

## Assessment of Asset-specific Competencies in Valuation: A survey of Nigerian practitioners

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**Key words:** Valuation, Competencies, Challenges, Asset-specific Knowledge, Curriculum Courses

### SUMMARY

There is growing concern about reconciling the academia with practice in property valuation. One aspect of interest in this study is the extent to which available curriculum for professional education satisfies the scope of valuation of property assets using the Nigerian estate surveyor and valuer (ESV) as case study. The study identified the common areas of engagement among sampled respondents, their leading challenges during valuation exercises and their perception on relevance of new curriculum courses for upcoming estate surveyors and valuers. Questionnaire survey of members of 'faculty of education international' of the Nigerian Institution of Estate Surveyors and Valuers was carried out and the results analysed using weighted mean and paired sample test. The respondents overwhelmingly acknowledged the contribution of asset-specific courses like building construction, building maintenance and property law to their competence in valuing land and buildings (or real estate) and expressed subsisting difficulties during valuation of assets other than real estate, at measuring depreciation and interpreting pertinent property data into value figures. A strong case was therefore made for inclusion of nine new knowledge areas with introduction to machines, environmental economics and machinery maintenance topping the list. The study has revealed the need for extended curriculum focus for the education of property valuers but engendering further enquiries into appropriate nomenclature and scope of the academic discipline.

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## **1. INTRODUCTION**

The dissatisfaction of various stakeholders on different aspects of property valuation (or appraisal) has been documented in literature. The concern here however is the type of complaint by Adediji (2011), a former president of Nigerian Institution of Estate Surveyors and Valuers (NIESV) that there exists a disconnect between the training programme that are available in virtually all the tertiary institutions in Nigeria and the realities observable in the operational landscape of 'estate surveying and valuation' (the Nigerian nomenclature for the profession of property valuation or appraisal). He further reiterated that the graduates of these institutions are unsuitable to meeting the modern challenges in the practice of the profession. While the paper was not quite explicit on areas of disconnect, the fact that the scope of valuation engagements of practitioners goes beyond 'estate' or 'real estate' focus in the academia becomes one plausible reference. A similar conclusion was echoed by Ranga, Ariffian, Norhishamuddin and Zarin (2011) that real estate education in South Africa is out of touch with real world of practitioners. A recent study by Mooya (2015) also revealed significant levels of dissatisfaction amongst employers with the general competence of valuers under their supervision and that the South African valuation curriculum did not meet international norms. Koulizous (2006) aptly believed on the need to investigate how property education may be taught through appropriate stakeholder surveys. This paper takes a cue from this.

While the areas of contention between practice and academics are diverse (often ranging from various aspects of curriculum scope to pedagogy), this study is aimed at examining the extent to which the scope of practitioners' property valuation practice could be reconciled with the subsisting body of knowledge or competencies imparted on graduates. In particular, there is need to establish whether a property valuer or appraiser requires an understanding of the nature of the assets at hand, other than his general competencies in the tools of valuation and market analysis. The approach adopted is the case study type focusing online questionnaire survey of Nigerian valuation practitioners towards examining their perception of knowledge areas required for specific subjects of valuation. This is to serve as basis for identifying improvements expected when planning a review of the educational curriculum for property valuers or appraisers.

## **2. LITERATURE REVIEW**

Valuation is a definite service and its practitioners lay claim to specialist skills and knowledge with which they are recognised to have professional competence. As posited by Royal Institution of Chartered Surveyors (2013), the possession and deployment of appropriate skills and knowledge is crucial to building and sustaining public confidence and trust in valuation. The kernel of this paper is to ascertain the requisite competency (or competencies) a prospective valuer must possess in order to deliver a competent service. There is therefore the need to differentiate between the interrelated concepts of competence and competency at the onset.

Moyer (2001) viewed competence from two inter-related perspectives- ability to perform effectively (competence) and what is required to perform effectively (competency). McClelland (1973), Winterton (2009) and Alainati, Alshawhi and Al-Karaghoul (2010) were also united in describing competency or competencies as individual's characteristics that he needs to have in order to perform well in his job, which is an input requirement. On the other hand, competence is an output, which is the British approach that reflects the job requirement of that individual (Winterton, 2009). Teodorescu (2006) and Sinha (2015) posited that competency focuses those areas of knowledge, skills, attributes and behaviours which successful people possess. Competencies are the minimum standards required by an individual to perform (Strebler, Robinson and Heron 1997). McLagan (1983) described competency as the trait and knowledge of a worker that works as the base of an effective performance.

A crucial issue in the development of competency is the role of formal education and training. Alainati, Alshawhi and Al-Karaghoul (2010) carried out a comparative analysis and established the existence of a positive relationship between education and training on one hand, and the competency of an employee on the other. Bakarman (2011) and Alphachimp (2014) believed that the right attitude is the mindset, orientation with which the skill (dexterity acquired through training and experience) is developed from the knowledge (information, facts and theoretical understanding) imparted by education. Thornston (1992) identified the components of competency as aptitudes, abilities, and knowledge, all of which can be improved or enhanced by education and experience.

Generally, valuers are conscious of their need to get acquainted with the property asset at hand and not just the market in which it exists. For whatever purpose, the valuer's tasks embrace:

- i) Identifying his assignment by establishing the purpose of the valuation exercise (client's status);
- ii) Ascertaining the level of control over the property asset including the quantum of interest or right to be valued (legal status);
- iii) Understanding the nature and features of the property asset (property status); and
- iv) Analysing the economic framework within which the asset is being owned and used (economic status)

Much of the attention in valuation education – formal and informal - is apparently on the economic status of the valuation assignment. Many curriculum courses are focusing on valuation methods and principles, market study and analysis. Legal status is being taken care of by introduction of property (and sometimes contract) laws to acquaint the valuer with aspects of legal framework of property ownership and use within the locality of intended practice. Subtly however, valuers in many nations do double as estate or landed property practitioners with their vast knowledge of built environment taken for granted. Therefore, there seem to be a debate on the relevance of specific knowledge of an asset by the valuer. For instance, Ajayi (2010) was of the opinion that property valuation has gone beyond 'brick and mortar' to analyzing investment and financing framework of property market transactions. In making reference to the scope of valuation by Nigerian registered estate surveyor and valuer (ESV), Belo (2011) also held that machinery and equipment valuers do not need an engineering knowledge and experience. On the other hand, Boyd (2004) emphasized that property valuation require knowledge fields that include among others, property law, building construction and maintenance, planning, land economics and market research. The Estate Surveyors and Valuation Registration Board of Nigeria (ESVARBON, n.d) also required 'knowledge of

construction, building technologies and materials’ as part of initial professional education of an estate surveyor and valuer. Similarly, the National Universities Commission (NUC, 2007) of Nigeria had declared one of the avowed objectives of estate management programme is to ‘provide a broad and balanced foundation of the knowledge of land and buildings and their exploitation and use’. Ngwuluka (2011) also opined that plant and machinery is a specialized aspect of valuation and requires robust understanding of machines, tools and equipment. Suvarnadhada (2014) carried out a study of competencies expected from valuers in Thailand and these were stratified into core and functional. While the core competencies centred on personal qualities and ethics, mandatory competencies embraced both valuation methodologies and working knowledge of the attributes of real estate. Poon and Brownlow (2014) in their Australian study had the wider property profession as focus on competency requirements but with about 64% of their respondents being valuers. More of these valuers were reported to have agreed on the importance of ‘effective graphical communication and an understanding of statistics’.

Unfortunately, the literature on valuation competencies has not particularly narrowed on curriculum contents in the academia. More importantly, the focus of discourse about professional valuation has been skewed towards real estate in spite the reality of the property valuer’s growing engagements in other tangible assets like machinery, vehicles and furniture. The recent change of the discipline’s nomenclature in Nigerian tertiary institutions from ‘estate management’ to ‘estate management and valuation’ has further brought the concern on adequacy of curriculum to the fore as the allied engineering field in particular, had persistently challenged the estate surveyor and valuer’s competency on valuation of assets other than land and buildings (real estate) based on their avowed superior knowledge of such assets (Otis, 2001). They have since 2010 inaugurated a parallel body called ‘Institute of Appraisers and Cost Engineers’ through which members were qualified as ‘Accredited Valuers’ and firmly competing for valuation of all non-real estate assets, especially those from the industrial and government circles. Invariably, there is the need to inquire whether such asset-specific knowledge or competencies actually facilitate professional valuation, a research area that has not been directly focused in previous literature. Earlier studies interested in harmonising practice and academia have revealed that employers and academics in the professions have competing interests with employers expecting graduates to be immediately effective, instant fee-earners, while academics focus on broad educational aims and higher level intellectual skills (Harvey, Moon, Geall and Bower, 1997; Davies, Turner and Osborne, 1999 and Davies, Csete and Poon, 1999).

This study is aimed at ascertaining through empirical survey, the relevance or otherwise of some existing undergraduate courses alongside the demands for extended body of knowledge. The scope has been deliberately limited to asset-specific competencies to afford a manageable conclusion from industry’s requirements.

### **3. METHODOLOGY**

The research design adopted was case study through questionnaire survey. This delved into the relevance or otherwise of acquiring knowledge about assets as basis for attaining effective competence in their professional valuation. The study first sought to determine whether or not some existing competencies acquired through real estate-related courses within the Nigerian estate management and valuation curriculum are contributory to the valuer’s skill. Thereafter, the level of

significance attached to some suggested courses for to impart competencies for non-real estate assets were gauged. For instance, respondents were required to weigh on a 5-point Likert-type scale, their perceived relevance of courses like building construction and land surveying to their competence towards valuation of real estate assets and of proposed courses like introduction to machines in respect of machinery valuation. As a pointer to possible relevance of the proposed courses however, they were asked to identify and rank the major areas of challenge (if any) confronting them in the valuation of assets other than real estate. A copy of the questionnaire used for the survey is hereby attached as an Appendix to this paper.

The questionnaire was administered on practising Estate Surveyors and Valuers in Nigeria using the *SurveyMonkey*<sup>TM</sup> online instrument. The chosen target group was members of the ‘faculty of valuation international’ a professional *Whatsapp*<sup>TM</sup> interactive social forum of the nation’s professional valuation organisation –Nigerian Institution of Estate Surveyors and Valuers (NIESV). The group comprises active practitioners and academics with flare for valuation thereby providing necessary framework for the experiential reflection and intellectual reasoning desired in the study. Membership of the forum is open to all members belonging to two valuation-based faculties (Plant and Machinery, Valuation and Compensation) of the nine into which NIESV has been organized. Their email addresses were scooped from the list of recipients of the regular exchange of study materials sent to members from the group’s administrators. The resort to e-mail medium was to avoid any form of influence or bias that could arise through open expression on the social platform, and to afford wide geographical coverage across the nation. 117 practising members were reached from who 44 responses proved effective out of the 47 (40.17%) received after 28 days, even with three reminders sent in-between. This success rate was considered appreciable given the level of internet usage in Nigeria, coupled with limiting infrastructures. Responses elicited via the Likert-type scaling were analysed using weighted mean. Upon realising that property valuation is domiciled within the real estate discipline with specific knowledge of this asset category imparted by default, the repeated measure type of paired samples t-test has been chosen to examine the correlation of the respondents’ perception on the relevance of existing real estate courses to the valuation of real estate assets and those of parallel knowledge courses to the valuation of non-real estate assets. In other words, if it could be established that specific knowledge of real estate assets is insignificant to their valuation; neither should specific knowledge (or competency) of non-real estate assets be expected to be germane to their valuation.

#### 4. RESULTS AND DISCUSSIONS

Table 1 presents the characteristics of survey respondents. All the respondents had gone through at least either of a 5-year first university degree (B.Sc or its equivalent) or two strands of 2-year diploma courses each (leading to HND) and were therefore accustomed to the curriculum courses which were similar across the universities and polytechnics in Nigeria. Also, because the survey took place between July and early August 2016, 5 (representing about 11%) of the respondents belonged to the non-full members of NIESV but such category had been ousted from the faculty platform in September when migrating from *Whatsapp*<sup>TM</sup> to *Telegram*. Nevertheless, a significant proportion of over 88% have full professional status while over 80% have a minimum of 10 years practice experience. It is therefore expected that the responses gathered here would effectively represent a cross-section of NIESV members that have flair for valuation practice.

Table 1: Characteristics of Respondents

<b>Respondents' highest education</b>	<b>Frequency</b>	<b>%</b>
<b>HIGHEST EDUCATION:</b>		
Non-formal	0	0
National Diploma	0	0
HND/B.Sc.	31	70.45
M.Sc./Ph.D	13	29.55
<b>PROFESSIONAL STATUS (WITH NIESV):</b>		
Graduate/Probationer	5	11.36
Associate (Full Member)	29	65.91
Fellow	10	22.73
<b>LENGTH OF PRACTICE EXPERIENCE:</b>		
Below 10 years	8	18.18
10-20 years	15	34.09
Above 20 years	21	47.73

Source: Field Survey, 2016

The study first sought to ascertain the different types of assets respondent estate surveyors and valuers were involved with in practice. Eleven categories of property assets were identified as shown in Table 2. Buildings (and related improvements on land) topped the property assets being valued by the respondents with highest weighted mean of 4.4318 on a scale of 5.0, followed closely by undeveloped land (4.3182). Apart from these, only items of furniture (and fittings), plant (with machinery and equipment) as well as motor vehicles recorded significant level of experience among respondents using a 2.50 average weighted mean benchmark. The relatively low score of civil infrastructure (such as roads and bridges) can be attributed to their non-marketable nature and the fact that these are more of public investments. Environmental assets in terms of scenery and absence of pollution are also not common subjects of valuation except in some urban corridors, localities under mineral exploitation and places where chemical or other environmentally challenging establishments are sited. The other expected tangible assets for valuation purpose are jewelries and artifacts but these are equally rare personal assets. On the other hand, by his orientation and training, the estate surveyor and valuer would naturally not be expected to be involved in valuation of financial assets (such as stocks and shares) and intangible assets (like goodwill/intellectual properties) including the intricate business outfits. Except by acquiring further specialised training and experience, these are valuation aspects best suited to those having broader accounting background. Nevertheless, goodwill and intellectual properties can, as posited by Ashaolu (2016), be cautiously extracted and approached discreetly using any of the conventional valuation methods while the ease of access to capital market reports could aid non-formal valuation of shares by a property valuer.

Table 2: Areas of valuation experience of respondents

<b>Category of assets already valued before</b>	<b>Never (1)</b>	<b>Infrequent (2)</b>	<b>Average (3)</b>	<b>Frequent (4)</b>	<b>Very Frequent (5)</b>	<b>Weighted average</b>	<b>Rank</b>
<b>Land</b>	0	1	8	11	24	4.3182	2
<b>Buildings and</b>	0	1	2	18	23	4.4318	1

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<b>Improvements</b>							
<b>Civil infrastructure</b>	14	9	12	8	1	2.3864	6
<b>Plant, Machinery &amp; Equipment</b>	1	6	24	10	3	3.1818	4
<b>Motor vehicles, Ships, Aircrafts etc</b>	4	8	25	6	1	2.8182	5
<b>Furniture &amp; Fittings</b>	0	5	21	12	6	3.4318	3
<b>Environmental assets</b>	27	14	2	1	0	1.4773	8
<b>Jewelry &amp; Artifacts</b>	32	11	1	0	0	1.2955	11
Goodwill & Intellectual Properties	31	9	3	0	1	1.3182	10
Shares and Stock	30	6	6	2	0	1.5455	7
Business	31	8	5	0	0	1.4091	9

*Source: Field Survey, 2016*

Effectively therefore, the focus of an estate surveyor and valuer's area of practice as a professional valuer or appraisal should comprise the first eight property assets (excluding goodwill/intellectual properties, shares/stock and business). It is nevertheless apparent that only the first three – land, buildings and civil infrastructure – could readily be understood from his real estate educational background. Outside regular courses on valuation (at the levels of introduction, principles and applied or advanced), common courses under the 'estate management and valuation' curriculum across all tertiary institutions in Nigeria include inter alia: physical planning, surveying, architectural graphics, building construction and property law. The study therefore sought to establish the relevance of some of these to valuation practice and the outcome is as depicted in Table 3.

Table 3 presents an interesting result with all the five courses indicated scoring above 4.0 on a 5.0 scale. Also worth noting is the fact that building construction and building maintenance topped the list (in that order) and this could be interpreted to be the high premium placed on the understanding of building typology as well as assessment of building condition during valuation inspection. Incidentally, from Table 2, buildings and related improvements on land constitute the estate surveyor and valuer's leading area of engagement. The result in Table 3 becomes clearer when the respondents were requested to express their major areas of challenge during valuation exercises. From Table 4, more than 77% of the respondents found the aspect of appropriate measurement of depreciation in an asset a knotty issue. The condition of an asset can only be appropriately discerned by someone having working knowledge of it and this becomes even more daunting for assets like machinery and vehicles that must be in regular operation for meaningful assessment. Invariably, with strong built environment background training, most of the challenges expressed in Table 4 mostly apply to assets other than real estate (see Question 8 in the Appendix). Another topical problem area among the study respondents is interpretation of data into figures. This is not to be unexpected as two professionals can only collaborate effectively if they have fair knowledge of each other's language and methods (Persson, 2014). Hence, the estate surveyor and valuer acting as valuer for real estate and non-real estate assets would ordinarily be expected to seek introductory knowledge pertaining to property assets outside real estate.

**Table 3: Scoring of relevance of some existing courses to valuation of land and buildings**

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Existing knowledge courses believed to facilitate valuation of land and buildings	Very irrelevant	Irrelevant	Averagely relevant	Relevant	Very relevant	Weighted mean
Land surveying	2	0	6	18	18	4.1364
Architectural graphics and communication	1	2	4	19	18	4.1591
Building construction	3	0	2	6	33	4.5
Building maintenance	1	1	2	16	24	4.3864
Property law	2	0	3	19	20	4.25

Source: Field Survey, 2016

Table 4: Common problems encountered during inspection of assets

Common assets' inspection problem	Frequency*(max. 44)	%
Identification of the asset	13	29.55
Proper description of some assets	18	40.91
Interpreting data into figures	23	52.27
Measurement of appropriate depreciation	34	77.27

\*Multiple responses allowed

Source: Field Survey, 2016

Arising from the foregoing therefore, the study suggested nine plausible courses extracted from review of literature and oral interview with some colleagues. These courses were meant to address perceived shortfalls in the understanding of rural properties (agriculture/forestry and rural sociology), civil infrastructure (introduction to structures and materials), machinery, equipment and vehicles (introduction to machines, machinery maintenance and industrial production), environmental assets (introduction to mining/geology and environmental economics) as well as aspects of intangible assets (business accounting and asset analysis). Once again, the respondents scored all the nine courses significantly high with introduction to machines (4.3636), environmental economics (4.0455) and machinery maintenance (4.0227) on the lead in that order. Even the least rated rural sociology had 3.5 score.

Invariably, the practicing estate surveyors and valuers were of the believe that much as the courses in Table 3 aided their competence in valuing land and buildings, they would stand a better stead if corresponding adaptive courses like those in Table 5 are included in the curriculum to prepare them for valuation and assessment of other strands of property assets. Agriculture and forestry is available in some but not all Nigerian tertiary institutions offering valuation education, and this has been ranked fourth. The nature of environmental degradation associated with resource exploitation in a developing economy like Nigeria coupled with growing level of awareness of rights are expected to increase the demand for environment-related valuation. It is therefore a welcomed

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development that both environmental economics and introduction to mining are twin knowledge areas the property valuers also express appreciable yearning for. By increasing his depth of knowledge in business accounting and asset analysis, the gap between a property valuer and business valuer would narrow thereby facilitating easy communication.

Table 5: Scoring of suggested courses to be added to valuation curriculum

Courses suggested to be added to Valuation curriculum	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Weighted mean	Rank
Agriculture and Forestry	3	2	1	26	12	3.9545	4
Introduction to mining & geology	3	2	9	20	10	3.7273	6
Introduction to Machines	2	0	1	18	23	4.3636	1
Machinery Maintenance	1	4	4	19	16	4.0227	3
Industrial Production	2	4	10	19	9	3.6591	7
Environmental Economics	0	2	4	28	10	4.0455	2
Intro to Structures & Materials	1	5	11	19	8	3.6364	8
Business accounting & Asset Analysis	0	2	12	21	9	3.8409	5
Rural sociology	1	6	11	22	4	3.5	9

Source: Field Survey, 2016

A proper comparative analysis of respondents' rating of the courses listed in Tables 3 and 5 would become clear through paired samples t test. Since five existing courses were assessed in Table 3, the first five of the proposed courses in Table 5 have been considered here. The null hypothesis assumes that the true mean difference between the paired samples is zero such that all observable differences are explained by random chance.

From Table 6, both sets have a mean above 4.0. In Table 8 however, at 95% confidence interval, t-statistic is 6.969 with 4 degrees of freedom and a corresponding two-tailed p-value of 0.002, which is less than 0.05. We would therefore reject the null hypothesis and conclude that the mean difference of relevance of existing courses compared to that of the proposed courses is statistically different from 0. It is noteworthy however, that the mean scores are only higher for existing courses by 0.244 for 95% of dataset falling within a range of 0.147 and 0.341. This indicates that, although the difference in respondents' assessments is statistically significant, it is actually relatively small and therefore not quite significant in practical terms. Thus, as posited by Statistical Solutions (2016), a statistical significance that led to our rejection of the null hypothesis does not always translate to practical significance of this outcome. This is demonstrated in this study where competencies or specific knowledge acquired in respect of existing courses on real estate assets have been assessed to play significant role in their valuation thereby making similar asset-specific knowledge potentially relevant for other assets. This coupled with the challenges expressed by respondents during the valuation of non-real estate assets have invariably produced remarkable scores for the proposed courses with the two sets of assessments having high correlation of 0.924 (See Table 7).

Table 6: Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Existing courses	4.2880	5	.15418	.06895
Pair 1 Proposed courses	4.0440	5	.19424	.08687

Source: Field Survey, 2016

Table 7: Paired Samples Correlations

	N	Correlation	Sig.
Existing courses	5	.924	.025
Pair 1 Proposed courses			

Source: Field Survey, 2016

Table 8: Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair1 Existing courses – Proposed courses	.24400	.07829	.03501	.14678	.34122	6.969	4	.002

Source: Field Survey, 2016

## 5. CONCLUSION

Property valuation as a specialised course involves a blend of general valuation skill with appreciable knowledge of the asset under valuation. This study revealed that estate surveyors and valuers hold significant the contribution of their vast background knowledge of built environment courses to their competence in the valuation of land and buildings. With their leading challenges during valuation of other property assets (outside land and buildings or real estate) being measurement of depreciation and interpretation of data into figures, it is not unexpected that the respondents scored at least three (introduction to machines, environmental economics and machinery maintenance) of nine suggested courses for inclusion into the valuation curriculum above 4.0 on a scale of 5.0. It is therefore believed that the scope of property valuation practice would achieve better reconciliation with its background education if at least, these three courses are integrated into the curriculum immediately. Nevertheless, the required expansion of curriculum to properly reflect all-sector property valuation function of a professional valuer would be gradual and further study might be necessary to determine the feasibility of achieving such. A vital aspect of enquiry would be the sustainability of students' workload given the current disciplinary set up

(estate management and valuation) or perhaps, the necessity to devolve the discipline into manageable specialisations. In addition, there is the need to re-examine how appropriate an educational programme having the seeming restrictive prefix of 'estate' or 'real estate' could satisfy the scope of assets in which a property valuer is engaged in practice.

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## BIOGRAPHICAL NOTES

*Thomas Ashaolu is a first class graduate of University of Ife (now Obafemi Awolowo University, Ile-Ife, Nigeria) where he was once a lecturer in Valuation. He was also a former Head, Department of Estate Management & Valuation at the Federal Polytechnic, Ilaro, Nigeria and has authored two textbooks on property valuation. He is a Nigerian registered Estate Surveyor and Valuer since 1991.*

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## APPENDIX

### Questionnaire to Practitioners on Valuation education

**Q1:** Highest Academic Qualification

- ☐ Non-formal education
- ☐ ND
- ☐ HND/B.Sc.
- ☐ M.Sc./Ph.D

### 2. Professional Status with NIESV

- ☐ Graduate/Probationer
- ☐ ANIVS
- ☐ FNIVS
- ☐ Not a member

### 3. Years of Practising Experience

- ☐ Below 5 years
- ☐ Above 5 but below 10 years
- ☐ Above 10 but below 15 years
- ☐ Above 15 but below 20 years
- ☐ 20 years and above

**4. Which of the following asset types do you think a qualified estate surveyor and valuer can readily handle their valuation (tick as many as possible)**

- ☐ Land
- ☐ Buildings and other Structures on land

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- ☐ Civil infrastructures under, on or over land
- ☐ Plant, Machinery and Equipment
- ☐ Vehicles (including Airplane, Ships & Trains)
- ☐ Furniture, Fixtures and Fittings
- ☐ Environmental Quality and Pollution
- ☐ Jewelry and Artifacts
- ☐ Goodwill and Intellectual Properties
- ☐ Shares and Stock capital
- ☐ Business firms

Other (please specify)

**5. Please rate your frequency of involvement in the following subjects of valuation**

		Rarely	Very infrequent	Averagely	Frequent	Very frequent
Land	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buildings	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Civil infrastructures	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant, Machinery & Equipment	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motor vehicles, aircraft, ships etc	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Furniture and Fittings	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental Quality & Pollution	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jewelry and Artifacts	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goodwill and Intellectual Properties	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shares and Stock Capital	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business Firms	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

**6. Would you say as a student, you were adequately prepared for the areas of valuation you have been handling in practice?**

- ☐ Not at all
- ☐ Averagely prepared

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☐ Very well prepared

7. If not very well in 6) above, rank your level of agreement with suggestions to add the following academic courses towards improving students' background knowledge for different subjects of property valuation

	Strongly disagree	Disagree	Difficult to say	Agree	Strongly agree
Agriculture and Forestry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mineral exploitation and geology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Introduction to Machines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Machinery Maintenance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industrial Production	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental Economics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Material Science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business accounting and Capital formation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rural sociology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

8. While inspecting assets like machinery and furniture for valuation, indicate the areas of challenge you have ever experienced (multiple ticking allowed):

- ☐ Identification of the asset
- ☐ Proper description of some assets
- ☐ Interpreting data into figures
- ☐ Measurement of appropriate depreciation

Other (please specify)

9. Please rate your perception of how the following knowledge areas have proved relevant to the land and building valuation assignments you have handled in the past

	Very irrelevant	Irrelevant	Averagely relevant	Relevant	Very relevant
Physical planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Land surveying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Architectural graphics and	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Very irrelevant	Irrelevant	Averagely relevant	Relevant	Very relevant
communication					
Building construction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building maintenance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Property law	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. Please rate your perception of how the following knowledge areas could have proved relevant to the items of Plant, Machinery and Equipment valuation assignments you have handled in the past

	Very irrelevant	Irrelevant	Averagely relevant	Relevant	Very relevant
Machines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Machinery maintenance and management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant Layout	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industrial Production	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industrial law	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>