# Modeling Teachers Effectiveness in Communication Skills on Factors that Enhance Students' Excellence Academic Performance

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**Abstracts:** The purpose of this research work is to model factors that contribute effectively to teacher's effectiveness in communication skills to students' excellence academic performance in Kogi State, Nigeria. The study revealed that gender, religion and ethnicity are non-statistically significant on students' academic performance. This implies that they are not determinant predictors to student's academic performance in this particular paper. Residence, as a factor was statistically significant but contributed negatively to students' excellence academic performance. Factors that were statistically significant and also have positive contribution to students' performance include; Age, Parent Education, School Facilities, Self-Confidence, Resources, Personal Attitude, types of schools and the use of textbooks. The Binary Logistic Regression Model Equation for this paper is given below;

$$ln\left(\frac{\pi}{1-\pi}\right) = -5.455 + 1.943(Age) - .032(Gender) - 1.221(Religion)$$
$$- .114(Ethnicity) + .433(Parent\ Education) + .034(Types\ of\ Schools)$$
$$+ 1.018(School\ Facilities) + 2.114(Self\ Confidence)$$
$$+ .356(Resources) - .514(Residence) + 1.485(Personal\ Attitude)$$
$$+ .319(Use\ of\ Textbook)$$

**Keywords:** Performance, Communication Skills, Binary Model, Factors

## I. Introduction

Education is one of the major ingredients to human development in any country. The students' excellence academic performance can be achieved across the subjects the students offer. People measure the students' academic achievement through their examination results at the end of the year or at any particular given interval of time. There are so many factors that contributes to students' academic performance which include; age, gender, religion, ethnicity, parent education, types of schools' students attendance/ enrolments, resources, residence, self-confidence, personal attitude, school facilities and use of textbooks. For any student to achieve good result, teachers' effectiveness in communication skills must be paramount.

Therefore, teachers' effectiveness in communication skills has been viewed in many ways by different authors. It has many definitions because of its familiar concept. However, communication has been considered as both as an act and a process, it is an act of generating the message by the sender and a process in which the intended message is transmitted successfully to the receiver (Fashiku, 2017). Communication is also referred to as a physical operation in which an addresser passes the information to an addressee. From the information above, the addresser is the source of communication while the addressee is the target recipient of the information (Albalawi & Nadeem, 2020). Also, communication is an interactive process of passing information within a system such as a school organisation which will enable its role to be performed effectively.

Classroom communication can be described as the process of transmitting, receiving and decoding vital information and ideas that usually takes place between the teachers and the students. It enhances human interactions and engagements that are effective and productive. There are four major communication skills which include listening, speaking, reading and writing. Those communication skills must be well understood and properly used by both the teachers and students for more effective communication to take place. The range at which the understanding of the contexts is shared between the parties involved in the communication skills will determine its effectiveness.

Conventional or normal communication differs in many ways to classroom communication that has teaching and learning in its context. There is a formal relationship or bond between the teachers and students in classroom communication settings. According to (Gablinske, 2014), the inter-personal affection one has towards another in a classroom is a multidimensional perception, which is made of physical, social and task dimension component. The kind of classroom communication environment depends largely on

those three components which determine the kind of communication that occurs within the classroom. The beliefs and values of communication accruable from the teachers are determined by the level of attraction that exists within the classroom settings.

Teaching has to do with impacting knowledge, experiences, ideas, values and skills to students and these involve an intended expression that will cause a desire change in students' behaviour. Teaching and learning process cannot be achieved if there is no effective communication between the two parties involved. Student communication can be described as students' level of satisfaction in their communication skills with their teachers' ability to meet the instructional needs. This study treats communication satisfaction as an indicator to relational quality between the teacher and the student.

In order to deliver an effective education to students, the teachers must be in full possession of good communication skills. However, teachers are responsible for both effective and ineffective classroom communication skills which has direct or indirect impact on students' academic performance. An effective classroom communication can be achieved by the teacher through good Student-Teacher relationship that will enhance quality teaching-learning environment. To maintain good relationships with students, teachers must learn to give priority to the students and show some kind of kindness to their students as this will arouse their interest in the learning exercise and this will invariably enhance excellence academic performance.

The main purpose of this study is to evaluate the teachers' effectiveness of communication skills on students' excellence academic performance in Kogi State. Also, to examine and identify factors that contribute to students' excellence academic performance in the classroom communication skills.

## II. Research Framework

### Classroom Communication

The form of interactions between teachers and students in a formal classroom setting to receive right behaviours that enhance the acquisition of skills, values and knowledge for self-realization and betterment of the society at large is referred to as classroom communication. Therefore, the effective teaching and learning within the classroom is anchored on communication process, good communication skills that will enhance effective classroom communication. Effective classroom communication management is very crucial because nothing tangible can be achieved without the agreement between parties involved, most especially, the teachers and the students.

### Classroom Communication Skills

In order to motivate students to learn appropriately, teachers need to develop good classroom communication skills, which will enhance productivity. The communication skills that will motivate students to be actively involved in learning process, should be embraced by the teachers, in order to teach with student's pace and capacity.

### Effective classroom communication

Communication effectiveness had been defined as the transmission of a message in such a way that mutual understanding exists between the contexts in which the communication takes place (Alamgir, Salahuddin, Syed and Manzoor, 2017 and Nlewem, 2019). Effective classroom communication between teacher and students could be enhanced by creating a positive classroom environment which will help teachers to properly engage their students (Albalawi, 2020).

### Teachers' Classroom Communication Effectiveness

According to Garcia (2013), the teachers' communication effectiveness depends on daily classroom interaction with the students and their understanding of the intended massage. It is the responsibility of the teacher who serves as the source of the message to teach students some certain concepts, ideas and values in a way that they will understand and learn in the classroom during the lesson. The students can only learn appropriately, when there is an effective classroom communication. According to Mehrak and Fatemeh (2015), as cited in the role of teachers' classroom discipline effectiveness on students is determined by the following responsibilities:

- Teacher should be the overseer of learning, by coordinating the activities in the classroom so that they may form a coherent progression from lesser to greater communicative ability.
- Teachers, as manager are responsible for grouping activities into lessons and for overall organization.
- Teachers should serve as language instructors, who present new languages, controls, evaluates and corrects learners.
- Teacher should act as a consultant or adviser, in free communicative activities where necessary. They may move around the classroom and monitor student's progress, strengths and weaknesses.
- Finally, teachers should participate in an activity as a co-communicator with learners. They may encourage learners without taking their main role.

Therefore, if teachers carry out these responsibilities as a leader in the classroom, the communication may be effective on students' academic performance.

**Students' Communication Effectiveness**

Contrary to many believes (for both the parents and teachers) that students' effectiveness is determined by the good grade they have acquired. Most teachers believed that the link between learning and grade is not particularly strong, they therefore usually place more values on learning and understanding. Effective student is regarded as someone who has learned how to learn and manage the learning environment.

**Elements of Communication**

The back bone of every organization is the communication. Organization cannot be functionally effective and realized its objectives whenever the communication is bridged. Hence, the success of every organization depends on effective communication (Onyeachu, 2017). For an effective learning and teaching process to hold, both the teachers and students should be familiar with the key elements of communication (Lunenburg, 2010; Onyeachu, 2017). There are five major elements of an effective communication which were cited in Onyeachu, 2017). The five key elements are given as follows;

- **Sender or source:** This is the person that passes information, ideas or knowledge across to another person. In the classroom setting, the teacher is referred to as the source (communicator).
- **Content:** Is the message itself which is being sent to one another, it consists of information, ideas, values, skills and knowledge imparted to the students during the learning activities.
- **Channel or process:** This is the medium through which communication takes place.
- **Receiver:** This is the person that receives the message or the student in the classroom settings.
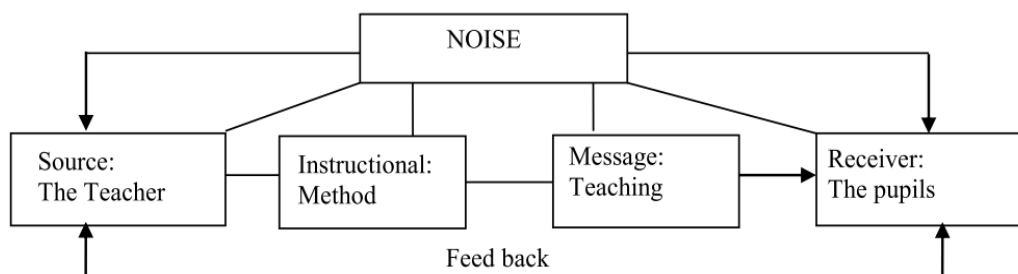- **Feedback:** This **is** the response from the receiver.



**Figure 1: A diagrammatic expression of key elements of communication skills in school system**

**Source:** Adopted from Fashiku, 2017

**Teacher-Student Relationship**

There are two most important forms of social relations that students form and maintain in school. They are relations with peers and teachers. Students tend to form a strong relationship with their peers and teachers. The relationship formed with their teachers was found to be more consistently related to academic outcomes from childhood to adolescence.

**SENDER'S RESPONSIBILITIES**

- **The teacher needs to clarify their ideas before communicating.**

The students will get and understand teacher's message when the problem or idea to be communicated is more systematically analysed. This is the first step toward effective communication. Many communications fail because of inadequate planning to students and good planning must consider the goals, attitudes and needs of those who will receive the communication and those who will be affected by it.

- **Teacher needs to examine the true purpose of each communication**.

The teacher must be conversant with the aim and objectives of what they really want to accomplish with their message, before getting information, initiate action, or change another person's attitude. The teachers need to identify their most important goal and then adapt their language, tone, and total approach to serve that specific objective and should not try to accomplish too much with each communication. The sharper the focus of their message, the greater its chances of success.

- **The teacher needs to consider the total physical and human setting.**

There are many factors that affect the overall classroom communication, therefore, the teacher must be sensitive to the total setting in which they communicate: the circumstances under which an announcement or decision is made; the physical setting whether the communication is made in private or otherwise; the social climate that pervades work relationships within the school or department and the degree to which the communication conforms to or departs from. Teachers must constantly be aware of the total setting in which they communicate, most especially individual differences must be considered.

- **Teachers must consult with other colleagues in difficult situations.**

During preparation for the students, teacher must welcome the ideas of others most especially, the superior officers for an effective communication. Frequently, it is desirable or necessary to seek the participation of others in planning a communication or in developing the facts on which to base the communication. Such consultation often lends additional insight and objectivity to the message. Moreover, those who have helped to plan the communication will give their active support.

- **Teacher need to be mindful of the overtones used during communication.**

The teacher's tone of voice, expression, and apparent receptiveness to the responses of others has great influence on students' performance. Frequently overlooked, these subtleties of communication often affect a listener's reaction to a message even more than its basic content. Therefore, the teacher must learn to use the harmonious sound during classroom communication.

- **Teacher must consider the need and interest of students**.

While communicating, consideration must be given to person's interests and needs, by trying to look at things from the other person's point of view. Teachers should frequently point out the opportunities to convey something of immediate benefit or long-range value to their students.

- **Teachers need to follow up their communication.**

Whenever teacher fails to follow up their communication, the best efforts of communication may be wasted, which they may never know even when it has succeeded. The level at which the objectives of the message has been achieved could only be determined through follow up after putting the message across. This can be done by asking questions and encouraging the receiver to express his or her reactions, and this will make classroom communication to be more effective.

## RECEIVER'S RESPONSIBILITIES

- **Stop talking:** You cannot listen if you are talking. For example, Polonius in Hamlet said: "Give every man thine ear, but few thy voice."
- **Put the talker at ease:** Help a person feel free to talk. This is often called a permissive environment.
- **Show a talker that you want to listen:** Look and act interested. Do not read your mail while someone talks. Listen to understand rather than to oppose.
- **Remove distractions:** Don't doodle, tap, or shuffle papers. Will it be quieter if you shut the door?
- **Empathize with talkers:** Try to help yourself see the other person's point of view.
- **Be patient:** Allow plenty of time. Do not interrupt a talker. Don't stand at the door or walk away.
- **Hold your temper:** An angry person takes the wrong meaning from words.
- **Go easy on argument and criticism:** These put people on the defensive, and they may clam up or become angry. Do not argue: Even if you win or lose.
- **Ask questions:** This encourages a talker and shows that you are listening. It helps to develop points further.
- **Stop talking:** This is first and last, because all other guides depend on it. You cannot do an effective listening job while you are talking. Nature gave people two ears but only one tongue, which is a gentle hint that they should listen more than they talk. Listening requires two ears, one for meaning and one for feeling. Leaders who do not listen have less information for making sound decisions.

### III. Research Methodology

The data used in this study was obtained via some set of designed questionnaires for 400 respondents within the Kogi State secondary schools' metropolis. A total number of 152 questionnaire was correctly filled for analysis. Descriptive statistics was used to analyse the factors of the respondents to the model. Also, Binary Logistic Regression Model (BLR) was generated to know factors contributing to students' excellence academic performance in some selected secondary school students in Kogi State.

### LIST OF VARIABLES USED

The Binary logistic regression is the type of regression where the dependent variable is a dummy variable coded to be 0 or 1.

### Dependent Variable Y

Teachers Effectiveness on Students' Academic Performance

No (0) and Yes (1)

### Independent Variables X

$Age\ (X_1) = 14 - 17(0)\ and\ 18 + (1)$

$Sex\ (X_2) = Male(0)\ and\ Female(1)$

$Religion\ (X_3) = Traditional(0), Christainity(1)\ and\ Islam(2)$

$Ethnicity\ (X_4) = Others(0), Igbo(1), Hausa(2)\ and\ Yoruba(3)$

$Residence\ (X_5) = Border(0)\ and\ Day(1)$

$School\ Facilities\ (X_6) = No(0)\ and\ Yes(1)$

$Personal\ Attitude\ (X_7) = Bad(0)\ and\ Good(1)$

$Resources\ (X_8) = Not\ Available(0)\ and\ Available(1)$

$Parent\ Education\ (X_9) = No\ Education(0)\ and\ Educated(1)$

$Types\ of\ Schools\ (X_{10}) = Public(0)\ Private\ Yes(1)$

$Self\ Confidence\ (X_{11}) = Poor(0)\ and\ Good(1)$

$Use\ of\ Textbook(X_{12}) = No(0)\ and\ Yes(1)$

### THE MODEL

$$Logit(P(Y \leq 1)) = ln\left(\frac{\pi}{1-\pi}\right)$$

$$= \beta_0 \pm \beta_1 X_1 \pm \cdots \pm \beta_k X_K + \varepsilon_i$$

Where

$Y = dependent\ variable$

$X_1, \dots, X_k = are\ independent\ variables$

$\beta_0 = Constant$

$\beta_1 = gradient$

$\beta_k = are\ regression\ coefficient\ of\ X_k$

$\varepsilon_i = Error\ term$

| Dependent Variable | Independent Variables |
|---|---|
| Effective Communication Skills | Age<br><br>Sex<br><br>Ethnicity<br><br>Residence<br><br>School Facilities<br><br>Parent Education<br><br>Resources<br><br>Personal Attitude<br><br>Religion<br><br>Self Confidence<br><br>Types of Schools<br><br>Use of text book |

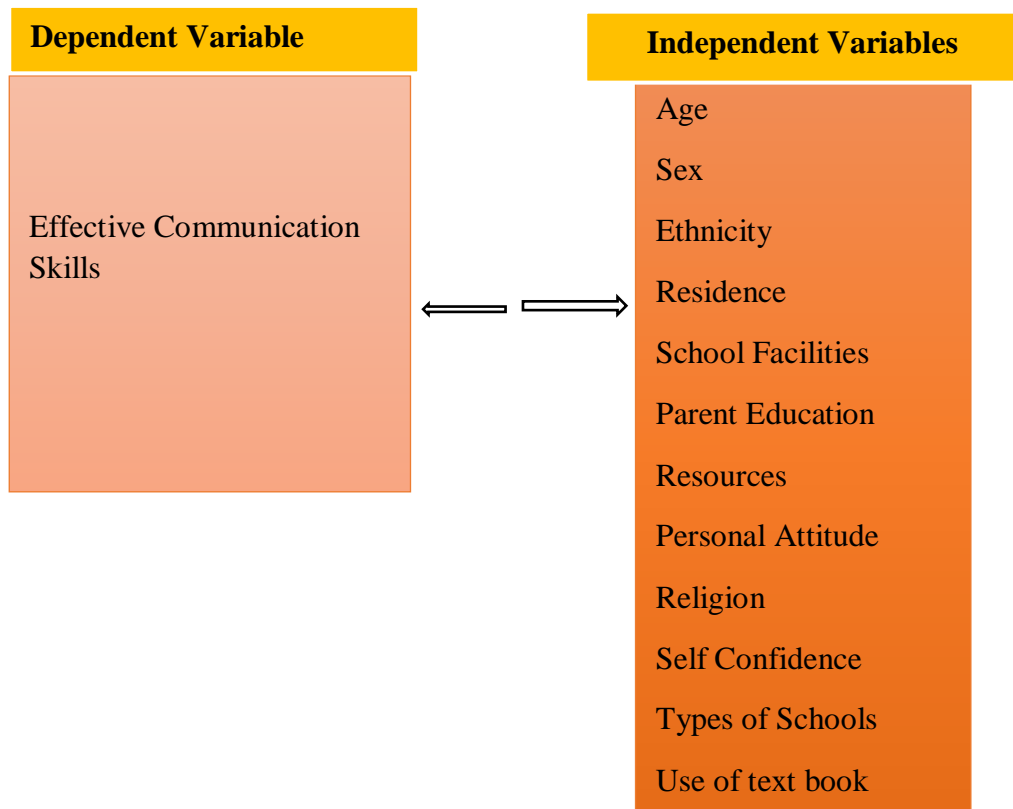**Figure 2: Conceptual Framework**

Source: Field Survey, 2022

## IV. Analysis and Interpretation

### Table 1: Model for Omnibus Tests Coefficients

| | | Chi-square | Df | Sig. |
|---|---|---|---|---|
| Step 1 | Step | 90.802 | 12 | .000 |
| | Block | 90.802 | 12 | .000 |
| | Model | 90.802 | 12 | .000 |

Source: Field Survey, 2022

The Omnibus tests of model coefficients is used to check if the new model that contains the explanatory variables has an improvement over the baseline model. If the new model has a significant reduced -2LL compared to the baseline then it suggests that the new model is in the position to explain more of the variance in the outcome and it has improvement over the baseline model. In this case, the table 1 has the chi-square which is highly significant at (chi-square=90.802, df=12, P<0.001). This implies that the new model is significantly better and good fit.

### Table 2: Model for Variation that Exist in Variable

| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|---|
| 1 | 173.251 | .450 | 681 |

Source: Field Survey, 2022

In table 2 above, the dependent variable can explain 45.0% of variation in the explanatory variables according to Cox and Snell $R^2 - value$ while Nagelkerke $R^2 - value$ which serves as a modified to Cox and Snell coefficient accounted for 68.1%. Lastly, the value of $-2 \log likelihood$ model was 173.251 which explains the existence of the set of explanatory variables used in the model.

**Table 3: Model for Hosmer and Lemeshow Test**

| Step | Chi-square | Df | Sig. |
|---|---|---|---|
| 1 | 10.347 | 8 | .242 |

Source: Field Survey, 2022

The Hosmer-Lemeshow test is known as test of model fit. It is used for testing the adequacy of the fitted model to the data. The test statistic indicates that a poor fit if the significance value is less than 0.05. Here, the model fit the data because the $X^2$ was 10.347 with $p - value$ =.242 which is greater than 5% level of significance. This shows that there is good fit of the data.

**Table 4: Classification Table for Predicted and Observed Data**

| | | Predicted | | |
|---|---|---|---|---|
| | | TEOSAP | | Percentage Correct |
| | Observed | Effectiveness on Students Performance | No effectiveness on Students Performance | |
| Step 1 TEOSAP | Effectiveness on Students Performance | 110 | 7 | 94.0 |
| | No effectiveness on Students Performance | 4 | 31 | 88.6 |
| Overall Percentage | | | | 92.8 |

The table 4 shows the accuracy in the model. It was revealed that 92.8% of a total accuracy was found in the model.

**Table 5: Coefficients Estimate of the Variables**

| | | B | S.E. | Wald | Df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 1 | **Age** | 1.943 | 2.427 | 20.330 | 1 | <.001 | 6.980 |
| | **Gender** | -.032 | 3.043 | 10.081 | 1 | .248 | .969 |
| | **Religion** | -1.221 | 2.406 | 11.674 | 1 | .106 | .295 |
| | **Ethnicity** | -.114 | 1.151 | 10.990 | 1 | .341 | .892 |
| | **Parent Education** | .433 | .521 | .004 | 1 | .004 | 1.542 |
| | **Type of Schools** | .034 | 1.488 | 8.877 | 1 | .003 | 1.035 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **School Facilities** | 1.018 | 1.651 | 17.055 | 1 | <.001 | 2.767 |
| **Self Confidence** | 2.114 | 1.487 | 19.010 | 1 | <.001 | 8.281 |
| **Resources** | .356 | .410 | .755 | 1 | .035 | 1.428 |
| **Residence** | -.514 | 2.011 | 17.921 | 1 | <.001 | .598 |
| **Personal Attitude** | 1.485 | .599 | 6.144 | 1 | .013 | 4.415 |
| **Use of Textbook** | .319 | 2.378 | .018 | 1 | .001 | 1.376 |
| **Constant** | -5.455 | 7.019 | 13.151 | 1 | <.001 | .004 |
| Source: Field Survey, 2022 | | | | | | |

The binary logistic regression model can be presented in a Mathematical equation form as follows,

$$ln\left(\frac{\pi}{1-\pi}\right) = -5.455 + 1.943(Age) - .032(Gender) - 1.221(Religion) - .114(Ethnicity) + .433(Parent\ Education)$$
$$+ .034(Types\ of\ Schools) + 1.018(School\ Facilities) + 2.114(Self\ Confidence) + .356(Resources)$$
$$- .514(Residence) + 1.485(Personal\ Attitude) + .319(Use\ of\ Textbook)$$

From the result obtained in Table 5, it was established that gender, religion and ethnicity are non- statistically significant because their p-values are greater than (0.05) level of significance and also have negative impact towards student excellent academic performance. This implies that they are not determinant predictors to student's academic performance.

However, the odds-ratio ($\ell^{\beta_J}$) are used to interpret the factors that are statistically significant to the above model in table 5.

According to the results in Table 5, students' ages are positively associated with the students' performance. More specifically, students with aged 18+ will have 598% higher chance of performing well in their various subjects than students with aged 14-17 years with (OR= 6.980, P < 0.001).

In terms of the parent education, students with educated parents will have 54.7% higher chance of performing well in their subjects than students with uneducated parents with (OR= 1.547, P= 0.004).

Students who go to private schools will have 3.5% higher chance of performing well in their various subjects than those who go to public schools with (OR= 1.035, P= 0.003).

Also, students who have enough school facilities will have 176.7% higher chance of performing well in their various subjects than students with poor school facilities with (OR=2.767, P< 0.001).

Moreover, students with self-confidence will have 728.1% higher chance of performing well with good results than those without self confidence with (OR= 8.281, P< 0.001).

In terms of students whose schools are well equipped with a lot of resources will have 42.8% higher chance of performing well than those whose schools are without enough resources with (OR=1.428, P = 0.035).

In the same note, students who do not stay in hostels (Day) will have 40.2% less chance of performing well in their various subjects than students who stay in hostels (Border) with (OR= 0.598, P< 0.001) and also contributing negative impact to the model.

Furthermore, students with good personal attitudes toward education will have 341.5% higher chances of performing well in their various schools than those with bad personal attitude toward education with (OR= 4.415, P= 0.013).

 Lastly, students that have enough textbooks will have 37.6% higher chance of performing better in their subjects than students who lack textbooks with (OR= 1.376, P= 0.001).
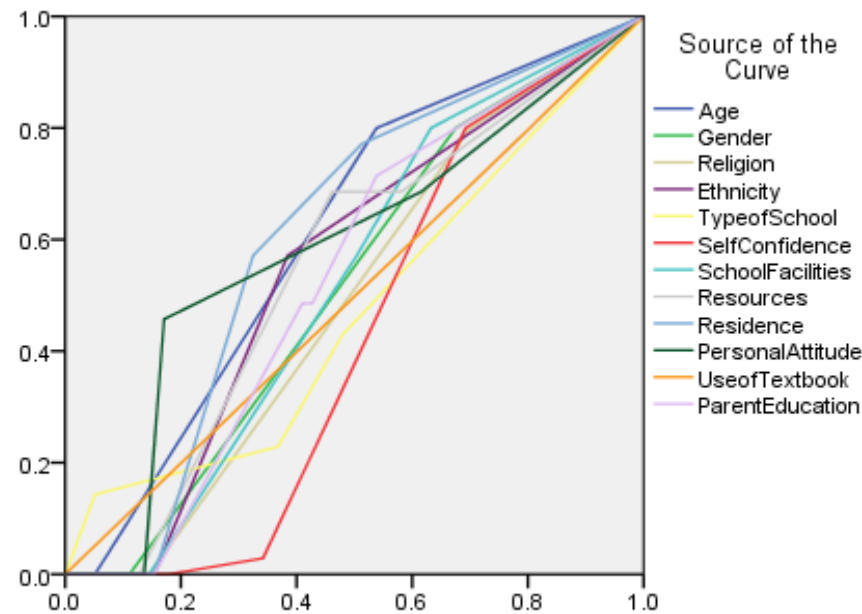
Figure 3: Plot of Observed Cumulative Percentage for Conceptual Framework

## V. Conclusion

In this research work, it was observed that factors like Gender, Religion and Ethnicity were non-statistically significant to students' excellence academic performance. This implies that they are not determinant predictors to student's performance and not at all contributing to the model. The residence, as one of the factors was statistically significant but has negative impact to students' performance and the model. The other factors that are statistically significant with positive effective towards students' academic performance include (Age, Parent Education, Types of Schools, School Facilities, Self-Confidence, Resources, Personal Attitude and Use of Textbooks). All factors with positive impact are well recognized in the model towards students' excellence academic performance.

## VI. Recommdations

- The school management should provide enough facilities for teachers and students.
- Government must ensure they employ both qualified and competent teachers who should be well focused.
- Learning environment must be very conducive.
- Teachers should encourage their students to be self confidence in their various class works by engaging them in class activities for effective teaching and learning to take place.
- A good personal attitude of students should be encouraged to improve their academic performance.
- Schools should provide enough textbooks and instructional materials for teachers and students to improve teaching and learning activities.
- Parents should advise their children to have good conduct so that there will be a very cordial relationship between the teachers and the students for effective teaching and learning.
- Government should give incentives to teachers as this will be a motivating factor to discharge their duties diligently.

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