTHOR'S CONTRIBUTION

Conceptualization: Dele Roger Simeon.
Methodology: Dele Roger Simeon, Gideon O. Adeyanju, Charles-obi Owen and Rabiu A. Aminu.
Investigation: Dele Roger Simeon, Gideon O. Adeyanju, Charles-obi Owen and Rabiu A. Aminu.
Discussion of results: Dele Roger Simeon, Gideon O. Adeyanju, Charles-obi Owen and Rabiu A. Aminu.
Writing – Original Draft: Dele Roger Simeon, Gideon O. Adeyanju, Charles-obi Owen and Rabiu A. Aminu.
Writing – Review and Editing: Dele Roger Simeon, Gideon O. Adeyanju, Charles-obi Owen and Rabiu A. Aminu.
Resources: Dele Roger Simeon, Gideon O. Adeyanju, Charles-obi Owen and Rabiu A. Aminu.
Supervision: Dele Roger Simeon, Gideon O. Adeyanju, Charles-obi Owen and Rabiu A. Aminu.
Approval of the final text: Dele Roger Simeon, Gideon O. Adeyanju, Charles-obi Owen and Rabiu A. Aminu.

VII. ACKNOWLEDGMENTS

VIII. REFERENCES

[1] O. Abiodun, and J. Nwaogu, "Comparative Assessment of Rework on Buildings in Akure Municipal, Ondo State, Nigeria," International Journal of Sustainable Construction Engineering and Technology, vol. 12, no. 2, Jul. 2021, doi: https://doi.org/10.30880/ijscet.2021.12.02.003.

[2] Z. Isnin, S. S. D. Badrol Hisham, R. Ramele, and E. M. Ahmad Zawawi, "Challenges to Building Surveyors from the Perspectives of Non Surveyors," MATEC Web of Conferences, vol. 66, p. 00097, 2016, doi: https://doi.org/10.1051/matecconf/20166600097.

[3] A. R. Abdul-Aziz, S. Suresh, and S. Renukappa, "The conundrum of professionalising building surveying in Malaysia," International Journal of Building Pathology and Adaptation, vol. 38, no. 5, pp. 621–634, Jul. 2020, doi: https://doi.org/10.1108/ijbpa-10-2019-0086.

[4] S. H. Husain, and A. I. C. Ani, "Roadmap for Redefining the Competencies of Malaysian Building Surveyors in the Post-COVID-19 Era". International Journal of Real Estate Studies, vol. 16, no. 1, pp. 36–46, Nov. 2022, https://doi.org/10.11113/intrest.v16nS1.253

[5] N. Ahzahar, A. Kayat, I. Zakaria, and S. Zubaidah, "Women in Building Survey Article Information," International Academic Research Journal of Social Science, vol. 1, no. 2, pp. 95-100, Jun. 2015, Accessed: Aug. 2023. [Online]. Available: https://www.iarjournal.com/wp-content/uploads/14-P95-100.pdf

[6] N. B. Iheama, U. Alinta-Abel, and , O. F. Ezeokoli, "Assessment of Building Survey As a Tool for Building Maintenance Program a Study of Awka, Anambra State" International Journal of Civil Engineering, Construction and Estate Management, vol. 5, no. 1, pp. 1–15, Oct. 2017, ISSN 2055-6586(online) Accessed: Aug. 05, 2023. [Online]. Available: https://www.eajournals.org/wp-content/uploads/Assessment-of-Building-Survey-as-a-Tool-for-Building-Maintenance-Program-a-Study-of-Awka-Anambra-State.pdf

[7] O. A. Chima, N. E. Ifeanyichukwu, A. T. Nnamdi, I. G. Chukwuemeka, and N. O. Precious-favour, "Evaluation of the Practice of Building Survey for Maintenance of Public Building in South-East Nigeria," Journal of Engineering Research and Reports, pp. 108–122, Mar. 2021, doi: https://doi.org/10.9734/jerr/2021/v20i317288.

[8] K. Maund, W. Sher, and Ro. Naughton, "Understanding the Building Certification System: A Need for Accreditation Reform," Australasian Journal of Construction Economics and Building - Conference Series, vol. 2, no. 2, p. 64, Apr. 2014, doi: https://doi.org/10.5130/ajceb-cs.v2i2.3892.

[9] H. Okagbue, N. Peter, J. Owolabi, P. Adamu, A. Opanuga, and C. Iroham, "Systematic Review of Building Failure and Collapse in Nigeria," International Journal of Civil Engineering and Technology (IJCIET), vol. 9, no. 10, pp. 1391–1401, Oct. 2018, Available: https://core.ac.uk/download/pdf/162044028.pdf

[10] N. H. Aziz, and N. Ahzahar, "The Challenges of Building Surveyor Graduates in Malaysia", Structural Survey, vol. 31, no. 1, 80 – 83, Oct. 2019, Accessed: Aug. 05, 2023. [Online]. https://ir.uitm.edu.my/id/eprint/51917/1/51917.pdf

[11] A. Shah Ali and C. Jia Woon, "Issues and challenges faced by building surveyors in Malaysia," Structural Survey, vol. 31, no. 1, pp. 35–42, Mar. 2013, doi: https://doi.org/10.1108/02630801311304404.

[12] T. Law, "Beyond Minimum: Proposition for Building Surveyors to Exceed the Minimum Standards of the Construction Code," Journal of Legal Affairs and Dispute Resolution in Engineering and Construction, vol. 13, no. 2, p. 03721001, May 2021, doi: https://doi.org/10.1061/(asce)la.1943-4170.0000463.

[13] K. P. Kim, R. Freda, and T. H. D. Nguyen, "Building Information Modelling Feasibility Study for Building Surveying," Sustainability, vol. 12, no. 11, p. 4791, Jun. 2020, doi: https://doi.org/10.3390/su12114791.

[14] P. M. Máder, D. Szilágyi, and O. Rák, "Tools and methodologies of 3D model-based building survey," Pollack Periodica, vol. 15, no. 1, pp. 169–176, Apr. 2020, doi: https://doi.org/10.1556/606.2020.15.1.16.

[15] S. Shukla, "Concept of population and sample," researchgate, Jun. 25, 2020. Https://www.researchgate.net/publication/346426707_concept_of_population_and_sample

[16] William Gemmell Cochran, Sampling Techniques. John Wiley & Sons, 1977. https://fsapps.nwcg.gov/gtac/CourseDownloads/IP/Cambodia/FlashDrive/Supporting_Documentation/Cochran_1977_Sampling%20Techniques.pdf

[17] Md. M. Rahman, M. I. Tabash, A. Salamzadeh, S. Abduli, and Md. S. Rahaman, "Sampling Techniques (Probability) for Quantitative Social Science Researchers: A Conceptual Guidelines with Examples," SEEU Review, vol. 17, no. 1, pp. 42–51, Jun. 2022, doi: https://doi.org/10.2478/seeur-2022-0023.

[18] F. A. M. Nawi, A. M. A. Tambi, M. F. Samat, and W. M. W. Mustapha, "A Review on The Internal Consistency of a Scale: The Empirical Example of The Influence of Human Capital Investment on Malcom Baldridge Quality Principles in TVET Institutions," Asian People Journal (APJ), vol. 3, no. 1, pp. 19–29, Apr. 2020, doi: https://doi.org/10.37231/apj.2020.3.1.121.

[19] M. N. Dube, P. R. R. Wankhade, and S. Sabhuiuddin, "International Journal of Research Publication and Reviews Relative Importance Index (RII) for Effective Evaluation of Construction Subcontracting Practices", International Journal of Research Publication and Reviews, vol. 3, no. 7, pp. 37–41, Jul. 2022, Accessed: https://ijrpr.com/uploads/V3ISSUE7/IJRPR5609.pdf

[20] C. Oyelami, and A. Shittu, "Assessment of Risk Management Techniques for Construction Projects under Design Bid Build and Design & Build Procurement Methods in Abuja, Nigeria", Journal of Environmental Design and Construction Management, vol. 19, no. 4, pp. 225-238, Dec. 2019, Accessed: https://www.hummingbirdpubng.com/wp-content/uploads/2020/06/HUJECM_225-238.pdf

[21] S. H. Husain, A. I. Che-Ani, H. Mohd Affandi, N. Mohamad Nasri, and N. Abdul Musid, "Mismatch in Supply and Demand of Building Surveying Graduates' Skills: A Triangulation Perspective," Journal of Technical Education and Training, vol. 12, no. 4, p. 70-80, Dec. 2020, doi: https://doi.org/10.30880/jtet.2020.12.04.007.