



# Learning Analytics: Professional Fees Equilibrium and Ethics between Estate Surveyors and Valuers and Clients

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## ABSTRACT

The professional scale of charges for estate surveyors and valuers as published by the regulatory body, the Estate Surveyors and Valuers Registration Board of Nigeria (ESVARBON) is a point of concern. This is because of the arbitrary negotiation, which most often than not have been done by parties concerned with the valuation assignment. Negotiation, which has been regarded as inevitable in dealings, if not curtailed in practice, could lead to incessant flaws of ethics. The study was confined to mortgage valuation as earlier works revealed its preponderance amongst other valuation types. This work aimed at determining an optimum scale of professional charges from a more scientific means using the Artificial Neural Network (ANN) aided from past negotiation between clients and practicing estate surveyors and valuers in the study area. The determination of equilibrium was more transient, particularly as the value of properties increases. The result derived will serve as a policy statement for the profession of estate surveying and valuation in charting a better course for practice.

**Key words:** Artificial Neural Networks, Ethics, Learning Analytics, Mortgage Valuation, Negotiation, Nigeria, Professional Fees.

## 1. INTRODUCTION

There appears to be an increase in the application of learning analytics tools in the educational domain leading to new insights that conventional analytic tools can handle. Learning analytics involves the use of supervised or non-supervised statistical learning or optimization tools in creating and discerning latent patterns or making predictions on data. Evolutionary computational methods, statistical learning methods and other algorithms have been applied in this context, examples include; instructional scheduling using annealing memetic algorithm [1], course scheduling using improved adaptive genetic algorithm [2], speech evaluation system [3] and interactive e learning evaluation [4]. Other works can be consulted [5-11].

The present work applied artificial neural network in determining an optimum scale of professional charges, aided from past negotiation between clients and practicing estate surveyors and valuers in Nigeria. The negotiation is regulated by ESVARBON, the professional body that is statutorily responsible for providing best practices in the profession, and responsible for institutional accreditation of the universities offering estate management and valuation in Nigeria.

Negotiation is a process of obtaining a common ground of agreement between two or more parties in order to resolve matters of mutual concern while considering their divergent interests. These interests, according to Forsyth [12] could be implicit or explicit. Negotiation is carried out amongst others to assess the strength of other parties, alter perceptions, buy/waste time, bring about a desired change in a relationship, extract information about issues, discern interests and positions of other parties, making gain, solve problems and develop new procedure for tackling problems [13]. The act of negotiation should be hinged on clear communication to be successful [12].

Negotiation as the name connotes appears synonymous with settlement of disputes, but has transcended the precincts of wars to business. Mintu Wimsatt & Calantone [14] and Ghauri and Usunier [15] opine that since the stakes are high in any given business relationship, negotiation cannot be deemphasized. This is much more evident in a more formal apprenticeship in professional cycles [16] and determination of professional fees [17]. Professionals do charge fees as consideration for their task, which is described as fees for specialized occupation representing remunerations for rendering specialized services. These fees that could usually be determined in advance of the services provided, based on the expertise of the professional, amongst other cogent factors are still subject to negotiation. This is prevalent amongst practicing Estate Surveyors and Valuers in Nigeria notwithstanding the scale of professional practice fees, which has been drafted by the practicing regulatory body, Estate Surveyors and Valuers Registration Board of Nigeria (ESVARBON). One will expect that since a laid down scale of charges is evident, one is expected to see the adherent compliance with such scale of charges. This is however not the situation just like other professionals like lawyers that charges their clients per hour of representation, contingency basis, or flat fees representation. The accountants that charge

their clients on hour's basis or flat rate or the medical doctor based on the procedure conducted amongst others [18].

The core determination of the scale of professional charges as handed down by ESVARBON based principally on the capital value of the property is a point of concern since more often than not these fees are still negotiated ridiculously. Hence, a need to look again at an optimum way of determining this scale of professional charges while considering all stakeholders so as not to leave the profession in a ludicrous state when ethics/standards are being compromised. This is in consonance with the thought of Sadri [19] who opines that members of professional cycles have dominating and illiberal forms of organization towards the interest of their professional body as against the interest of the larger society, which includes the public they serve. In seeking ways of adopting a better approach in the determination of optimum professional fees payable to Estate Surveyors and Valuers, mortgage valuation will be hinged on, which happens to be the most carried out valuation in the country [20].

As evident in practice, this negotiation of professional fees, causes discrepancies in settling fees amongst various Estate Surveyors and Valuers rendering nugatory the professional scale of charges, which will in turn affect the perception of the clients who patronize the services of estate surveyors and valuers. The continuance of this incessant negotiation of clients in mortgage valuation far below the approved scale could call for a reconsideration of the basis for fees determination. Adherence to these will perhaps result in a win-win outcome, which is the ideal situation in negotiation by striking a balance in meeting the objectives of both parties [21]. The fee chargeable is definitely not all that is being negotiated but this work is confined to it as it has been described as the most pertinent. It determines how both parties perceive the service provided in terms of delivery date and the quantity and quality of the service rendered amongst others [22].

## 2. LITERATURE REVIEW

### 2.1 Ethics in professional pursuit

Ethics and professionalism may appear interchangeably; however, they are definitely not close. Various features of ethics could relate to professionalism while not everything in ethics talks about professional practice. Ethics, which is a term relating to moral philosophy is geared towards distinguishing between right and wrong conduct while professionalism is described as approaches and manners in and out of the workplace [23]. Hence, the evidence of interchangeability in perception of the meaning of these two words.

According to Larson [24] amongst the four stages that turns a discipline into a profession is identifying the norms of practice in any given field thereby assuring the protection of the society. Professional ethics have been described as a system of standards that affects the morality and behavior of

professionals while discharging their daily activities [25]. These ethics, which have imposed certain limits on permissible negotiation tactics amongst professionals; practicality during negotiation has portrayed such boundaries as ambiguous and flexible [26]. However, the expectations of professionals have been discovered to be propelled if organizations where they work do not have undue interference to their task [27].

Various nations and professional associations have always initiated the drafting of a code of ethics for members to subscribe. The need for a code of professional ethics has been identified amongst simulationists, how much more amongst professionals that have direct interactions with people. In the built industry, for instance, where already the reputation of the industry has been described as falling short of ethics of behavior [27-28], stipulated ethics are germane. Some of the shortfalls in standards in the industry include Negligence, conflict of interest, bribery and corruption, bid cutting and shopping, collusive and withdrawal of tender, cover pricing, frontloading and payment game [29]. The American society of civil engineers had published professional conduct standard to guide her members, while the code of tendering geared towards promoting fairness and transparency were also published in Australia [30].

Likewise, across various climes, ethics concerning professionalism cannot be overemphasized. In Nigeria, just like every other regulatory professional body, the Estate Surveyors and Valuers Registration Board of Nigerian (ESVARBON), also known as the "Board" has set of code of professional conduct guiding the practice of Estate Surveying and Valuation in the country. The code of professional practice is divided into two parts: the codes and explanatory notes to the codes. There are nineteen (19) guiding codes of which, the 18<sup>th</sup> was specific on remuneration and fees. The three subsections in Code 18 are as stated (1) *A Registered Estate Surveyor and Valuer is entitled to be paid adequate remuneration for his service to the client.* (2) *A Registered Estate Surveyor and Valuer shall charge fees in accordance with the current scale of professional charges approved by the Board.* (3) *A registered Estate Surveyor and Valuer shall not be entitled to claim for the full fees calculated in accordance with the approved scale of professional charges from two parties to the same transaction.* From the explanatory notes to the 18<sup>th</sup> code which emphatically revealed that "*fees for service must be in accordance of approved scale of charges*", Estate Surveyors and valuers are expected to charge fees in accordance with the current scale of professional charges approved by the "Board". It was also stated that no Estate Surveyor and Valuer should enter into an agreement for, charge or collect an illegal fee amongst others. Indications reveal that any fee charged outside the approved scale by ESVARBON has contravened the ethical provisions of the regulatory body. The regulatory body (ESVARBON) recently released its practice standard book, which is regarded

as “the Green Book”. This is a collaborative work of the International Valuation Standards Council (IVSC) and Royal Institution of Chartered Surveyors (RICS). “The Green Book” also stipulates under the segment of “Nigerian Valuation Practice Statements” that “The fee shall be charged in accordance with the scale of professional charges approved by the Board” [31].

Every profession is therefore required to act under the ambit of any given set of rule or code of conduct, which is expected to be subscribed by her professionals [29]. These codes of professional ethics, however have been criticized on the basis of being hinged on personal responsibilities rather than a holistic coverage of the contrivances involved in the upshot of the profession and associated ethical problems. Hence, the code of ethics appears to underpin sterling behaviors while trying to retain relevance in the market. Its application has however been best seen as superficial [32].

In the construction /built industry, ethics cannot be overemphasized, as quality of job done can be affected [33], as well as even the risk of human lives innumerable [34-35] if adherence is not placed on its due consideration. There are susceptibility of ethical dilemma’s evidence in low pricing, stern competition and paper-thin margin [29].

## 2.2 Negotiation and professionalism

Apart from expertise and leadership skills, leaders in organization construct who are, professionals are expected to be able to carry out efficient negotiations. This includes, but not limited to negotiations in an extensive range of business settings and transactions, employment matters, contracting, corporate team building and dispute resolution [36]. People tend to negotiate in their capacity as either employees or owners of organizational outfits. This phenomenon, described as professional negotiating, goes on at the various levels of organization at all times. One pertinent negotiation between employees and their employers is in relations to starting salary scale as that determines the basis for subsequent salary structure [37]. Negotiation could also go on between organizations for business interests, which sometimes happen without consensus amongst participants [38]. In fact, research has postulated that professional executives spend a minimum of 20% of their time on negotiation [39]. Hence, negotiation is seen as inevitable to resolve novel situations/problems that could arise in organizations, thereby enhancing collaboration between and amongst stakeholders [40]. Such strategy has been successfully applied in the selection of competitive vendors of products and services, particularly in relating to those not selected [41]. Once professionals are weak in negotiation, there is bound to be irregularities in their given organizations [42]. Hence, professionals have been urged to develop and hone their negotiating acumen, which triggers better relationships with clientele to withstand the turbulent market place [43]. This is even experienced across borders of nations deflating the distance widened by cultural and national differences.

Certain terms such as reservation point, target point and best alternative to negotiated outcomes has been expounded in

line with their relevance in the preparatory stage of negotiation [44]. Some other related terms such as seller’s reservation price, aspiration price, and initial price offering also influence the ultimate settlement price from negotiation though in varying degrees [45]. These authors also reviewed the importance of the concept of anchoring in team negotiation just as has been established amongst estate surveyors and valuers when carrying out valuation of properties [46-47].

It is obvious that negotiation cannot be downplayed when dealings involves humans, professionals inclusive. However, such negotiation dealings should not jeopardize the ethics of practice in estate surveying and valuation profession. Hence, this present study incorporates a series of negotiated outcomes by clients and estate surveyors and valuers on fees payable, to determine the optimum professional fees payable by clients in mortgage valuation. This is in a bid to safeguard the ethical provisions of the Estate Surveying and Valuation profession in Nigeria.

## 3. MATERIALS AND METHODS

The study is a survey that lasted for over eight months between the months of November 2015 and June 2016. It entailed the distribution of questionnaires to registered Estate Surveying and Valuation Firms in Ikeja, Lagos State. The choice of these respondents is because they are the ones principally engaged in a mortgage valuation assignment. The valuation assignment was also confined to land and buildings as that presumes the base for most mortgage loans. Out of the 82 (Eighty-Two) Estate Surveying and Valuation Firms in Ikeja [48], a sample size of 35 (Thirty-Five) was randomly selected to avoid bias going by [49] model for calculating sample size. The questionnaire given to estate surveying and valuation firms was divided into two parts. The first part of the question was geared towards issues relating to ethics of the profession while the other part was hinged on the negotiation of professional fees in mortgage valuation assignment.

The other concerned party that served as respondent for this study is the clients who require the valuation assignment. They were assessed in conjunction with the major commercial banks in the country located in Ikeja, Lagos State. These banks make use of the valuation report, while disbursing loans to the clients. For the commercial banks, out of the twenty-two (22) of them in the country, twenty (20) were located in the study area. Some of which had various branches, however, one of the branches, which disburses loans to clients, was visited for each of the banks. The entire 20 banks were studied in accordance with the postulation by Denscombe [50], that a population less than 30 should not be sampled. The clients were accessed through the banks as a client represented a bank. The banks were at liberty to either fill the questionnaire or fill it in conjunction with a client. The idea is that the banks have a big role to play since they are the once disbursing the loan and more so it would be difficult to assess most of the clients without going through the banks.

This second set of questionnaires, which were for clients of mortgage valuation focused on negotiation of professional fees.

Ikeja being the capital city of Lagos State, Nigeria was chosen as the study area due to its much traffic of commercial activities particularly as regards estate surveying and valuation practice.

The data collected were analysed with the use of Artificial Neural Network (ANN) to interpolate the required professional fees that will be accepted by both respondents to avoid indiscriminate negotiation of fees.

**4. DATA PRESENTATION AND ANALYSIS**

Out of the thirty-five (35) questionnaires administered to the professional estate surveying and valuation firms, twenty-nine (29) were retrieved resulting in a (82.86%) response rate. There was a record of (80%) response rate from clients, of the twenty (20) questionnaires distributed, sixteen (16) were duly returned. The details of the characteristics of the respondents indicate that 17(58.6%) of estate surveyors and valuers in the estate surveying and valuation firms are male; while the majority of the professionals 24(82.76%) are within the age bracket of 26 and 46 years. The clients were also more of the male folks, 10 representing (62.5%) of the respondents, while majority of them 12 (75%) are within the age bracket of 38 and 50 years.

Both respondents agreed that the fees payable by clients for valuation jobs were on the high side and agreed that it should be brought down to prevent unnecessary negotiation. From the ESVARBON scale of professional charges the minimum fees payable for any valuation job undertaken is a Hundred Thousand Naira (₦100, 000. 00). This is with respect to a property having a Capital Value of ₦1, 000, 000. 00 and below. Other fees chargeable are as presented in Table 1.

**Table 1:** Scale of professional charges for land and buildings

S/N	Values (₦)	Fees Payable as % of Value (₦)
1	1, 000, 000 and below	100, 000.00
2	Next 5, 000, 000	2.5%
3	Next 15, 000, 000	2.0%
4	Next 30, 000, 000	1.0%
5	Next 50, 000, 000	0.8%
6	Next 100, 000, 000	0.7%
7	Next 200, 000, 000	0.35%
8	Residue	0.25%

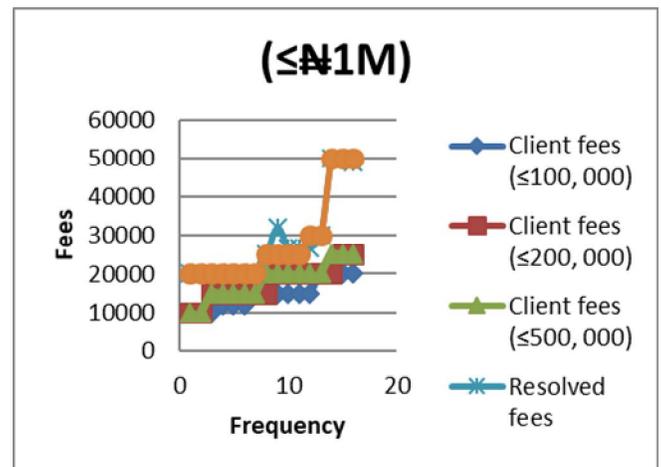
Source: ESVARBON Scale of Professional Charges (2014)

Both respondents had reservations on the fees payable being on the high side as more often than not, clients don't get to pay the fees but rather negotiate them. Hence, there cannot be said to be an agreed uniform fee collected amongst the professionals. Both respondents also agreed that such action

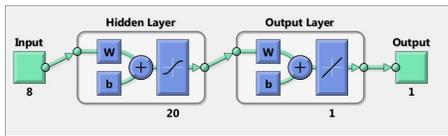
could jeopardize the integrity of practitioners and even the profession. Another disclosure from both respondents, particularly the clients was that apart from the capital value of the property another determining factor for fee determination should be the amount of loan sought. The argument was that a high capital value does not necessarily stipulate certain benefactors amongst other reasons might have bequeathed a wealthy client as some of such properties. Hence, Table 2 to Table 9 gives highlights of the various capital values of properties, amount of loan sought for mortgage, which would normally not exceed 2/3 of the capital value of the property used as collateral. The response from the two respondents were also aided from negotiations arrived at in earlier transactions.

**5. RESULTS AND DISCUSSION**

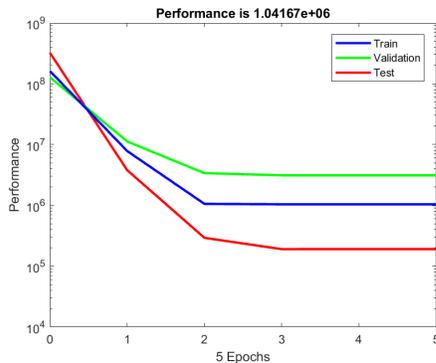
The artificial neural network (ANN) was used to estimate the resolved fees that are deemed appropriate for future transactions. The input data were the fees payable by clients and the targets are the fees payable by estate surveyors and valuers. The first that was considered was the capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction below one million naira ( $\leq$ ₦1M). The analysis of the fees in this category is shown in Figure 1. The resolved fees that were estimated via ANN is slightly lower than the surveyors and valuers (S & V) fees and higher than the client fees. The ANN estimation that was generated from its set-up (Figure 2) was used to train respondent dataset. The performance (within five epochs) of the training (70%), testing (15%) and validation (15%) is presented in Figure 3. The bias that may compromise the resolved is adjudged to be low as presented by Figure 4. Hence, the success of the analysis has 99.52% accuracy as shown in the regression analysis graph (Figure 5).



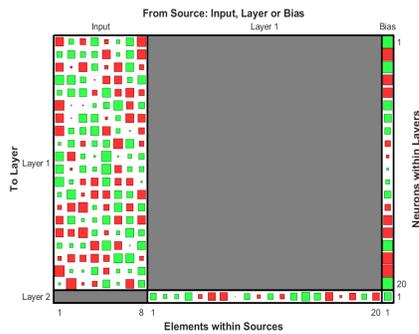
**Figure 1:** Capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction below one million naira ( $\leq$ ₦1M).



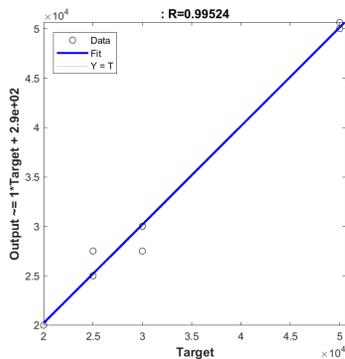
**Figure 2:** ANN set-up for the determination of resolved fees



**Figure 3:** Performance of test, train and validation layers of respondent dataset

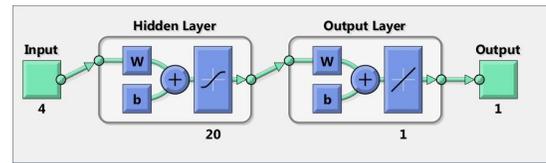


**Figure 4:** Bias of test, train and validation layers of respondent dataset

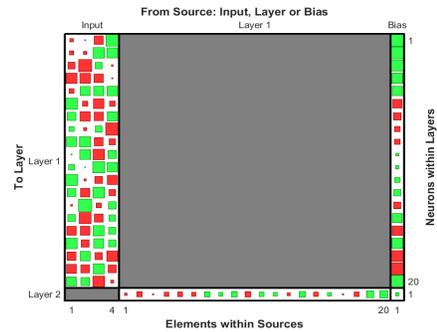


**Figure 5:** Regression analysis of respondent dataset

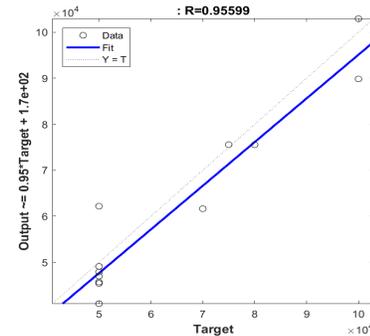
The second analysis was the capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction within  $>N1M - \leq N6M$ . The ANN set-up that was used to generate the resolved fees is shown in Figure 6. The bias was moderately low (as shown in Figure 7) and the reliability of the process is as high as 95.59% (Figure 8). The client, S & V and resolved fees are presented in Figure 9.



**Figure 6:** ANN set-up for the determination of resolved fees

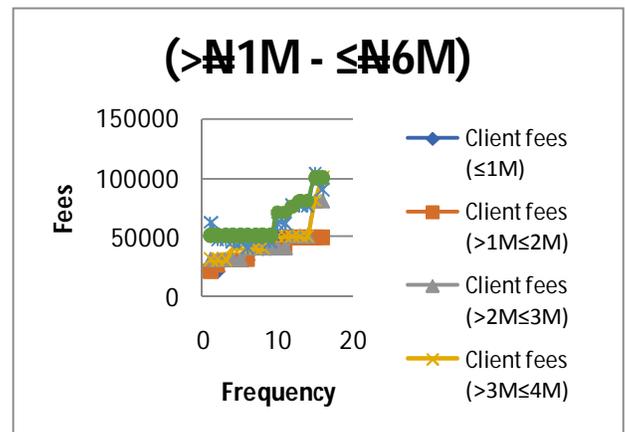


**Figure 7:** Performance of test, train and validation layers of respondent dataset  $>N1M - \leq N6M$

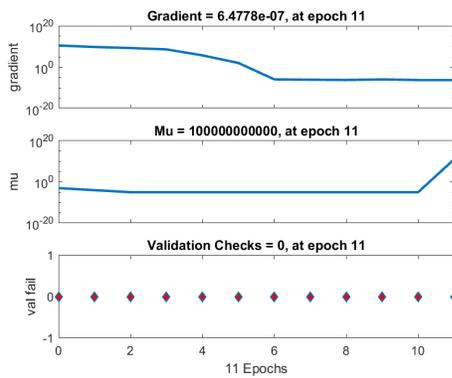


**Figure 8:** Regression analysis of respondent dataset for transaction  $>N1M - \leq N6M$

The resolved fees for client transaction within  $>N1M - \leq N6M$  has a minimum fee of  $N40,0000$  based 31% of the respondent. It was observed that the transient projection of the resolved fees is as a result of market dynamics of demand and supply.

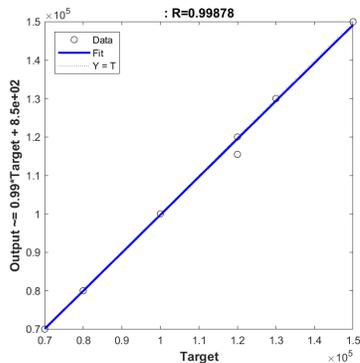


**Figure 9:** Capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction within  $>N1M - \leq N6M$

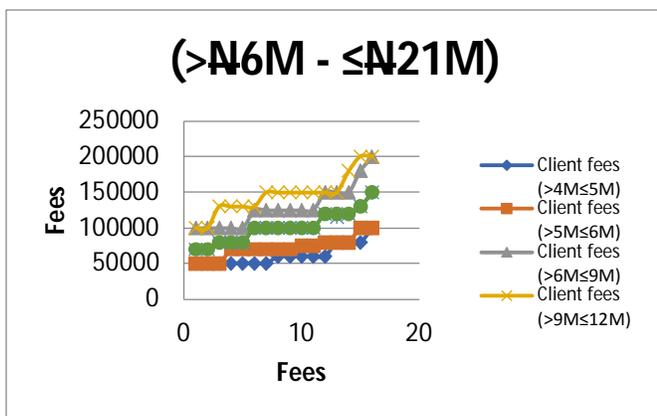


**Figure 10:** Dynamism of the response for transaction  $>N6M - \leq N21M$

The third analysis was the capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction within  $>N6M - \leq N21M$ . The ANN set-up that was used to generate the resolved fees is shown in Figure 6. The dynamism of the response is further analysed in Figure 10 within the validation checks, Mu and gradient for determining the resolved fees.

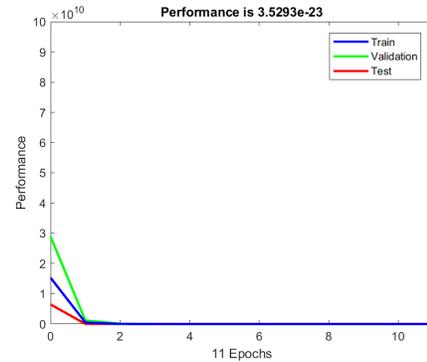


**Figure 11:** Regression analysis of respondent dataset for transaction  $>N6M - \leq N21M$



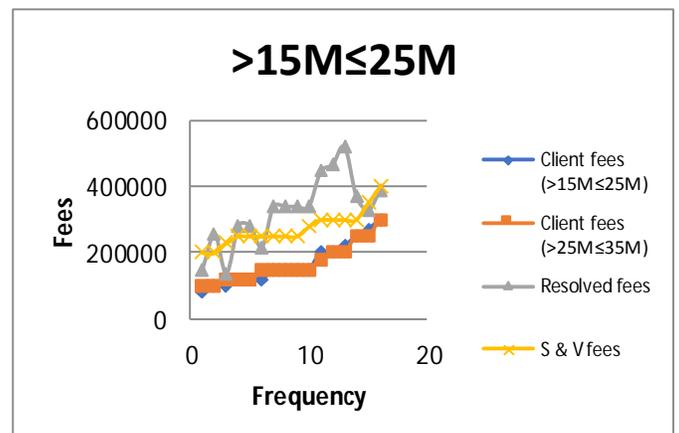
**Figure 12:** Capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction within  $>N6M - \leq N21M$

The accuracy of the ANN to determine the resolved fees is 99.87% (Figure 11). The plots showing the clients fee, S & V and resolved fees is presented in Figure 12. The resolved fees found to be between the two extremes of client fees. Based on the Figure 13, the agreement on the resolved fee requires more insightful data size. This is recommended for further study.



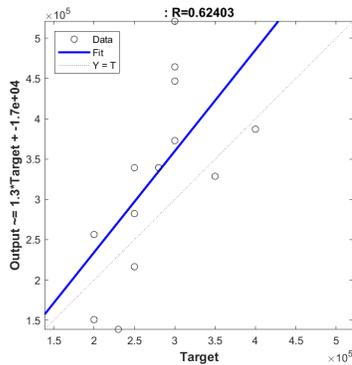
**Figure 13:** Performance of test, train and validation layers of respondent dataset for transaction within  $>N6M - \leq N21M$

The fourth analysis was the capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction within  $>N21M - \leq N51M$ . The resolved fee is seen to be higher than both the client fees and the S & V fees (Figure 14). The stable fee as shown by the ANN set-up (Figure 6) is  $\text{N}320000$ . The accuracy of the ANN to determine the resolved fees is 62.4% (Figure 15). The low accuracy figure can be traced to the training, testing and validation performance as presented in Figure 16. With the accuracy of above 80%, the resolved fees for the capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction within  $>N51M - \leq N101M$ ,  $>N101M - \leq N201M$ ,  $>N201M - \leq N401M$  and  $>N401M$  are presented in Figures 17, 18, 19 and 20 respectively.

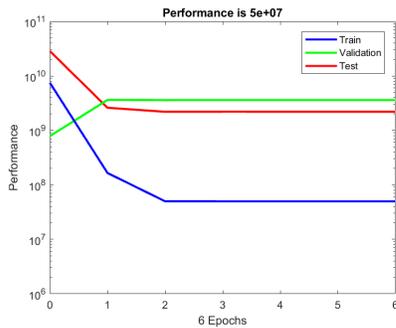


**Figure 14:** Capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction within  $>N21M - \leq N51M$

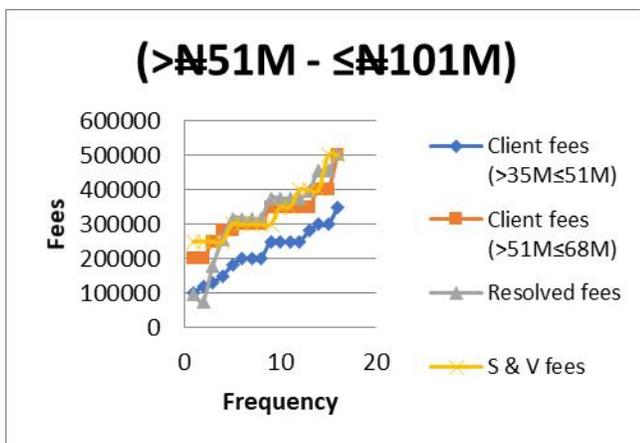
When the transaction is above 210 M Naira, the transient nature of the resolved nature becomes more evident due to market instabilities. Hence, it can be summarized that the resolved fees agree with the ESVARBON at transactions below ₦6M. When the transaction is between ₦6M and ₦210M, the resolve fees were found between the client and S & V fees. Hence, it is mandatory for ESVARBON to review its fees. When the transaction is above ₦210M, the resolved fees are transient due to low patronage and market rigidity.



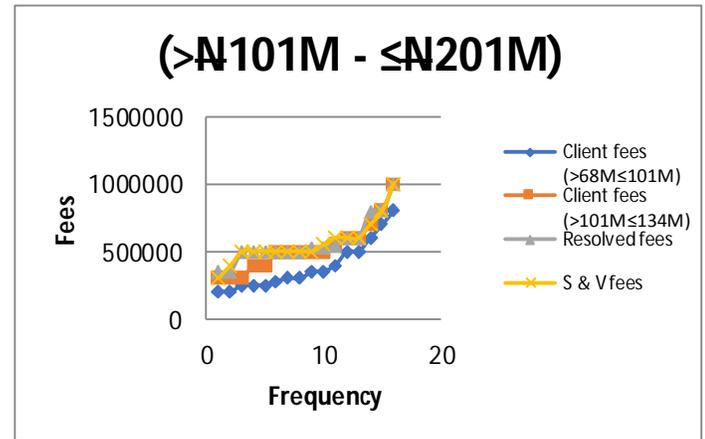
**Figure 15:** Regression analysis of respondent dataset for transaction within >₦21M - ≤₦51M



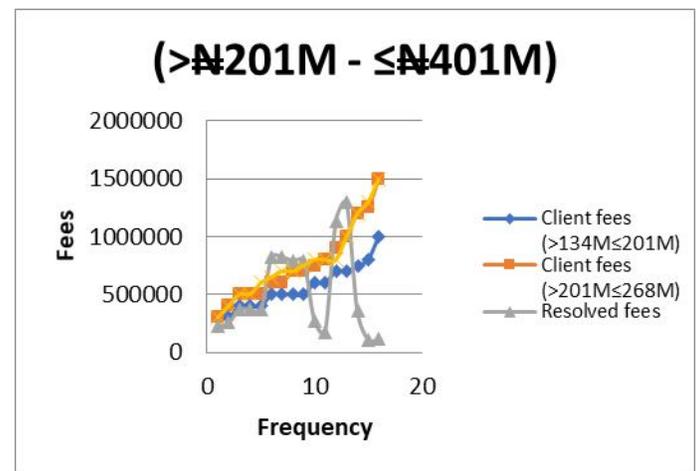
**Figure 16:** Performance of test, train and validation layers of respondent dataset for transaction within >₦21M - ≤₦51M



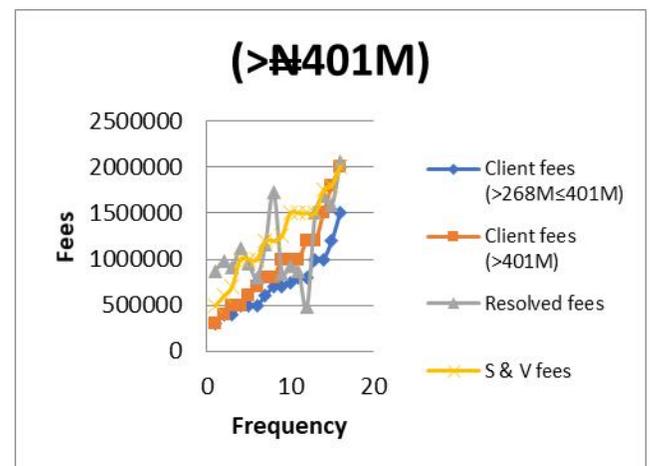
**Figure 17:** Capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction within >₦51M - ≤₦101M.



**Figure 18:** Capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction within >₦101M - ≤₦201M



**Figure 19:** Capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction within >₦201M - ≤₦401M



**Figure 20:** Capital value of property, mortgage loan sought and professional fees payable from the stance of respondents for transaction within >₦401M.

## 6. CONCLUSION

The adoption of ANN as a learning analytic for harmonizing fees between estate surveyors and valuers (S & V) and the clients was successful as some pattern of negotiation fees were obtained. The application of ANN in this context has helped deepened the understanding of this subject matter as similarly applied in [51-55]. It was observed that the peculiarity of the market dynamics over the study area is a vital determinant to estimate or predict harmonized fees. This factor was also observed in the transient nature of resolved fees at higher transaction. At lower transaction below six million Naira (<₦6M), the resolved fees agree with fees proposed by the Estate Surveyors and Valuers Registration Board of Nigeria (ESVARBON). This is because the forces of demand and supply are at its peak when the transaction is below six million Naira. The stability of the resolved fees was further affirmed as the ANN analysis showed lower biases of the respondents' decision. Furthermore, the equilibrium of resolved fees was consistently found between the client fee and ES & V when the transaction is between six and two hundred and ten million (>₦6M-≤₦210M). Hence, it is paramount for ESVARBON to review the prices at this stage. When transaction is above two hundred and ten million Naira, the resolved fees are extremely transient, which can be adduced to lower patronage and market rigidity at this level. Hence, via the ANN tool, it can be inferred that the ESVARBON requires a huge dataset from all parts of the nation to determine acceptable prices that are client friendly.

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