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# PERCEPTIONS OF STUDENTS TOWARDS HIGHER NATIONAL DIPLOMA EDUCATION IN GHANA: A CASE STUDY OF KUMASI POLYTECHNIC

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**Abstract**

This paper investigates into perceptions towards HND education in Ghana. A structured questionnaire was designed as the main tool in soliciting student's views across all faculties and the various departments respectively using simple random sampling technique. The ordinal logit model was applied to select significant factors that influenced student's perceptions about the HND education. It was evident from the results that 52.5% s. disagree that their current programme of study offered them by Kumasi Polytechnic is their preferred programme whilst 41.1% also s. disagree the HND qualification is suitable to fill the middle level manpower gab of the Ghana economy. The survey further reveals that 37.9% agree that Kumasi Polytechnic provides the necessary logistics in enhancing vocational, technical & theoretical studies. However only about one in four students (26.2%) are satisfied with the general supervision of industrial attachment of the Polytechnic education AT Kumasi Polytechnic.

**Keywords:** Ghana, Polytechnic, Ordinal, Perception, Satisfaction, Tertiary Education

## 1. Introduction

In Ghana a report of a Presidential Committee which reported on the 'Review of Education Reforms' defined tertiary education as the education offered after secondary level at a university, polytechnic, specialized institutions, open university and any other institutions to provide training that lead to the award of diploma and degree qualifications.

The HND is a 3-year postsecondary qualification that is centrally certified by the National Board for Professional and Technician Examinations (NABPTEX). NABPTEX is a legally mandated examining body that is backed by an Act of Parliament (Act 492 of 1994) and is responsible for developing the HND curriculum, review of syllabuses, conduct of examinations and the award of diplomas. Tertiary education is generally seen as a formal, non-compulsory education that follows secondary education (Compbell and Razsnyai, 2002; HEA, 2004). However, one significant feature of the polytechnic education from the university education is the blend of on-the job training and theoretical learning.

The aims and objectives of the polytechnics are clearly spelt out in the Polytechnic Law.

The mission and mandate of the polytechnics are to:

- Provide tertiary education in the field of manufacturing, commerce, science, technology, applied social sciences, applied arts and such other areas as may be determined by the authority responsible for higher education;
- Encourage study in technical subjects at the tertiary level; and
- Provide opportunity for development, research and publication of research findings.

### *1.1 Definition of education*

There exist different definitions of education in the literature depending on direction. According to Whitehead (55),

[1] Professor

 

"Education is the acquisition of the art of the utilization of knowledge". Peters (1967) defined education as passing down worthwhile or useful values within a society. Also John Dewey (1916) defines it as "a process of reconstruction and reinstitution of experiences giving it a more socialized value through the medium of increased individual efficiency.

From the above definitions, it is evident that education trains an individual to become relevant in his/her society contributing to the socio-economic development of one's immediate environment. In this paper, education is seen as a blend of vocational, technical and theoretical training process as HND education put more emphasis not only on theory but more importantly on the practical and technical knowhow of the theory.

Polytechnic education in Ghana, currently, has seen more improvement than before. Acceptability of the HND education in general for some reasons suffered several setbacks both from the public and the government. Universities in Ghana even disregarded the HND qualification as most graduates from the polytechnic were still admitted to year one irrespective of their earned qualification from the polytechnic. Few universities in Ghana, during these trying moments accepted polytechnic qualification as above the first year entry requirement and placed them at **the right level**. University of Cape Coast, one out of the six public universities for instance over the years admitted HND graduates to year three of some selected degree/bachelors programmes like Statistics, Commerce. The emergence of private universities over the last few years has further stirred up the need to admit HND graduates to the right year when seeking admission at the universities. Top-up programmes which are popular with private universities give HND graduates two years to earn a degree. This phenomenon has not only changed the public perception about HND education but also influenced public universities now to rightly place polytechnic graduates at year three as practiced by the private universities. In addition to these numerous challenges facing graduates of polytechnics, many who seek work to acquire or gain experience also face outright discrimination, misconceptions and uncertainties resulting to their being wrongly placed on the employment scale. The confusion about the ranking of polytechnic education even led to HND graduates equating themselves to degree holders and hence demanding equal remuneration.

The polytechnic mandate differs from that of the universities, University Education is largely theoretical. The polytechnic mandate however, stresses more on hands on practical oriented training with their graduates expected to be more of job creators than job seekers. Despite their mandate, the polytechnics are seen to be lacking in many areas as compared to the universities. Most polytechnics lack the required financial resources to sustain quality practical training and the infrastructures (residential facilities and academic facilities) and this affects the smooth running of the polytechnics as compared to the universities. Improvement in these areas will further boost polytechnic education. According to the World Bank, productivity is a critical by-product of quality education (World Bank, 2006). Irrespective of all the challenges, the polytechnics are able to make do with what is existing to train its students in difficult circumstances especially when it come to the technical and vocational related programmes which calls for massive logistic out lays.

Before the enactment of the Polytechnic Law prior to 1993, the six polytechnics existing at the time operated as technical colleges that offered mainly sub-tertiary courses and qualifications. After the enactment of the Polytechnic Law (PNDCL 321), Ghana now can boost of ten state-owned polytechnics, one in each of the ten regions of Ghana. The polytechnics training are more of technical and vocational and offering programmes in the engineering, sciences, technology and business management. Currently, selected polytechnic have started straight four year degree programmes toward the award of Bachelor of Technology (BTech) in addition to the traditional Higher National Diploma (HND) certificate.

*1.2 Factors influencing the Choice of Tertiary Institutions in Ghana*

The choice of HND education in Ghana may be influenced by a lot of factors depending on the prospective individual. Some of the common reasons are as follows;

Many factors do affect ones decision especially when it comes to choosing a tertiary institution. These factors include where one lives, the family, friends, and opinion leaders amongst others in the society. Apart from the domestic influences on individual choice of education at the tertiary level, personal preferences, based on a combination of factors, also count. Some of the reasons might be personal affection for a particular institution and religious affiliation. This is common in the private institutions which are owned by churches and individuals alike (Owusu, 2012). Family and friends remain the main source of influence affecting choice as they remains the first point of consultation when it comes to choosing an institution to enroll in. Family members or friends might be former students of an institution and as such wish their children and friend to go there based on their strong positive conviction about the institution.

Most prospective candidates seeking tertiary education can also be influenced by social factors such as church affiliation, on campus sporting activities and laurel achieved by the institution, entertainment as well as affiliation with prestigious

 

institutions. According to the works of (Richard *et al*, 1999) and R. Books (2003), campus life, and other social activities going on the various halls within the institution as well as the general atmosphere surrounding the campus can influence a student to choose an institution or not. In the case of religious affiliation, the practices and beliefs of the religious sect are never undermined which gives the student inner peace and no conflict with their religion on these institutions.

The academic performance of students at non-tertiary level also counts very much as there is always a cut off point for admission at any tertiary institution in Ghana. Hence one's choice to an institution is influenced by the institution's cut off point for admission. This however means that a student preference depends on the various institutional cut off points and other blends of factors as mentioned above. Hence a student choice to an institution will be influenced by the institution's good reputation, quality of the teaching staff, variety of programmes offered to enable students choose between course they want to study and a good environment that supports studies (Martin *et al.* 1991). Most students also consider continuity opportunities at the institution since their priority might be to progress from the HND to degree and possibly undertake the graduate study at the same institution because of what it offers. What is more, students will choose a particular institution when that institution offers post-graduate programmes so that after ones first degree that person can come back and further his course of study at the post graduate level (Felix and Steve, 2007). Irrespective of the reasons above, access to a student preferred programme also affects his/her choice of tertiary institution.

Funding tertiary education in most developing countries is a challenge. Lack of funding turns to influence student's choice of which tertiary institution to enroll. Tuition fees, hostel fees charged by the institutions together with cost of living on the campuses or the regions where this institution are located are very high and vary. (Steve and Felix, 2007). There is a significant difference with respect to fees, among others charged by both the Universities and the Polytechnics. The higher one moves up the academic ladder, the higher the cost. Kurasha (2003) concurs with the University of the West Indies, Mona, that the responsibility of the students is the meeting of the prerequisites of the institution – this includes tuition and matriculation. He writes:

*... Due to limited financial resources, the students have to pay their fees up-front per semester or per year, depending on the program. Students that have not paid their fees neither register nor write assignments or exams and they do not get any learning materials (Kurasha, 2003, p.10).* It is therefore not surprising that students who are expected to enroll at the university level turn to enroll at the polytechnic where they think the financial obligations can be more affordable as compared to the university. Access to tertiary education is a difficult option for the poor. Based on studies, education is a vehicle in the socio-economic mobility (development) (Nie, *et al*., 1972) which if it can be access by the poor, will transform their social-environment (Barr, 2005).

*1.3 Challenges & Prospects of HND Education*

The general running and management of HND education in Ghana has not been without problems and challenges. The major challenges facing the Polytechnics include:

- Competition for Quality Academic Staff and Students,
- Misconception about the Nature and the Role of the Polytechnics

The emergence of new but private tertiary institutions in the country puts much stiffer competition for academic staff as well good quality students. With respect to high-caliber academic staff, most candidates with such expertise are attracted by other tertiary government institution where better financial remunerations are and other conditions of service are available.

The polytechnics are generally not first choice institutions for many students because, opportunities for academic progressions are limited in Ghana and public recognition of the HND qualification is quite low (Boakye-Agyemang, 2006). A learning organisation is one where all the staff, through the exchange of information and the desire to learn and improve, is constantly and continually increasing the ability to achieve the results that they really care about (Goodman *et al.,* 1997).

There still exist some misconceptions within the general population about the status and role polytechnic education in Ghana. Graduates of polytechnics not until now argued loudly as to their actual position and level with respect to their university counterparts. This leads to many polytechnic students harboring the erroneous impression that the HND certificate was equivalent to the degree. The perceived lack of a clear cut distinction between polytechnic education and university education has fuel the public controversy about tertiary education in Ghana.

The purpose of the present study was to verify four cardinal issues influencing the entire HND education in Ghana. This study contributes to the existing literature and will further help facilitate stakeholders true understanding of polytechnic education alter the present perceptions and determine the way forward. Specifically, the following were investigated in this

study:

- What are the demographic characteristics of HND learners?
- What are the student perceptions of the general supervision of industrial attachment of the Polytechnic education?
- What are the student perceptions of the provision of logistics in enhancing vocational, technical & theoretical studies?
- What are the student perceptions of the suitability of the HND qualification to fill the middle level manpower gab of the Ghana economy?
- What are the student perceptions of the access to a programme of choice at Kumasi Polytechnic?

This paper is organised as follows: after Introduction, Background and Objectives of the paper, Methodology is presented in Section 2, followed by Empirical Results & Discussion in Sections 3 and lastly Conclusions in section 4 respectively.

**2 Methodology**

Kumasi Polytechnic is located at the capital city of Ashanti Region of Ghana (Kumasi) and among the ten Polytechnics in Ghana. The Polytechnic was established in 1954, then known as Kumasi Technical Institute and became a Polytechnic on 30th October, 1963. It was later upgraded to a tertiary institution following the enactment of the Polytechnic Law 1992, PNDC Law 321. Prior to the enactment of the Polytechnic Law 1992, the Polytechnic then run Technician and Diploma programmes with few professional courses. Currently, the Polytechnic runs 17 departments under six faculties, two institutes and a school, offering full – time and part - time programmes at tertiary and non – tertiary levels.

A sample of 964 HND students who attended lectures at the time of the survey were randomly selected and the response rate for the administered questionnaires was 98%. The respondents were asked to rate the overall supervision of industrial attachment of the Polytechnic education on a five point scale with 1 being poor and 5 being excellent. Three other cardinal holding views namely provision of logistics in enhancing vocational, technical & theoretical studies, suitability of the HND qualification to fill the middle level manpower gab of the economy and lastly access to a programme of choice at Kumasi Polytechnic as compared to other institutions in Ghana were also rated on a five point scale with 1 being strongly disagree and 5 being strongly agree.

The survey was conducted in May of 2012 and collected data on variables related to student perceptions towards HND education and other services provided at the Kumasi Polytechnic. The variables measured include the availability of current and relevant materials, reliable internet facility, enough lecture halls comfortable seats with desk, theft rate, on-campus and off-campus accommodation, good learning environmental. Some demographic information on the respondents (students) were also collected.

The data used in this study is from a self administered structured questionnaire conducted by the researchers in the lecture hall of Kumasi Polytechnic.

To determine the possible factors influencing the overall satisfaction level of the respondents, an ordinal logistic regression model was specified. This model type was chosen due to the ordinal and polytomous nature of the response variable. The Task Group on Information on Quality and Standards in Higher Education ("Cooke Report") recommended that the outcomes of student satisfaction surveys should be a prime source of information on the quality and standards of higher education. (Higher Education Funding Council for England, 2002).

*2.1 Model Specification*

The statistical model utilized in this study is the Ordinal Logistic Regression Model. The ordinal logistic regression model is used to explain the relationship between ordinal polytomous dependent variable and a categorical and /or continuous independent variable. The model is similar to the Multinomial Logistic Regression Model but it takes into account the ordinal nature of the dependent variable (Agresti, 2007).

In ordinal logistic regression, the cumulative logit function is represented as

$$\eta_m \; a_m - b_1 x_1 - b_2 x_2 - \ldots - b_k x_k \qquad (1)$$

Where $a_m$ is the threshold or cut off between any two ordered categories .This logit can be used to calculate the cumulative probability for any number of ordered categories using the equation

 

$$\varphi_m = \frac{1}{1+e^{-\left(a-\sum_{m-1}^{k}[b_m X_m]\right)}} \quad (2)$$

$$\varphi_m = \frac{1}{1+e^{-\eta_m}} \quad (3)$$

For *J* ordered categories, *J-1* equations are needed. Therefore the cumulative logit function would be created *J-1* times. For example, five ordered categories would require four equations to include the first threshold, $a_1$, the second threshold, $a_2$, the third threshold, $a_3$ and the fourth threshold, $a_4$. The first equation yields the probability that an observation is in category 1. The second equation yields the probability that an observation is in category 1 or 2. Similarly, the third equation yields the probability that an observation is in category 1, category 2 or category 3. Lastly, the third equation yields the probability that an observation is in category 1, category 2, category 3 or category 4. From equation (1), since the relationship between all pairs of categories is the same, we obtain only one coefficient ($b_i$) for the estimated model and different intercept for each category. The estimated value of the coefficient ($b_i$) describes the relationship between; say the lowest category (poor) versus all higher categories of the response variable and is the same as the coefficient describing relationship between the next lowest category and all higher categories. The parameters in the model can be estimated using maximum likelihood estimation method. The final ordinal logit model can be evaluated using the difference in log likelihood between the null and the estimated model or Akaike information criterion approach. The interpretation of the estimated coefficient is as follows: As $x$ increases, for $b>0$ the response on $n_w$ is more likely to fall at the lower end of the ordinal scale and for $b<0$ the response on $n_w$ is more likely to fall at the higher end of the ordinal scale.

**3 Empirical Results and Discussion**

*3.1 Descriptive Statistics*

Table 1 presents the satisfaction levels of student ratings for the overall service quality. From the survey, it is very clear that the structured questionnaire bothered on services rendered to students of Kumasi Polytechnic in areas such as teaching & learning, conditions of academic facilities and industrial attachment. Most respondents disagree to the affordability of the academic user fee and private hostel accommodation and rated 44.3% and 58.2% respectively. More so, campus internet reliability and adequate lecture hall chairs with desk rated by students in disagreement with 51.7% and 41.7%. It is evident from the results that cost of funding HND education and for that matter tertiary education still remains a challenge to a significant number of tertiary students. Irrespective of the government support to students by way of SSNIT loans, students still are faced with financial difficulties. A reliable internet access and provision of adequate lecture hall chairs with desk in a comfortable environment is a necessary but vital tool for improving quality education.

The survey also revealed that students agreed to the fact that accommodation on campus and one provided by Getfund is very secured and affordable and rated 65.2%, 44.7% and 43.4%, 61.0% respectively as compared to private student hostel accommodation. In Table 1, respondents disagreed with the notion that private students' hostel accommodation is secured and affordable with a 43.2% and 58.2% rating. High frequency of theft rate on campus was rated 36.9% by respondents. Insecurity on campus may lead to uneasiness and fear of being attacked which undermine academic work.

Student academic performance can be affected if they are not offered the preferred programme. This leads to poor performance in most cases and in rare cases to drop out of school. About 60% of respondents agreed that their current programme of study is indeed their preferred choice.

In relation to internal communication, two out of every five respondents (40.5%) agreed that obtaining official documents from the Registry was cumbersome and as many as 47.9% supported the notion that communication between students and the various sections of the polytechnic often delayed.

Industrial attachment remains the very foundation on which the HND education strives. This academic process is common to vocational & technical training as it merges practical training and theoretical knowledge. More so, the daily schedule of teaching and examination sometimes has adverse influence on student academic performance. Overload of teaching and examination does put much pressure on students and if not checked will result in poor academic performance of students. From the survey, it was evident that respondents rated the contribution of industrial attachment to academic programme enhancement and to programme related job experience as 55.7% and 59.6% respectively.

 

*3.2 Ordinal Logistic Regression Model Assumptions*

For our ordinal regression model to hold, we need to ensure that the assumption of parallel lines of all levels of the categorical data is satisfied since the model does not assume normality and constant variance (Bender and Benner, 2000).

Unlike linear regression where the following assumptions need not be violated: linear relationship between the dependent and independent variables, independent of residuals, normality of residuals and lastly constant variance (homoscedacity), in the case of logistic regression, that is not the case.

Logistic regression does not assume linear relationship between the dependent and independent variables, the dependent variables do not need to be normally distributed, there is no homogeneity of variance assumption, in other words, the variances do not have to be the same within categories, normally distributed error terms are not assumed and the independent variables do not have to be interval or unbounded (Wright, 1995).

The very key assumption of this model is the assumption of parallel lines across all levels -of the outcome. When the measurement scale of the response variables is ordered (for example, excellent, good, satisfactory, poor), the ordinal logistic model is a preferred best model.

The Model Fitting Information and Test of Parallel Lines are the two main statistics applied in this paper to check the suitability of the respective ordinal logit models. A p-value less than or equal to 5% satisfies the overall model fit whereas a p-value more than 5% satisfies the Test of Parallel Lines.

**3.3 Perceptions towards the quality of HND Education**

The logit ordinal model was used to select risk factors affecting the cardinal issues affecting HND education described in this paper.

Industrial attachment is the main foundation upon which the technical and vocational education strides. Students are exposed to the real industrial exposition to augment the theoretical understanding of what is learnt at the lecture hall. Failure to ensure a strict supervision of the industrial attachment will not only undermine the very purpose of establishing the HND education but will contribute to its inefficiency. From the results, in Table 2a, it is evident from the fitted ordinal logit model, that students who disagree with teaching and learning facilities being in good condition at Kumasi Polytechnic are 56.9% less likely to rate the overall general supervision of industrial attachment in a higher category (i.e. excellent instead of very good or good or satisfactory or poor) than students who agree to teaching and learning facilities (very good). Similarly, students who disagree and are neutral with the reliability of campus internet access are 45.3% and 47.4% less likely to rate the overall general supervision of industrial attachment in a higher category (i.e. excellent instead of very good or good or satisfactory or poor) than students who agree to campus internet access is reliable respectively. Again, students who disagree and are neutral with often delayed communication between the polytechnic as an institution and the student body as a whole are 68.4% and 50.5% more likely to rate the overall general supervision of industrial attachment in a higher category (i.e. excellent instead of very good or good or satisfactory or poor) than students who agree to campus internet access is reliable respectively. The effect of faculty on to overall industrial attachment rating was studied. It was evident that students from Business and Engineering faculties rated the overall industrial attachment 4 and 6 times higher respectively compared to all the other faculties. More so, students who disagree and are neutral to private hostel accommodation (secured) assertion are 54.2% and 32.2% less likely to rate the overall general supervision of industrial attachment in a higher category (i.e. excellent).

Provision of logistic in enhancing vocational, technical and theoretical studies plays a vital role in HND education. The practical nature of vocational and technical education calls for not only ensuring standard practices and procedures at the workshop, laboratory but also facility management. The procurement, maintenance, distribution, and replacement of personnel and material needs should not be overlooked else it undermines the technical and vocational education at the tertiary level. From Table 3a, students who disagree with campus internet access(reliable) are 48.7% less likely to rate provision of logistics as tool in enhancing vocational, technical and theoretical studies in a higher category(i.e. strongly agree) than students who agree to library programme related materials(adequate). With respect to lecture hall chairs with desk, students who disagree with it are 40.9% less likely to rate the provision of logistics as the fulcrum of enhancing technical education in a higher category. On the part of library programme related materials (adequate), students who disagree and are neutral are 34.4% and 41.3% less likely to rate institutional provision of logistics in a higher category than students who agree to the adequacy of library programme related materials respectively.

 

The last significant variable is the marital status and students who are single are 13 times more likely to rate the provision of logistic in enhancing tertiary technical education in a higher category.

Suitability of HND qualification to fill the middle level manpower gab need not be a hoax but seen to manifest in building the economy and investing in the youth by way of equipping them with the technical and vocational skills. Higher education is considered by the U.K Government to be the most important phase in terms of achieving economic growth (Department of Education and Skills, 2003). With the needed resources and support, students in polytechnic are more likely to receive a first rate education. Consequently, it will not only be students that will benefit in terms of their own personal growth and development because they will also be able to contribute to the country's economic and social prosperity. From Table 4a, the fitted ordinal logit model shows that students who are neutral about affordability of fees are 42% less likely to rate the suitability of the HND qualification to fill the middle level manpower gap of the economy in a higher category than students who agree with fees affordability. Similarly, students who disagree and are neutral about the current programme of study being their preferred choice are 43% and 35% less likely to rate the suitability of the HND qualification to fill the middle level manpower gap of the economy in a higher category than students who agree to the suitability of the HND qualification to fill the middle level man power gab of the Ghanaian economy.

Access to preferred programme of study at the tertiary level shouldn't be compromised under any circumstance. This phenomenon in a way can affect social and academic performance of students. In rare cases student who find themselves in this category drop out of tertiary education. On access to programme of choice, students who disagree about campus accommodation being affordable as in Table 5a, are 33% more likely to rate the provision for a programme of choice as compared to other institutions in Ghana in a higher category than students who agree to it. With reference to frequency in assessing lecturers, students who were of neutral opinion are 76% more likely to rate provision of a programme of choice as compared to other institutions in Ghana in a higher category than students who agree to provision for a programme of choice. More so, students who disagree and are neutral about their current programme of study being their preferred choice are 93% and 78% more likely to rate access to a programme of choice in a higher category than students who agree to the provision of a programme of choice as compared to other institutions in Ghana. Lastly, students in the Business faculty rated the provision of a programme of choice comparable to other institutions in Ghana 6 times lower compared to those in the other faculties.

**4 Conclusions**

The very problems which have been confronting tertiary technical and vocation education in Ghana seem not to be over. Evidence from our results so far do not only support this assertion but rather complement challenges facing HND education up to date. Cost of accommodation for tertiary students still remains a problem, more particularly the private accommodation. Affordability and the secured nature of GetFund and on-campus accommodation were rated high by the students. Also students were of the view that their current programme of study is indeed their preferred choice. Students supported the polytechnic mechanism which provides regular assessment of lecturers and guidance and counseling services. Again majority of students agreed that the contribution of industrial attachment to programme related first hand experience and academic programme enhancement is very high encouraging.

On the contrary, private hostel accommodation and access to reliable internet on campus still remains a burden to students. From the results, students unanimously confirm the overload of daily schedule of teaching and examination. Access to official documents from the registry and communication between students and authorities of the polytechnic in the students view is not encouraging. Similarly, lecture hall chairs with desks according to students is woefully inadequate and hence making the learning environment very uncomfortable.

However, students were of neutral opinion with respect to theft rate on campus, friendly learning environment and teaching and learning facilities respectively. Notwithstanding the public perception of the HND education in Ghana, the polytechnic institutions must as a matter of urgency improve upon its academic facilities, administrative services and residential facilities to avert the many public lashing.

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**Table 1: Student's Satisfaction Level with Service Component**

| Service Component | Satisfaction Level (%) | | |
|---|---|---|---|
| | **Disagree** | **Neutral** | **Agree** |
| Fees (affordable) | **44.3** | 24 | 28.1 |
| Learning environment (very friendly) | 30.4 | 28.8 | **36.3** |
| Teaching and learning facilities (very good) | 30.1 | 26.7 | **36.1** |
| Library programme related reading materials (adequate) | 28.6 | 26.3 | **39.0** |
| Guidance and counseling services (beneficial) | 25.2 | 28.6 | **40.1** |
| Private hostel accommodation (affordable) | **58.2** | 18.4 | 17.5 |
| Private hostel accommodation (secured) | **43.2** | 26.8 | 23.0 |
| Getfund accommodation (affordable) | 14.2 | 17.7 | **61.0** |
| Getfund accommodation (secured) | 21.9 | 27.7 | **43.4** |
| Campus accommodation (affordable) | 26.0 | 22.0 | **44.7** |
| Campus accommodation (secured) | 11.5 | 15.7 | **65.2** |
| Assessment of lecturers (regular) | 21.2 | 24.3 | **44.9** |
| Campus internet access (reliable) | **51.7** | 19.8 | 21.6 |
| Theft rate on campus (rampant) | 29.1 | 26.6 | **36.9** |
| Lecture hall chairs and desks (adequate) | **41.7** | 19.0 | 31.8 |
| Current programme of study is my (personal preferred choice) | 17.3 | 16.6 | **60.0** |
| National service personnel teaching HND class is (acceptable) | 30.7 | 26.5 | **37.8** |
| National service personnel teaching HND class is (very beneficial) | 27.6 | 30.2 | **36.7** |
| Obtaining official document from the registry is (cumbersome) | 18.8 | 34.6 | **40.5** |
| Comm. b/n stds and various sections of the Polytechnic is (often delayed) | 18.9 | 28.2 | **47.9** |
| Industrial attachment to academic prog enhancement is (very high) | 16.2 | 21.8 | **55.7** |
| Industrial attachment to prog. related job experience is (very high) | 13.9 | 21.0 | **59.6** |
| Daily schedule of examinations, some prog. are (overloaded) | 13.0 | 16.8 | **65.5** |
| In the daily schedule of teaching, some prog. are (overloaded) | 17.316.6 | 18.3 | **61.1** |

 

**Table 2a: Overall Supervision of Industrial Attachment by Respondents**

| Overall Supervision of Industrial Attachment | | | | |
|---|---|---|---|---|
| | Estimates | Std error | p - value | OR |
| Threshold Scale (Poor) - 1 | -2.949 | 0.256 | 0.000 | |
| Scale (Satisfactory) - 2 | -1.846 | 0.241 | 0.000 | |
| Scale (Good) - 3 | -0.583 | 0.234 | 0.013 | |
| Scale (Very good) - 4 | 0.689 | 0.234 | 0.003 | 1.992 |
| Location | | | | |
| Teaching and learning facilities (very good) - 1* | -0.841 | 0.163 | 0.000 | 0.431 |
| Teaching and learning facilities (very good) - 2** | -0.222 | 0.16 | 0.165 | 0.801 |
| Teaching and learning facilities (very good) - 3*** | | | | |
| Campus internet access (reliable) - 1* | -0.603 | 0.164 | 0.000 | 0.547 |
| Campus internet access (reliable) - 2** | -0.643 | 0.196 | 0.001 | 0.526 |
| Campus internet access (reliable) - 3*** | | | | |
| Polytechnic communication to stds (often delayed) - 1* | 0.521 | 0.175 | 0.003 | 1.684 |
| Polytechnic communication to stds (often delayed) - 2** | 0.409 | 0.151 | 0.007 | 1.505 |
| Polytechnic communication to stds (often delayed) - 3*** | | | | |
| Faculty (business) - 1 | 0.375 | 0.172 | 0.029 | 1.455 |
| Faculty (engineering) - 2 | 0.523 | 0.175 | 0.003 | 1.687 |
| Faculty (all others) - 3 | | | | |
| Private hostel accommodation (secured) - 1* | -0.61 | 0.161 | 0.000 | 0.543 |
| Private hostel accommodation (secured) - 2** | -0.388 | 0.176 | 0.028 | 0.678 |
| Private hostel accommodation (secured) - 3*** | | | | |

***agree ** neutral *disagree

**Table 2b: Model Fitting Information**

| Model | - 2 Log Likelihood | Chi-Square | df | p-value |
|---|---|---|---|---|
| Intercept Only | 1372.103 | | | |
| Final | 1282.879 | 89.224 | 10 | 0 |

**Table 2c: Test of Parallel Lines**

| Model | - 2 Log Likelihood | Chi-Square | df | p-value |
|---|---|---|---|---|
| Null Hypothesis | 1282.879 | | | |
| General | 1243.543 | 39.336 | 30 | 0.118 |

 

**Table 3a: Provision of Logistics in Enhancing Polytechnic Education at Kumasi Polytechnic**

| Provision of Logistics in Enhancing Vocational, Technical & Theoretical Studies | | | | |
|---|---|---|---|---|
| | Estimates | Std error | p - value | OR |
| Threshold Scale (Strongly disagree) - 1 | -3.284 | 0.366 | 0.000 | |
| Scale (Disagree) - 2 | -1.6254 | 0.340 | 0.000 | |
| Scale (Neutral) - 3 | -0.666 | 0.337 | 0.048 | |
| Scale (Agree) - 4 | 1.146 | 0.337 | 0.001 | 3.146 |
| Location | | | | |
| Campus internet access (reliable) - 1* | -0.667 | 0.170 | 0.000 | 0.513 |
| Campus internet access (reliable) - 2** | -0.354 | 0.202 | 0.079 | 0.702 |
| Campus internet access (reliable) - 3*** | | | | |
| Lecture hall chairs with desk (adequate) - 1* | -0.526 | 0.156 | 0.001 | 0.591 |
| Lecture hall chairs with desk (adequate) - 2** | -0.272 | 0.188 | 0.148 | 0.762 |
| Lecture hall chairs with desk (adequate) - 3*** | | | | |
| Private hostel accommodation (secured) - 1* | -0.201 | 0.165 | 0.221 | 0.818 |
| Private hostel accommodation (secured) - 2** | -0.092 | 0.178 | 0.605 | 0.912 |
| Private hostel accommodation (secured) - 3*** | | | | |
| Library programme related reading material (adequate) - 1* | -0.422 | 0.161 | 0.009 | 0.656 |
| Library programme related reading material (adequate) - 2** | -0.532 | 0.161 | 0.001 | 0.587 |
| Library programme related reading material (adequate) - 3*** | | | | |
| Marital status (single) - 1 | 0.833 | 0.255 | 0.001 | 2.3 |
| Marital status (all others) - 2 | | | | |
| Qualification for HND admission (WASSCE PLUS PRIVATE) - 1 | 0.300 | 0.193 | 0.121 | 1.349 |
| Qualification for HND admission (SSSCE PLUS PRIVATE) - 2 | 0.295 | 0.259 | 0.254 | 1.343 |
| Qualification for HND admission (all others) - 3 | | | | |

***agree ** neutral *disagree

**Table 3b: Model Fitting Information**

| Model | - 2 Log Likelihood | Chi-Square | df | p-value |
|---|---|---|---|---|
| Intercept Only | 1252.124 | | | |
| Final | 1176.991 | 75.133 | 11 | 0.000 |

**Table 3c: Test of Parallel Lines**

| Model | - 2 Log Likelihood | Chi-Square | df | p-value |
|---|---|---|---|---|
| Null Hypothesis | 1176.991 | | | |
| General | 1134.132 | 42.859 | 33 | 0.117 |

 

**Table 4a: Suitability of the HND Qualification**

| Suitability of the HND Qualification to fill the Middle Level Manpower Gab of the Economy | | | | |
|---|---|---|---|---|
| | Estimates | Std error | p - value | OR |
| Threshold Scale (Strongly disagree) - 1 | -5.105 | 0.349 | 0.000 | |
| Scale (Disagree) - 2 | -3.688 | 0.244 | 0.000 | |
| Scale (Neutral) - 3 | -2.282 | 0.207 | 0.000 | |
| Scale (Agree) - 4 | -0.43 | 0.19 | 0.024 | 0.65 |
| Location | | | | |
| Teaching and learning facilities (very good) - 1* | -0.306 | 0.182 | 0.092 | |
| Teaching and learning facilities (very good) - 2** | -0.334 | 0.177 | 0.060 | 0.72 |
| Teaching and learning facilities (very good) - 3*** | | | | |
| Learning environment (very friendly) - 1* | -0.033 | 0.184 | 0.858 | |
| Learning environment (very friendly) - 2** | -0.261 | 0.173 | 0.131 | 0.77 |
| Learning environment (very friendly) - 3*** | | | | |
| Obtaining official document from the registry (cumbersome) - 1* | 0.121 | 0.187 | 0.547 | |
| Obtaining official document from the registry (cumbersome) - 2** | -0.116 | 0.153 | 0.448 | 0.89 |
| Obtaining official document from the registry (cumbersome) - 3** | | | | |
| Fees (affordable) - 1* | -0.272 | 0.166 | 0.101 | |
| Fees (affordable) - 2** | -0.546 | 0.186 | 0.003 | 0.58 |
| Fees (affordable) - 3*** | | | | |
| Private hostel accommodation (secured) - 1* | -0.131 | 0.17 | 0.441 | |
| Private hostel accommodation (secured) - 2** | -0.23 | 0.187 | 0.233 | 0.8 |
| Private hostel accommodation (secured) - 3*** | | | | |
| HND class taught by HND National Service Personnel (acceptable) - 1* | 0.102 | 0.165 | 0.573 | |
| HND class taught by HND National Service Personnel (acceptable) - 2** | 0.041 | 0.175 | 0.810 | 1.04 |
| HND class taught by HND National Service Personnel (acceptable) - 3*** | | | | |
| Current programme of study (preferred choice) - 1* | -0.568 | 0.184 | 0.002 | |
| Current programme of study (preferred choice) - 2** | -0.438 | 0.183 | 0.017 | 0.65 |
| Current programme of study (preferred choice) - 3*** | | | | |

***agree ** neutral *disagree

**Table 4b: Model Fitting Information**

| Model | - 2 Log Likelihood | Chi-Square | df | p-value |
|---|---|---|---|---|
| Intercept Only | 1578.974 | | | |
| Final | 1536.6 | 42.374 | 14 | 0 |

**Table 4c: Test of Parallel Lines**

| Model | - 2 Log Likelihood | Chi-Square | df | p-value |
|---|---|---|---|---|
| Null Hypothesis | 1536.6 | | | |
| General | 1481.473 | 55.126 | 42 | 0.084 |

 

**Table 5a: Provision of a Programme of Choice**

| Provision of a Programme of Choice as Compared to other Institutions in Ghana | | | | |
|---|---|---|---|---|
| | Estimates | Std error | p - value | OR |
| Threshold Scale (Strongly disagree) - 1 | 0.473 | 0.202 | 0.019 | |
| Scale (Disagree) - 2 | 2.211 | 0.218 | 0.000 | |
| Scale (Neutral) - 3 | 3.894 | 0.28 | 0.000 | |
| Scale (Agree) - 4 | 4.606 | 0.342 | 0.000 | 100.080 |
| Location | | | | |
| Campus accommodation (affordable) - 1* | 0.331 | 0.167 | 0.047 | |
| Campus accommodation (affordable) - 2** | 0.289 | 0.173 | 0.095 | 1.385 |
| Campus accommodation (affordable) - 3*** | | | | |
| Assessment of lecturers (frequent) - 1* | 0.017 | 0.176 | 0.922 | |
| Assessment of lecturers (frequent) - 2** | 0.564 | 0.168 | 0.001 | 1.757 |
| Assessment of lecturers (frequent) - 3*** | | | | |
| Current programme of study (preferred choice) - 1* | 0.657 | 0.184 | 0.000 | |
| Current programme of study (preferred choice) - 2** | 0.575 | 0.181 | 0.001 | 1.777 |
| Current programme of study (preferred choice) - 3*** | | | | |
| Faculty (business) - 1 | -0.495 | 0.182 | 0.006 | |
| Faculty (engineering) - 2 | -0.093 | 0.182 | 0.610 | 0.911 |
| Faculty (all others) - 3 | | | | |
| GPA (0 - 2.99) - 1 | 0.094 | 0.14 | 0.501 | 1.099 |
| GPA (3.00 - 5.00) - 2 | | | | |

***agree ** neutral *disagree

**Table 5b: Model Fitting Information**

| Model | - 2 Log Likelihood | Chi-Square | df | p-value |
|---|---|---|---|---|
| Intercept Only | 856.689 | | | |
| Final | 797.842 | 58.847 | 9 | 0 |

**Table 5c: Test of Parallel Lines**

| Model | - 2 Log Likelihood | Chi-Square | df | p-value |
|---|---|---|---|---|
| Null Hypothesis | 797.842 | | | |
| General | 775.881 | 21.961 | 27 | 0.739 |