UNIVERSITY OF CAPE COAST

FACTOR ANALYSIS OF APPLICANTS' CHOICE OF CAPE COAST POLYTECHNIC

BY

BENJAMIN CHRIS AMPIMAH

A Dissertation Submitted to the Department of Mathematics and Statistics of the School of Physical Sciences, Faculty of Science, University of Cape Coast in Partial Fulfillment of the Requirements for the Award of Master of Science Degree in Statistics.

OCTOBER 2007

DECLARATION

CANDIDATE'S DECLARATION

I hereby declare that this dissertation is the result of my own original research and that no part of it has been presented for another degree in this University or elsewhere.

Candidate's signature: ....

Candidate's name: BENJAMIN CHRIS AMPIMAH

Date: 18 – 10 – 2007

SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this dissertation were supervised in accordance with the guidelines on supervision of dissertations laid down by the University of Cape Coast, Ghana.

Supervisor's signature: ....

Supervisor's name: FRANCIS EYIAH-BEDIAKO

Date: 18/10/07

ABSTRACT

It is of great interest and concern to human beings to know why we do what we do in every sphere of life. Of particular interest is education because, it is a key factor in the developmental process or, in the affairs of every developing nation of which Ghana is one and that is what motivated the researcher into finding out the issues Cape Coast Polytechnic students consider in choosing to study at the Cape Coast Polytechnic.

Purposive sampling technique was used to select the students and questionnaires were administered to them to solicit their responses. Some of the students were contacted on campus and others in their private hostels. The main multivariate technique employed in the analysis is factor analysis.

Among the interesting factors that Cape Coast Polytechnic students consider in choosing to study at the school, a conducive environment or atmosphere was realized to be their utmost concern, then the physical attraction of Cape Coast.

ACKNOWLEDGEMENTS

I would like to thank my supervisor, Mr. Francis Eyiah Bediako, for contributions and constructive criticisms in fine tuning this research work. I also owe a profound gratitude to Prof. B. K. Gordor and Mr. B. K. Nkansah, all of Department of Mathematics and Statistics for their contributions and suggestions. Also, I wish to thank Dr. Mrs. N. Mensah, Head, Department of Mathematics and Statistics for her encouragement and support.

I wish to thank my course mate Mr. Joseph Dadzie for encouraging me to enroll for this programme for which I have never regretted for doing so. My thanks also go to Mr. Theodore Oduro-Okyireh, my office colleague for his support of relevant course materials.

My appreciation goes to my students at Cape Coast Polytechnic, Dorcas Adane Yeboah, Elizabeth Seibu, Evans Michael Kpordedzi, Jackson Cobbinah and Rita Adjei and others for the immense role they played in the administering of the questionnaires, coding and the data entry.

I cannot forget my Head of Department Statistics, Mr. Henry Blankson, for his understanding and support of stationery for my printing.

Above all I wish to express my sincere gratitude to my dear wife Bernice Bimpeh Ampimah for her wonderful support financially, emotionally and spiritually throughout the programme. To her parents I say thank you, for always being there for me.

DEDICATION

This work is dedicated to my family and my parents.

TABLE OF CONTENTS

Contents Page

Page

CHAPTER TWO METHODOLOGY

CHAPTER THREE PRELIMINARY ANALYSIS

CHAPTER FOUR FURTHER ANALYSIS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

BACKGROUND TO THE STUDY

Life presents humans with varying opportunities both essential and non-essential, and the ability to choose correctly means a lot to every individual since doing otherwise, sometimes may result in devastating consequences.

In the field of education, a student's inability to choose correctly either to read Science, General Arts, Visual Arts, Business Studies, Vocational Skills or Technical Skills may result in poor performance, re-sits and some cases school dropout. Choice is an essential component of life and has a great influence on the output of an individual. In making a choice, a number of considerations are made and it is upon such considerations that one takes a decision to choose.

Students who have completed SSS are faced with varying opportunities of tertiary education in the universities, polytechnics, training colleges, professional institutions and others. To decide on one of these tertiary institutions results from careful considerations like aggregate, finance, programme, and others just to mention a few. Central region being an educational centre is endowed with several Senior Secondary Schools, 2

Universities, a Polytechnic, Training Colleges Vocational and Technical Institutions as well as Business and Secretarial Institutions.

To decide on polytechnic education, the prospective candidate considers a number of issues or factors. Students who settle on polytechnic education are also faced with a number of options since the nation's 10 polytechnics located in the 10 administrative regions of Ghana run a few similar programmes and mostly varying programmes. Some of the polytechnics are traditional (old) with developed infrastructure, whereas others are technical schools converted to polytechnic or newly established ones with limited infrastructure. Cape Coast Polytechnic is one of the non-traditional polytechnics. Students intake for some programmes at the Cape Coast Polytechnic are very encouraging such as Marketing, Accountancy, Secretaryship and Management Studies, and Tourism whereas programmes such as Statistics, Building Technology and Civil Engineering and Hotel, Catering and Institutional Management (HCIM) have very low number of students.

It is as a result of this great disparity that motivated this research to find out what actually attract students to Cape Coast Polytechnic. All the polytechnics are finding ways to attract more students. As a result some have introduced part-time HND programmes and pre-HND programmes to assist workers who cannot leave their jobs for full-time and also people whose aggregate exceed the required by 1 or 2.

It is very essential to know these factors since this information can help the Management of Cape Coast Polytechnic to know which areas the school has to maintain to attract prospective students. It will help know where the school lacks as a result of which students are not motivated so that they make conscious effort to improve.

BRIEF HISTORY OF CAPE COAST POLYTECHNIC

The Cape Coast Polytechnic was established in 1984 and became operative as such in 1986. It also gained its full tertiary status in 1993 to offer Higher National Diploma programmes in diverse fields of study. Unlike some of her sister institutions which transformed into polytechnics from Technical institutes, with the benefits of carried over infrastructure and other facilities, and staff to begin with, the Cape Coast Polytechnic had to contend with tackling most issues afresh. That has posed some peculiar problems in the developmental effort of the institution.

The initial problems notwithstanding, the Polytechnic, has come a long way in fulfilling its mission of training middle level manpower to man the various aspects of the nation's economy.

Beginning with less than 300 students in 1984 with only few teaching programmes in Accounting and Secretarial, the Polytechnic now has nearly 4000 students spanning the disciplines of Business, Engineering, Hotel Catering and Institutional Management, Fashion, and Applied Sciences and Arts.

The relative expansion in student population, teaching programmes and infrastructure projects are all healthy indications that the Cape Coast Polytechnic is taking its rightful place in fulfilling the objectives set out in the (P.N.D.C. Law 321) and establishing it as a tertiary institution alongside others.

Currently the institution has eleven academic departments and has had four graduation ceremonies for its graduates with the most recent being on 25th November, 2006.

OBJECTIVES OF THE STUDY

1. The main objective of the research is to identify the factors that attract prospective polytechnic students to choose Cape Coast Polytechnic for polytechnic education.
2. Also to relay the findings of the research to the management of Cape Coast Polytechnic to help them make informed decisions in finding ways to increase the students' population or intake.

RESEARCH QUESTIONS

The research sought to address the following:

1. Find the reasons or factors considered for choosing Cape Coast Polytechnic by students.
2. Find which factors do not actually attract prospective students to Cape Coast Polytechnic.

LITERATURE REVIEW

Deciding on furthering one's education depends on a number of factors that come into play such as economic, social, proximity and necessity just to mention a few.

According to Choy and Ottinger (1998) the following reasons were observed as the factors that influenced first time students' choice of an institution for post/ secondary institution and/ or programme. They reported that, these factors are in two (2) groups, namely institutional characteristics and student characteristics. Cost, distance from home, availability of financial aid and selectivity are institutional factors; whereas gender, race-ethnicity, parental education and preference, income, religion and academic ability are student's consideration. Their report revealed that, important factors that first time students consider when choosing an institution for post/ secondary education include reputation of the school, its location, price or fees and living expenses and influence from relations. Highlighted among their study findings are the following: beginning students at both public and private, not-for-profit four-year institutions were more likely to cite reputation as the most important reason for choosing their institution; students at public four-year institutions were more likely than students at private, not-for-profit four-year institutions to identify location or price as the most important reason for their choice; and beginning students at public two-year institutions reported location as the most important reason for choosing their institutions. These characteristics such as cost, availability of financial aid and distance from home exists in our Ghanaian setting today.

In life, management is key and for one to manage his or her own life successfully depends on the individual's ability to think and make decisions effectively as stated by Murdock (1997). He said effective thinking and decision-making involves three major sets of behaviours commencing with one's ability in ***analysing***: When analyzing, one breaks down situations into simple tests and activities, and then identifies a range of elements in and perspectives on a situation. He or she identifies implications, consequences or casual relationships in a situation and uses a range of ideas to explain the actions, needs and motives of others.

The second behavioural set focuses on the individual's need for ***conceptualising*** in order to make decisions. In this process, one uses one's own experience and evidence from others to identify problems and understand situations. Then one identifies patterns or meaning from events and data which are not obviously related, and builds a total and valid picture (or concept) from restricted or incomplete data (which happens to be most of the time).

The third set of behaviour addresses an individual's ***Judgement and decision-making*** abilities. When forming judgements and making decisions, the individual produces a variety of solutions before taking a decision, balances intuition with logic in decision making and reconciles and makes use of a variety of perspectives when making sense of a situation.

He or she then produces one's own ideas from experience practice, takes the experience and practice of others into account and takes decisions which are realistic for the situation. Next the individual focuses on facts, problem, and solutions when handling an emotional situation (not personalities) and takes decisions in uncertain situations, or based on restricted information when necessary

He was also of the view that, thinking, or concentrating with oneself, is something we naturally do more unconsciously than consciously. It is such an automatic process that unless we have become aware and educate ourselves accordingly, much of our thinking can be wasted. It is the purest form of 'communicating' and does not necessarily involve language. If we are thinking in a structured way, we undoubtedly use our mother-language in order to proceed logically in our thinking. When unstructured thoughts come to us, they can be in the form of pictures, symbols, even quite complicated conundrums at times. We frequently ignore or dismiss them as irrelevant to our present need.

There are times when our random unstructured thinking is of extreme value; hence the gaining credibility of 'brainstorming' exercises. It is not so easy to brainstorm as some people may believe. We are all concerned, in one way or another, about our individual abilities to do what is right, our credibility in the eyes of others, fear of looking stupid and so on.

We should learn to trust our thinking more and share random thoughts with others in the workplace. It is a wonderful way of gaining trust and support, because this is a means of refining and developing ideas and issues; allowing the contribution of others to influence our values, beliefs and behaviour. Our own self-guilt often prevents our development of good thinking and communicating with ourselves. This view of Murdock is always at play in the life of prospective student who want to further their education in a tertiary institution.

DATA COLLECTION

The data was taken from Cape Coast Polytechnic. The target population was Cape Coast Polytechnic students and the study population was the HND students of the Polytechnic. Cape Coast Polytechnic is located at Eyifuah (a suburb of Cape Coast) behind the Ghana National Association of Teachers' (GNAT) guest house, a branch road off the Abura-Esuekyir main road. The polytechnic has eleven departments which are categorized into three schools namely Engineering, Applied Sciences and Arts, and Business and Management Studies. The school is predominantly business oriented due to the high number of students in the school of business comprising about half of the students population if not more. The School of Engineering and the School of Applied Sciences and Arts form the remaining percentage of the HND student body.

STRUCTURE AND SITUATION OF CAPE COAST POLYTECHNIC

The map in Figure 1 gives direction to Cape Coast Polytechnic from either Accra or Takoradi. At Pedu junction in Cape Coast, turn and follow the Pedu-Abura- Esuekyir road. Turn right at Eyifuah junction and follow the root to Cape Coast Polytechnic campus where data was collected for analysis.

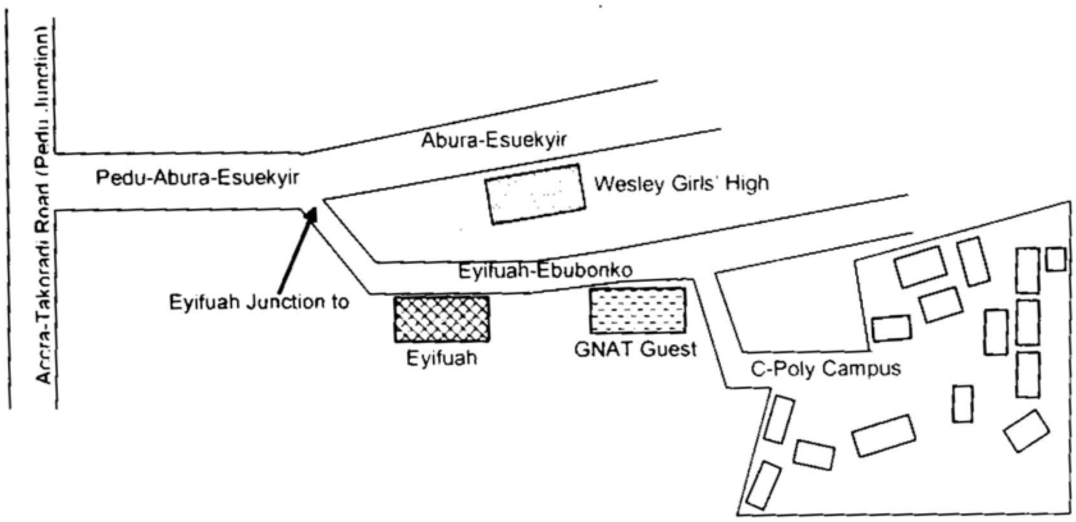


Figure 1: Map showing direction to Cape Coast Polytechnic

SAMPLING STRATEGY AND TECHNIQUES

Purposive sampling procedure was used in collecting the data for this research work. This method was used due to the fact that, the research aimed at finding the views of HND students in the Cape Coast Polytechnic irrespective of the department and school they belong to. Three hundred and seventeen students were sampled, of which one hundred and sixty-five were first year students, eighty-three were second year students and the remaining being third year students. The first year students were more than others because they are freshmen and women in the school and for clarity of thought, they were given the greater chance of giving their views since they have not spent that much time in the school and their considerations for coming to the Cape Coast is greatly unaffected. The students were selected in a way to balance the number of male students and female students' representation in the sample.

Questionnaire was designed and administered to students on a personal interview basis to solicit high rate of response. The first part of the questionnaire had five closed ended questions. The second part of questionnaire has a table with fourteen questions on the reasons that influenced prospective polytechnic student's choice of Cape Coast Polytechnic using a five point Likert scale: namely Strongly Agree (1), Agree (2), Do not Mind (3), Disagree (4) and Strong Disagree (5). The fourteen indicator variables are as follows:

R_1 Has lucrative academic programmes

R_2 Cost of living relatively cheaper

R_3 Tourist attraction in Cape Coast

R_4 Enjoy family ties

R_5 Meet old friends

R_6 Exposure to new environment

R_7 Has more conducive learning atmosphere

R_8 Excelling graduates from Cape Coast Polytechnic

R_9 Enjoy education in the Central Region

R_{10} Has attachments to industries

R_{11} Proximity – close to my place of work / home

R_{12} Convenience

R_{13} Was introduced by a friend/ relative etc

R_{14} Accommodation cheaper in the C-Poly

The statistical softwares used in this research work were Minitab (version 14) and SPSS (version 11). Office applications used were Microsoft Word and Microsoft Excel (version 2003)

OUTLINE OF THE DISSERTATION

The dissertation is organized into five main chapters. Chapters One, which is the introductory chapter discusses the background and the objectives of the study. It also deals with where and how the data was collected. In Chapter Two, relevant basic theories and methods such factor analysis and factor rotation are reviewed. Chapters Three and Four dwell on the main analysis of the data. Chapter Three is the preliminary analysis which is correlation analysis, eigen-value analysis and summary of the basic statistics. Chapter Four deals with further analysis where theories and methods reviewed in Chapter Two are used.

The fifth chapter is the outline and a detail discussion of the results obtained from the preliminary and further analysis in Chapters Three and Four. This last chapter is where the summary and conclusions drawn from the results in Chapters Three and Four as well as recommendations are provided.

CHAPTER TWO

METHODOLOGY

Descriptive statistics and exploratory data analysis techniques are used extensively in the preliminary analysis of the data which involves histograms, and summary statistics. This was done to show the basic features and patterns in the data taken to enable further investigation to proceed to confirm them or otherwise.

Factor analysis technique is used in the further analysis of the data. This is because it is impossible or incorrect to delineate one set of variables as independent and another set as dependent. This leads to the situation where the analysis is focused on understanding or identifying why and how the variables are correlated among themselves. Factor analysis was selected because we want to establish from the list of correlated variables, a few underlying factors responsible for the correlation. In this case, the variables are regrouped into a few uncorrelated factors so that, variables in the same group are highly correlated than variables from different groups.

FACTOR ANALYSIS

Factor analysis is a general name denoting a class of procedures primarily used for data reduction and summarization. The essential purpose of factor analysis is to describe, if possible, the covariance relationships among many variables in terms of a few underlying, but unobservable, random quantities called factors. Basically, the factor model is motivated by the following argument. Suppose variables can be grouped by their correlations. That is, all variables within a particular group are highly correlated among themselves but have relatively small correlations with variables in a different group. It is conceivable that each group of variables represents a single underlying construct or factor that is responsible for the observed correlations. For example, correlation from the group of test scores in Classics, French, English, Mathematics and Music collected by Spearman suggested an underlying "intelligence" factor. A second group of variables, representing physical-fitness scores, if available, might correspond to another factor. It is this type of structure that factor analysis seeks to confirm.

Factor analysis can be considered as an extension of principal component analysis. Both can be viewed as attempts to approximate the covariance matrix, $\sum$. However, the approximation based on the factor analysis model is more elaborate. The primary question in factor analysis is whether the data are consistent with prescribed structure.

Objectives of Factor Analysis

This method of data reduction technique was used to achieve the following objectives:

1. Identify the smallest number of common factors (that is, the most parsimonious factor model) that best explain or account for the correlations among the indicators.

2. Identify, via factor rotations, the most plausible factor solution.
3. Estimate the pattern and structure loadings, communalities, and the unique variances of the indicators.
4. Provide an interpretation for the common factors.
5. If necessary, estimate the factor scores.

CONDUCTING FACTOR ANALYSIS

The steps involved in conducting factor analysis are as follows. The first step is to define the factor analysis problem and identify the variables to be analysed. Then a correlation matrix of these variables is constructed and a method of factor analysis selected. A decision is then made as to the number of factors to be extracted and the method of rotation to use. Next, the rotated factors should be interpreted. Depending upon the objectives, the factor scores may be calculated, or surrogate variables selected, to represent the factors in subsequent multivariate analysis. Finally, the fit of the factor analysis model is determined.

GEOMETRY OF FACTOR ANALYSIS

The geometric illustration of factor analysis is not as straightforward as that of principal components analysis.

The observable random vector **X**, with p components, has mean $\boldsymbol{\mu}$ and covariance matrix Σ. The factor model postulates that **X** is linearly dependent upon a few unobservable random variables F_1, $F_2, \ldots$, F_m, called *common* *factors*, and p additional sources of variation $\varepsilon_1, \varepsilon_2, \ldots, \varepsilon_p$, called *errors*. These errors are also known as *specific factors*. The factor analysis model is given by

$$\begin{aligned}
X_1 - \mu_1 &= \ell_{11}F_1 + \ell_{12}F_2 + \ldots + \ell_{1m}F_m + \varepsilon_1 \\
X_2 - \mu_2 &= \ell_{21}F_1 + \ell_{22}F_2 + \ldots + \ell_{2m}F_m + \varepsilon_2 \\
&\vdots \\
X_p - \mu_p &= \ell_{p1}F_1 + \ell_{p2}F_2 + \ldots + \ell_{pm}F_m + \varepsilon_p
\end{aligned} \tag{2.1}$$

or, in matrix notation,

$$X - \mu = L F + \varepsilon \tag{2.2}$$

where $X - \mu$ is a matrix of dimension p by 1 (px1)

L is a matrix of dimension p by m (p x m)

F is a matrix of dimension m by 1 (m x 1)

ε is a matrix of dimension m by 1 (p x 1)

The coefficient ℓ_{ij} is called the loading of the i^{th} variable on the j^{th} factor, so the matrix **L** is the matrix of factor loadings. Note that the i^{th} specific factor ε_i is associated only with the i^{th} response X_i. The p deviations $X_1-\mu_1, X_2-\mu_2, \ldots,$, $X_p-\mu_p$ are expressed in terms of (p + m) random variables $F_1, F_2, \ldots, F_m, \varepsilon_i, \varepsilon_2, \ldots, \varepsilon_p$ which are *unobservable*.

With so many unobservable quantities, a direct verification of the factor model from observations $X_1, X_2, \ldots, X_p$ is hopeless. However, with some additional assumptions about the random vectors **F** and **ε**, the model in (2.2) implies certain covariance relationships, which can be checked.

We assume that

$$E(F) = \underset{(m\times 1)}{0}, \qquad Cov(F) = E[FF'] = \underset{(m\times m)}{I}$$

where $E\ (F)$ is the mean vector of F, a zero matrix of dimension m by 1 (m x 1) and Cov (F) is square matrix of dimension m by m (m x m).

$$E(\varepsilon) = \underset{(p\times 1)}{0}, \quad Cov(\varepsilon) = E[\varepsilon\varepsilon'] = \underset{(p\times p)}{\psi} = \begin{bmatrix} \psi_1 & 0 & \dots & 0 \\ 0 & \psi_2 & \dots & 0 \\ . & . & \dots & . \\ 0 & 0 & \dots & \psi_p \end{bmatrix} \qquad (2.3)$$

where $E\ (\varepsilon)$ is the expectation of the errors (residuals) of dimension p by 1 and $Cov\ (\varepsilon)$ the covariance matrix, an identity matrix of dimension p by p (p x p) and that **F** and **ε** are independent so

$$Cov(\varepsilon, F) = E(\varepsilon F') = \underset{(p\times m)}{0}$$

These assumptions and the relation in (2.2) constitute the *orthogonal factor model*.

The orthogonal factor model implies a covariance structure for **X**.

$$\begin{aligned} (X-\mu)(X-\mu)' &= (LF+\varepsilon)(LF+\varepsilon)' \\ &= (LF+\varepsilon)((LF)'+\varepsilon') \\ &= LF(LF)' + \varepsilon(LF)' + LF\varepsilon' + \varepsilon\varepsilon' \end{aligned}$$

so that

$$\begin{aligned} \sum &= Cov(X) = E(X-\mu)(X-\mu)' \\ &= LE(FF')L' + E(\varepsilon F')L' + LE(F\varepsilon') + E(\varepsilon\varepsilon') \\ &= LL' + \psi \end{aligned}$$

According to Equation (2.3).

$$Cov(X) = LL' + \psi$$

or

$$Var(X_i) = \ell_{i1}^2 + \ldots + \ell_{im}^2 + \psi_i$$

$$Cov(X_i, X_j) = \ell_{i1}\ell_{k1} + \ldots + \ell_{im}\ell_{km}$$

(2.4)

$$Cov(X, F) = L$$

$$Cov(X_i, F_j) = \ell_{ij}$$

The model **X** – **μ** = **LF** + ε is *linear* in the common factors. If the p responses **X** are, in fact, related to underlying factors but the relationship is nonlinear such as in $X_1 - \mu_1 = \ell_{11}F_1F_3 + \varepsilon_1, X_2 - \mu_2 = \ell_{21}F_2F_3 + \varepsilon_2$, and so forth, then the covariance structure $LL'+\psi$ given by (2.4) may not be adequate. The very important assumption of linearity is inherent in the formulation of the traditional factor model.

That portion of the variance of the i^{th} variable contributed by the m common factors is called the i^{th} *communality*. That portion of $Var(X_i) = \sigma_{ij}$ due to the specific factor is often called the *uniqueness*, or *specific variance*. Denoting the i^{th} communality by h_i^2, we see from (2.4) that

$$\underbrace{\sigma_{ii}}_{Var(X_i)=} = \underbrace{\ell_{i1}^2 + \ell_{i2} + \ldots + \ell_{im}^2}_{communalit\ y} + \underbrace{\psi_i}_{specific\ -var\ iance}$$

or

$$h_i^2 = \ell_{i1}^2 + \ell_{i2}^2 + \ldots + \ell_{im}^2 \qquad (2.5)$$

and

$$\sigma_{ii} = h_i^2 + \psi_i, \qquad i = 1, 2, \ldots, p$$

The i^{th} communality is the sum of squares of the loadings of the i^{th} variable on the m common factors.

FACTOR ROTATIONS

An important output from factor analysis is the factor matrix, also called the *factor pattern matrix*. The factor matrix contains the coefficients used to express the standardized variables in terms of the factors. Those coefficients, the factor loadings, represent the correlations between the factors and the variables. A coefficient with large absolute value indicates that the factor and the variable are closely related. The coefficients of the factor matrix can be used to interpret the factors.

Although the initial or un-rotated factor matrix indicates the relationship between the factors and individual variables, it seldom results in factors that can be interpreted, because the factors are correlated with many variables. In some instances, a factor may be least somewhat correlated with most of the indicator variables (that is with an absolute value of factor loading greater than 0.3). How should this factor be interpreted? In such a complex matrix it is difficult to interpret the factors. Therefore, through rotation, the factor matrix is transformed into a simpler one that is easier to interpret.

In rotating the factors, we would like each factor to have nonzero, or significant, loadings or coefficients for only some of the variables. Likewise, we would like each variable to have nonzero or significant loadings with only a few factors, if possible with only one. If several factors have high loadings with the same variable, it is difficult to interpret them. Rotation does not affect the communalities and the percentage of total variance explained. However, the percentage of variance accounted for by each factor does change. The variance explained by the individual factors is redistributed by rotation. Hence, different methods of rotation may result in the identification of different factors.

The rotation is called ***orthogonal rotation*** if the axes are maintained at right angles. The most commonly used method for rotation is the ***varimax procedure***. This is an orthogonal method of rotation that minimises the number of variables with high loadings on a factor, thereby enhancing the interpretability of the factors. Orthogonal rotation results in factors that are uncorrelated. The rotation is called ***oblique rotation*** when the axes are not maintained at right angles, and the factors are correlated. Sometimes, allowing for correlations among factors can simplify the factor pattern matrix. Oblique rotation should be used when factors in the population are likely to be strongly correlated.

For example, comparing varimax rotated factor matrix with the un-rotated (Factor matrix), we can see how rotation achieves simplicity and enhances interpretability. The rotated factor matrix forms the basis for interpretation of the factors.

INTERPRETATION OF FACTORS

Interpretation is facilitated by identifying the variables that have large loadings on the same factor. The factor can then be interpreted in terms of the variables that load high on it. Another useful aid in interpretation is to plot the variables using the factor loadings as coordinates. Variables at the end of an axis are those that have high loadings on only that factor, and hence describe the factor. Variables that are not near any of the axes are related to both the factors. If a factor cannot be clearly defined in terms of the original variables, it should be labeled as an undefined or a general factor.

CALCULATION OF FACTOR SCORES

Following interpretation, factor scores can be calculated, if necessary. Factor analysis has its own stand-alone value. However, if the goal of factor analysis is to reduce the original set of variables to a smaller set of composite variables (factors) for use in subsequent multivariate analysis, it is useful to compute factor scores for each respondent. A factor is simply a linear combination of the original variables. The ***factor scores*** for the i^{th} factor may be estimated as follows:

$$F_i = W_{i1}X_1 + W_{i2}X_2 + W_{i3}X_3 + \dots + W_{ik}X_k$$

F_i = estimate the i^{th} factor

W_i = weight or factor score coefficient

k = number of variables

The weights, or factor score coefficients, used to combine the standardized variables are obtained from the factor score matrix. Only in the case of principal components analysis is it possible to compute exact factor scores. Moreover, in principal component analysis, these score are uncorrelated. In common factor analysis, estimates of these scores are obtained, and there is no guarantee that the factors will be uncorrelated with each other. The factor scores can be used instead of the original variables in subsequent multivariate analysis.

DETERMINATION OF THE MODEL FIT

The final step in factor analysis involves the determination of model fit. A basic assumption underlying factor analysis is that the observed correlation between variables can be attributed to common factors. Hence, the correlations between the variables can be deduced or reproduced from the estimated correlations between the variables and the factors. The differences between the observed correlations (as given in the input correlation matrix) and the reproduced correlations (as estimated from the factor matrix) can be examined to determine model fit. These differences are called *residuals*. If there are many large residuals, the factor model does not provide a good fit to the data and the model should be reconsidered.

CHAPTER THREE

PRELIMINARY ANALYSIS

This chapter deals with the preliminary analysis which is mainly summary of the basic statistics (descriptive statistics) of the indicator variables with graphs, supported by correlation matrix and scree plot. The total number of students interviewed was 317 out of which 184 (58%) were males and the remaining 133 (42%) being females as shown in Appendix 4a. Most of the students were young and old adults who are below 31years and form about 97% of the sample. Also the data revealed that, most of the students interviewed were from the school of Business (82%). School of Applied Sciences students were about 15% and Arts and school of Engineering students forming 3%. An overwhelming majority of the students were single, 292 (92.1%); whereas only 23 (7.3%) said they were married. Only one student was divorced. The first year students interviewed were 163, second year students were 83 and third year students were also 69.

PRELIMINARY ANALYSIS USING CORRELATION MATRIX

From the correlation matrix in Appendix 2, it showed that, correlations among all the possible pairs of the indicator variables were not very high, but there were some significant pairs which were interesting are displayed in Table 1 with their p-values.

Table 1: Correlation coefficients of significant pairs of variables

	Correlation Coefficient	Paired Indicator Variables	P-Value
1	0.184	R_1 vrs R_2	0.001
	0.200	R_1 vrs R_{10}	0.000
2	0.231	R_2 vrs R_4	0.000
	-0.227	R_2 vrs R_6	0.000
	-0.165	R_2 vrs R_8	0.002
	0.204	R_2 vrs R_{11}	0.000
	0.379	R_2 vrs R_{14}	0.000
3	0.304	R_3 vrs R_5	0.000
	0.183	R_3 vrs R_6	0.001
	0.193	R_3 vrs R_9	0.000
	0.151	R_3 vrs R_{13}	0.004
4	0.222	R_4 vrs R_5	0.000
	0.216	R_4 vrs R_{11}	0.000
	0.163	R_4 vrs R_{12}	0.012
	0.161	R_4 vrs R_{14}	0.002
5	0.133	R_5 vrs R_9	0.010
	0.154	R_5 vrs R_{13}	0.003
6	0.207	R_6 vrs R_7	0.000
	0.228	R_6 vrs R_8	0.000
	0.255	R_6 vrs R_9	0.000

	Correlation Coefficient	Paired Indicator Variables	P-Value
7	0.242	R_7 vrs R_8	0.000
	0.169	R_7 vrs R_9	0.001
8	0.209	R_8 vrs R_9	0.000
	-0.181	R_8 vrs R_{14}	0.001
9	0.141	R_9 vrs R_{10}	0.007
10	0.179	R_{10} vrs R_{11}	0.001
	0.153	R_{10} vrs R_{12}	0.004
11	0.244	R_{11} vrs R_{12}	0.000
12	0.142	R_{12} vrs R_{14}	0.006

The groups as shown in the extraction from the correlation matrix portray a number of factors to be extracted. This first group to be considered is made up of R_2 (cost of living relatively cheaper), R_{14} (accommodation cheaper), R_4 (enjoy family ties), R_{11} (proximity-close to my place of work/ home), R_6 (exposure to new environment) and R_8 (excelling graduates from Cape Coast Polytechnic). This indicates that, prospective students in choosing to study in the Cape Coast Polytechnic first and foremost consider the economic factors such as cost of living and accommodation to be relatively cheaper and this is a key factor. They also consider enjoying family relation to be another reason for their choice and lastly but not the least proximity is another consideration they make. They would consider neither unknown places nor excelling graduates from the polytechnic when making such choices.

The second group comprises R_3 (tourist attraction in Cape Coast), R_5 (meet old friends), R_6 (exposure to new environment), R_9 (enjoy education in the Central region) and R_{13} (was introduced by a friend/ a relative etc) showing that the students consider the conducive physical attractive environment of the town as another key issue. In addition they still do consider relation such as meeting old friends.

The next group has R_4 (enjoy family ties), R_5 (meet old friends), R_{11} (proximity – close to my place of work/ home), R_{12} (convenience) and R_{14} (cheaper accommodation in Cape Coast Polytechnic) and also talks about relation to either family or friends to be a key consideration in their choice, then proximity, convenience as well as cheaper accommodation as the other considerations they make.

The following group was R_6 (exposure to new environment), R_7 (has more conducive learning atmosphere), R_8 (excelling graduates from Cape Coast Polytechnic) and R_9 (enjoy education in the Central region) which revealed that, most Cape Coast Polytechnic choose the polytechnic because of wanting to enjoy education in the region which is considered to be a region with high concentration of learning centres. Surprisingly R_1 (has lucrative academic programmes) was out of this group which is an indication it is just the physical conducive environment prospective students consider in their choice or look out for.

The other groups also centered on the already mentioned considerations. Therefore regrouping the paired variables under the considerations or factors the students attached relevance to, we obtain: Economic factors (cost of living relative cheaper and accommodation cheaper) – R_2, R_{14}, Physical conducive environment – R_3. R_6, R_9, Attractive environment – R_3, R_6, R_7, R_8, R_9, Convenience – R_{11}, R_{12}. and Relation – R_4, R_5, R_{13}. From the groupings considered here the factors tends to be about five.

EIGEN-VALUES ANALYSIS

Based on the eigen-value analysis from Table 2 and Table 3, only factors with eigen-values greater than one (1.0) are retained and by so doing we obtained a maximum extraction of four factors. This test is adequate based on a Kaiser-Meyer-Olkin's measure of sampling adequacy of 0.634 with a Bartlett's test showing a significance of 0.000 as shown in Appendix 3b.

Table 2: Eigen-values Analysis

Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
2.145	15.322	15.322	1.776	12.686	12.686
1.934	13.817	29.139	1.620	11.569	24.255
1.312	9.372	38.511	1.610	11.501	35.757
1.149	8.204	46.715	1.534	10.958	46.715

Table 3: Eigen-values Analysis

Total Variance Explained

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	2.145	15.322	15.322
2	1.934	13.817	29.139
3	1.312	9.372	38.511
4	1.149	8.204	46.715
5	0.994	7.100	53.815
6	0.923	6.593	60.408
7	0.891	6.366	66.774
8	0.791	5.653	72.427
9	0.743	5.309	77.736
10	0.713	5.095	82.831
11	0.700	5.001	87.832
12	0.637	4.551	92.384
13	0.615	4.393	96.777
14	0.451	3.223	100.000

From the scree plot, the number of factors to be extracted is suggested to be in the minimum range of three to five factors using the elbow rule as shown in Figure 2.

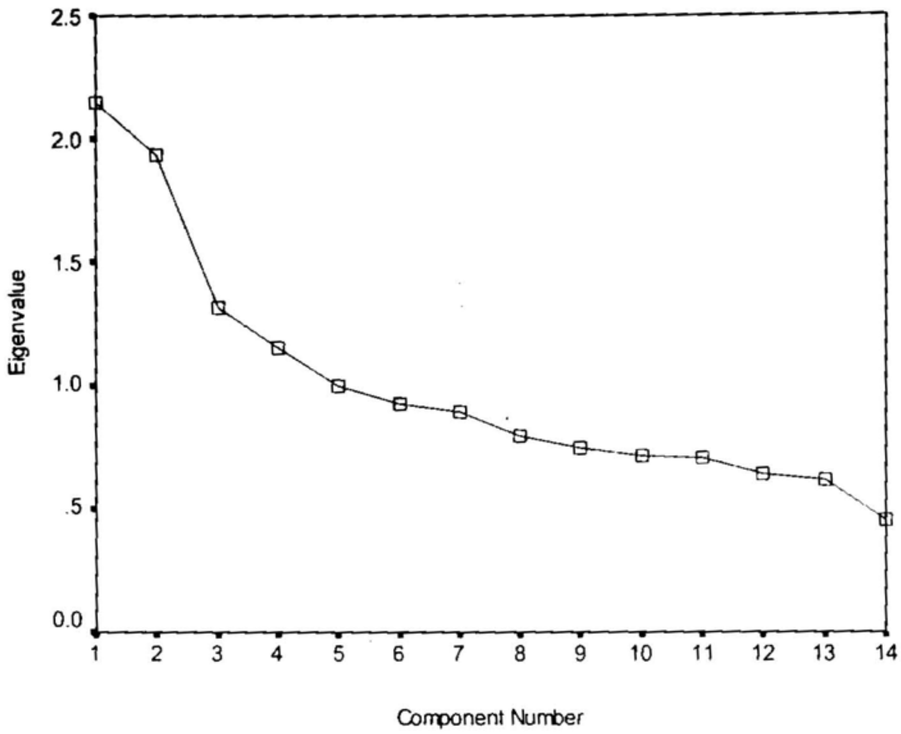


Figure 2: Scree plot for the indicator variables (R_1, R_2 ... R_{14})

SUMMARY STATISTICS OF THE INDICATOR VARIABLES

The histogram shows the responses for each variable on the horizontal axis against their corresponding frequencies on the vertical axis. On the horizontal axis in the histograms for the fourteen (14) variables, the values 1, 2, 3, 4 , and 5 indicates the responses "strongly agree", "agree", "do not mind", "disagree", and "strongly disagree" respectively. The fourteen (14) variables have clearly been presented on histograms to portray the pattern of response of the students. The graphs are similar to enable one easily and clearly differentiate between the patterns of responses of one variable from another. Figure 3 depicts that, most of the students (277) either strongly agree or agree that Cape Coast Polytechnic offers lucrative academic courses and majority of them were from the school of Business (220). Interestingly all the students from the schools of Applied Sciences and Arts and Engineering agreed to the fact that, the polytechnic offer lucrative academic programmes. The responses were positively skewed and were in favour of those who agreed to the fact that the polytechnic offers lucrative academic programmes.

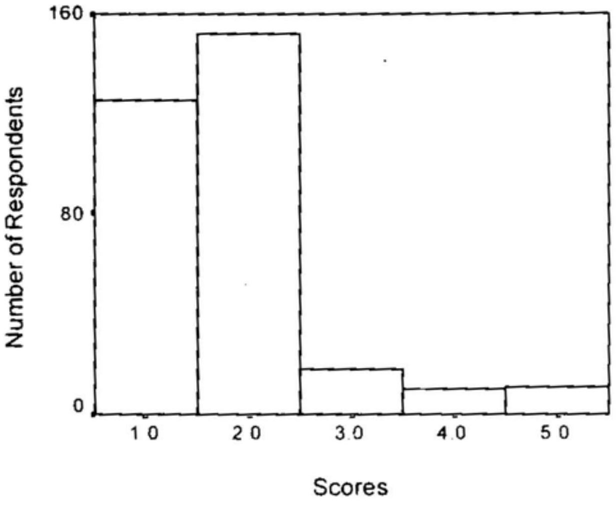


Figure 3: Summary for R_1 (Has Lucrative Academic Programmes)

The reverse was the case of the second indicator variable which revealed that, cost of living does not play any significant role in attracting students to the polytechnic. About 71% said cost of living is expensive in Cape Coast and this is seen the Figure 4 below. The number of student increased from the responses "strongly agree", through "do not mind" to "strongly disagree".

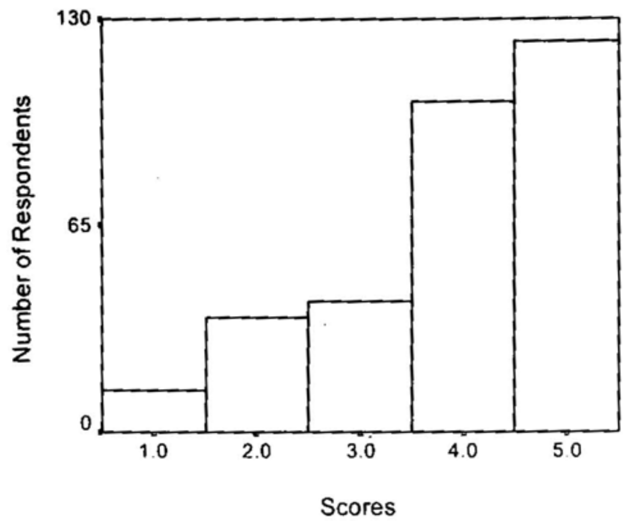


Figure 4: Summary for R_2 (Cost of Living Relatively Cheaper)

Figure 5 reveals that a little above half (182) of the number of students interviewed, which represents 57.8%, were attracted to the polytechnic by the interesting tourist sites in the region. About 57 students (18%) disagreed to this assertion and quite a sizeable number of students (76), representing about 24%, were neutral on this very issue, being a reason for coming to the Cape Coast Polytechnic.

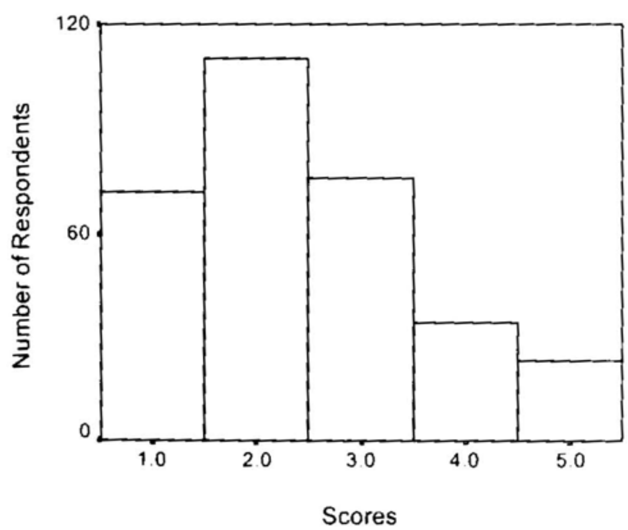


Figure5: Summary for R_3 (Tourist Attraction in Cape Coast)

Opinion on "enjoying family ties" as a motivating factor was partially normally distributed as seen from the histogram in Figure 6. The data showed that, most students were of the view that, they do not side with the reason of "enjoying family ties" being a consideration for coming to the polytechnic.

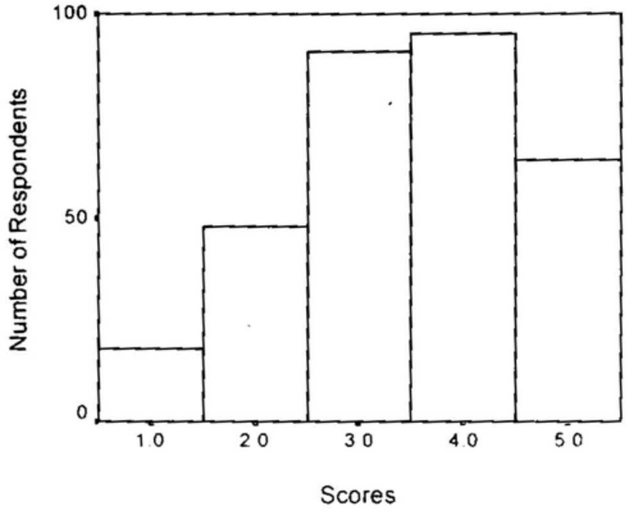


Figure 6: Summary for R_4 (Enjoy Family Ties)

In Figure 7, a similar observation to that in Figure 6 was seen. The responses to "meeting old friends" as reasons for coming to Cape Coast Polytechnic were also partially normal. The difference was that, the spread was a little more in the responses to "meeting old friends" than responses to "enjoying family ties".

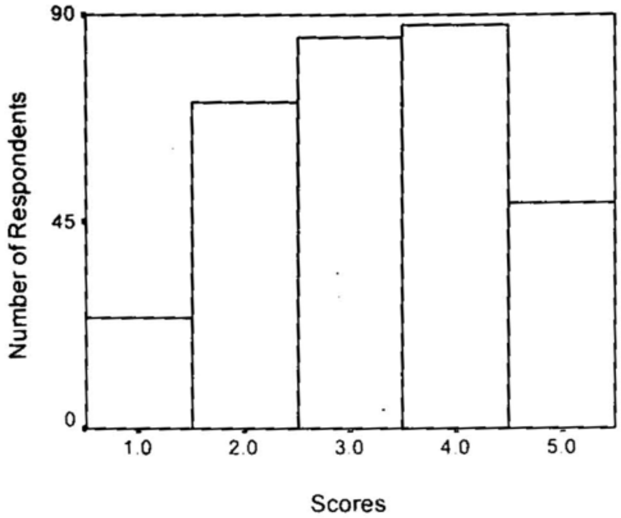


Figure 7: Summary for R_5 (Meet Old Friends)

Responses to the indicator variable "exposure to new environment" were positively skewed (Figure 8). Majority of the students (248) do come to Cape Coast Polytechnic because they want to explore new environments and places. Most of them may have schooled in a particular region where their place of residence is just close and would like to move out. Some may be due youthful exuberance. That is, they would like to be a little farther away from their permanent place of residence. About half (157) of the responses were that, they came to the polytechnic not because they wanted an exposure to a new environment. Cumulatively, 78% of the students disagreed to this being a reason for coming Cape Coast Polytechnic to school as can be seen in Appendix 9a.

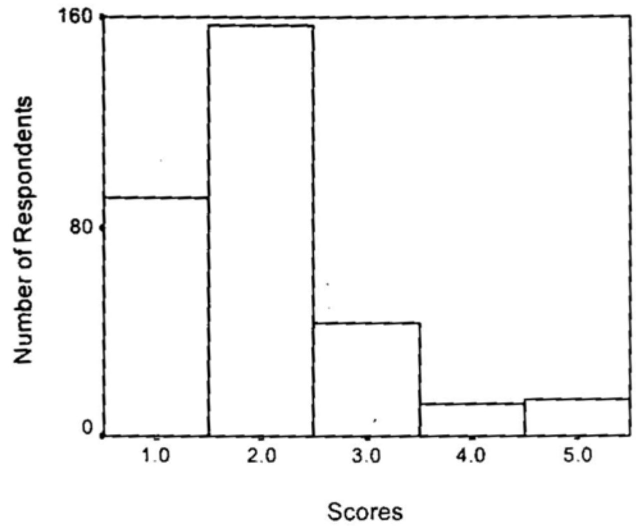


Figure 8: Summary for R_6 (Exposure to New Environment)

Similarly in Figure 9, the responses to the Cape Coast Polytechnic having more conducive learning environment did not differ significantly from the previous figure. Students believed the polytechnic has more conducive learning environment.

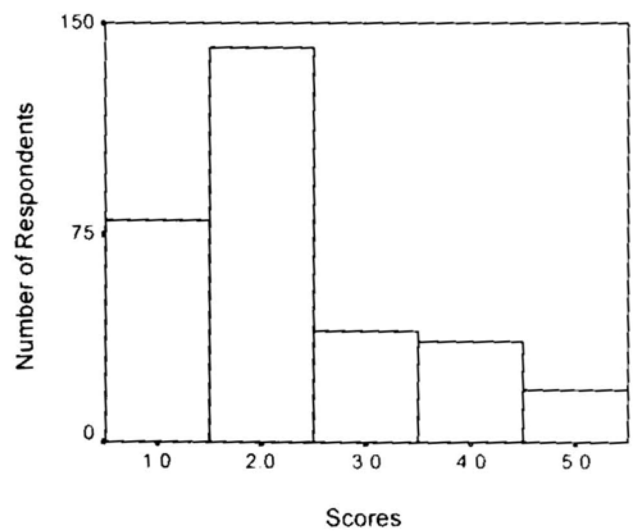


Figure 9: Summary for R_7 (Has More Conducive Learning Atmosphere)

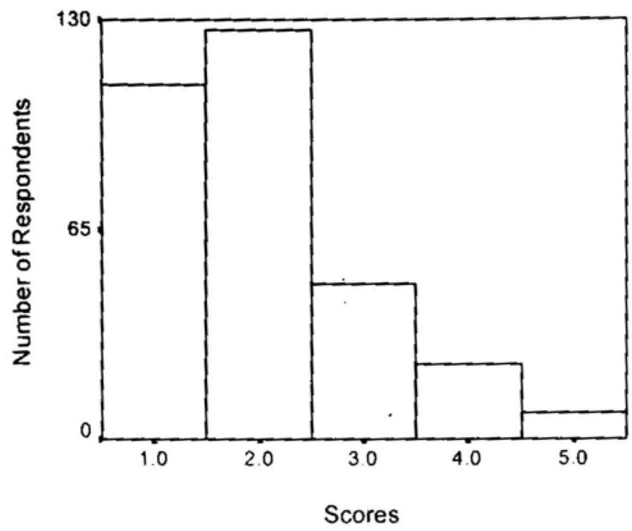


Figure 10: Summary for R_8 (Excelling Graduates From Cape Coast Polytechnic)

Excelling graduates from the Cape Coast Polytechnic are a motivating factor for students who come to the polytechnic. Two hundred and thirty-seven out of 317 students interviewed agreed to that forming about 75% of the responses to this indicator variable as shown in Figure 10. Responses to this variable were positively skewed towards agreed.

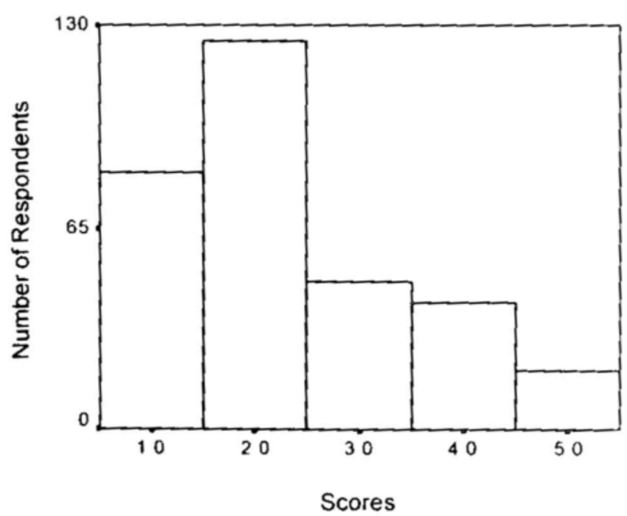


Figure 11: Summary for R_9 (Enjoy Education in the Central Region)

Central Region being an educational centre as believed by most people is confirmed by students who come to Cape Coast Polytechnic. Their responses revealed that they are in the Cape Coast Polytechnic to enjoy education in the region which is believed to the centre of education (Figure 11).

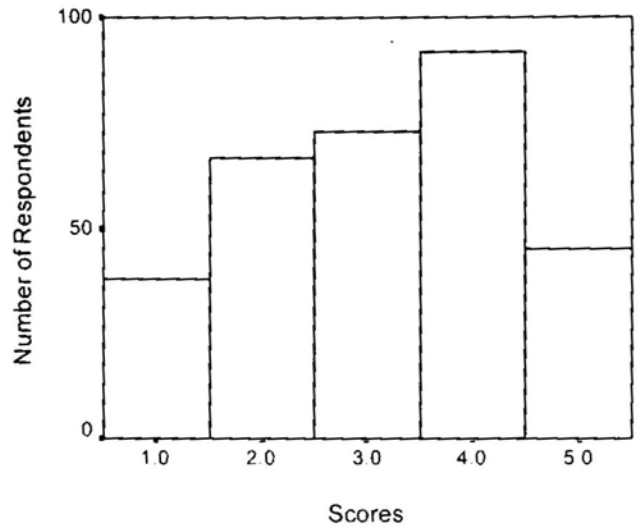


Figure12: Summary for R_{10} (Has Attachments to Industries)

From the data, the responses of the students to "has attachments to Industries" were fairly normal although it showed a negative skewness (-0.1667) indicating that, they do not see the Cape Coast Polytechnic to have strong industrial attachments. The responses were evenly spread with response to "disagree" recording the highest (29%, Figure 12).

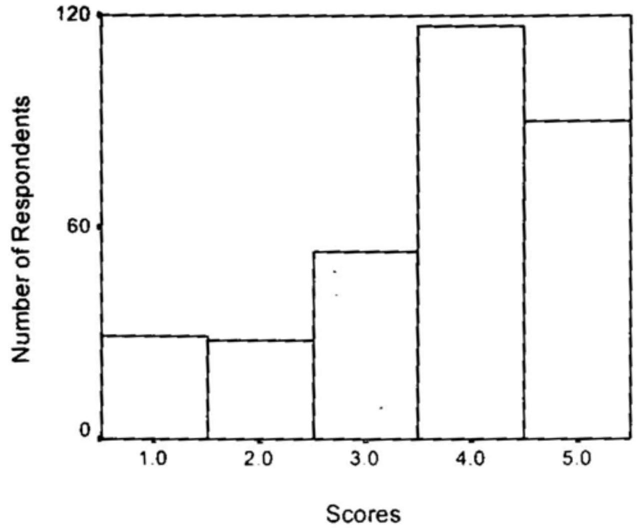


Figure 13: Summary for R_{11} (Proximity - Close to my Place of Work/ Home)

"Proximity" is also not a consideration for coming to Cape Coast Polytechnic by students and this is evident in Figure 13. It showed that the students do not agree to this, hence reflecting in their skewed responses and this goes to support the earlier responses to "exposure to new environment". Thus, being exposed to a new environment does not necessarily have to be a place close to one's place of work or one's permanent residence and the vice versa.

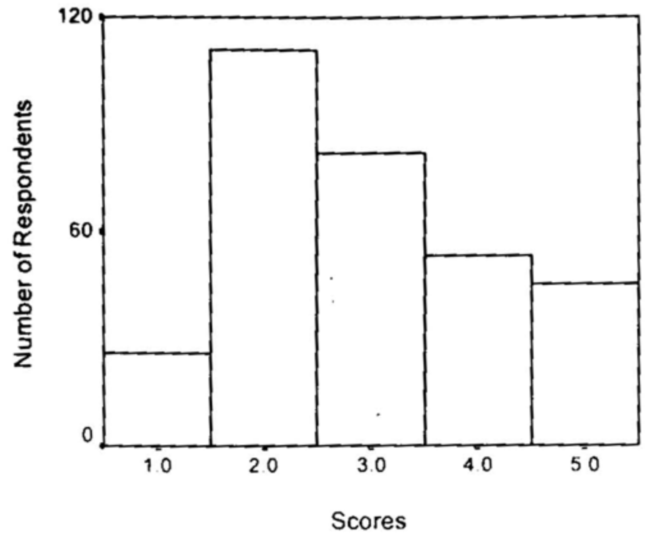


Figure 14: Summary for R_{12} (Convenience)

"Convenience" was not considered by most students as an issue in choosing to come to Cape Coast Polytechnic (56.7%). One hundred and eighty out of 317 students were of the view that, they do not mind, they disagree and strongly disagree. The responses to this indicator variable was fairly normally distributed with the modal response going for agree and this may be due to economic and financial reasons (Figure 14).

About two-fifth of the students (126) were introduced to the Cape Coast Polytechnic by a relation (about 39.9%, Figure 15). The remaining got to know the polytechnic through the electronic media, print media, programme brochure, flyer, etc. The "agree" and "disagree" responses were comparable with values of 90 (28.4%) and 79 (24.9%) respectively, whereas the "do not mind" responses were 57 (18%), which recording third highest responses.

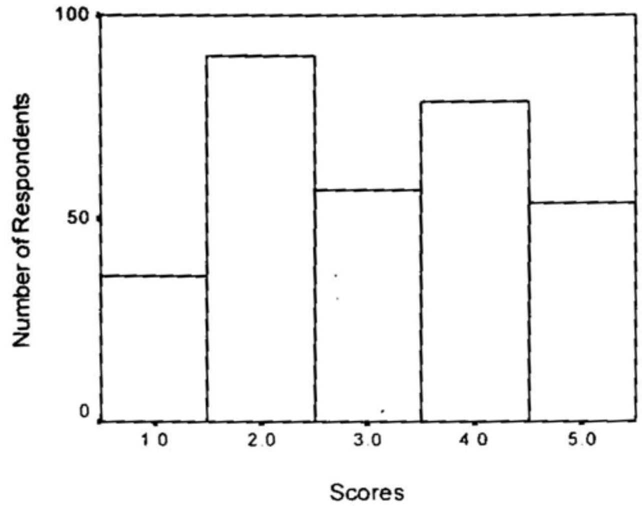


Figure 15: Summary for R_{13} (Was introduced by a Friend/ Relative, etc)

Most of the students (223) were of the view that, the cost of accommodation in Cape Coast is not cheap, but also equally high. About 70.3% of them disagreed to the fact that, accommodation is cheaper in and around the school or Cape Coast in general. Considering the response to disagree alone, it recorded the highest of about half of the total responses (152, 48%) which was more than twice the second highest response of (71, 22.4%) going for "disagree".

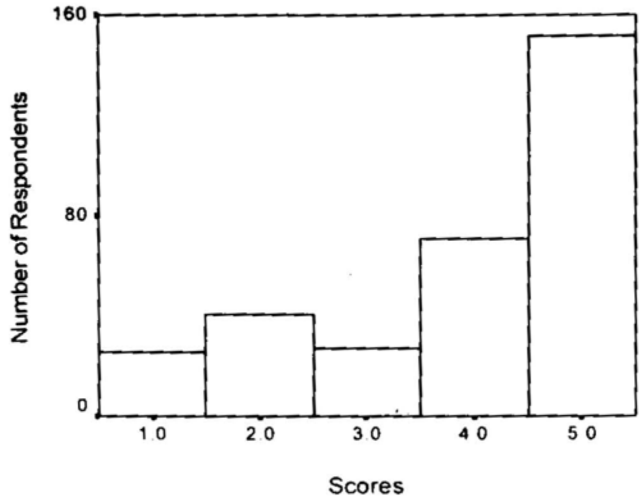


Figure 16: Summary for R_{14} (Accommodation Cheaper in the Cape Coast Polytechnic)

From the analysis of the histograms for the various indicator variables, the following groups of variables tend to have similar shapes and features: Group One (R_2, R_{14}, and R_{11}), Group Two (R_1, R_6, R_7, R_8, and R_9) and Group Three (R_3, R_4, R_5, R_{10}, R_{12}, and R_{13}). This suggests a minimum of three (3) factors to be extracted.

The responses to the variables were summed and grouped into high, medium and low values. Values ranging from 578 to 771 were considered low. Values from 931 to 1087 were considered medium and values above 1087 considered high.

Summation of the total responses to the 14 indicator variables

R_1 (Has lucrative academic programmes) =578

R_2 (Cost of living relatively cheaper) =1239

R_3 (Tourist attraction in Cape Coast) =771

R_4 (Enjoy family ties) =1087

R_5 (Meet old friends) =1018

R_6 (Exposure to new environment) =652

R_7 (Has more conducive learning atmosphere) =721

R_8 (Excelling graduates from Cape Coast Polytechnic) =640

R_9 (Enjoy education in the Central Region) =736

R_{10} (Has attachments to industries) =984

R_{11} (Proximity – close to my place of work / home) =1162

R_{12} (Convenience) =931

R_{13} (Was introduced by a friend/ relative etc) =973

R_{14} (Accommodation cheaper in the C-Poly) =1233

It was observed, the variables R_2 (Cost of living relatively cheaper), R_{14} (Accommodation cheaper in the C-Poly Accommodation cheaper in the C-Poly) and R_{11} (Proximity – close to my place of work / home) were the group with the highest summations with their sums ranging form 1162 to 1239. The medium group comprises R_4 (Enjoy family ties), R_5 (Meet old friends), R_{10} (Has attachments to industries), R_{12} (Convenience) and R_{13} (Was introduced by a friend/ relative etc) ranging from 931 to 1087. The group with lowest summation was made up of R_1 (Has lucrative academic programmes), R_3 (Tourist attraction in Cape Coast), R_6 (Exposure to new environment), R_7 (Has more conducive learning atmosphere), R_8 (Excelling graduates from Cape Coast Polytechnic), and R_9 (Enjoy education in the Central Region) ranging from 578 to 771. This also suggests a possible minimum extraction of three (3) factors.

Finally it was observed that, the summary statistics of the variables filtered into the usual three known scenarios of the normal distributions. Six variables were exhibited positive skewness, five were somewhat symmetrical or fairly normal and three were skewed negatively. The variables which were positively skewed indicating that, the students agreed to the stated reason(s) are; "Has lucrative academic programmes, exposure to new environment", "Has more conducive learning atmosphere", "Excelling graduates from the Cape Coast Polytechnic" and "Enjoy education in the Central Region". The sum of the responses for each of the variables supported the shape of the histograms indicating low values of between 578 and 771.

Variables with fairly normal or quite evenly distributed responses also had their summation of their responses being medium, that is, between the low summation group and the high summation group. They ranged from 931 to 1087 and these variables were; "Enjoy family ties", "Meet old friends", "Has attachments to industries", "Convenience and was introduced by a friend/ relative" etc. This shows that most of the students were of the opinion that, they do not mind those reasons so much in their choice.

The remaining set of variables had histograms that exhibited negative skewness with the highest summations of their responses ranging from 1162 to 1239. These variables were; "Cost of living being relatively cheaper", "Proximity" (close to my place of work/ home), and "Accommodation cheaper at the Cape Coast Polytechnic". Responses to these variables showed that, the students disagreed to the stated reasons.

Although Cape Coast is considered as an educational centre endowed with many well known schools, the responses from the students never showed any significant correlation between enjoying education in the region and the polytechnic offering lucrative programmes.

CHAPTER FOUR

FURTHER ANALYSIS

In Chapter Three, a number of interesting observations were made mainly through exploratory analysis of the data and correlation matrix. These observations are relevant to the aims and objectives of the study and therefore need to be subjected to further analysis by using principal component analysis of factor analysis. The following would be considered:

1. Determining the number of factors to be extracted based on eigen-values
2. Rotating the factors by orthogonal method (*varimax procedure*)
3. Interpreting the factors

From the preliminary analysis, the interesting features observed were the eigen-value analysis leading to a possible maximum extraction of five factors. The scree plot also suggested a possible minimum extraction of three to five factors.

CONDUCTING FACTOR ANALYSIS

The statistical packages used in the factor analysis are Statistical Package for Social Science (version 11) and Minitab (version 14).

DETERMINING THE NUMBER OF FACTORS TO BE EXTRACTED BASED ON EIGENVALUES

The correlation matrix as seen in the preliminary analysis gave us the possible pairs from which we gathered and grouped the significant pairs based on their p-values.

Table 4: Eigenvalue Analysis Table

Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
2.145	15.322	15.322	1.776	12.686	12.686
1.934	13.817	29.139	1.620	11.569	24.255
1.312	9.372	38.511	1.610	11.501	35.757
1.149	8.204	46.715	1.534	10.958	46.715

From Table 4, using the eigen-value-greater-than-one rule, the following eigen-values were considered; λ_1 = 2.145, λ_2 = 1.934, λ_3 = 1.312 and λ_4 = 1.149. These values indicate that, a maximum of four factors can be extracted. Also from the scree plot, it was realized that, a minimum of about three to five factors can be realised using the elbow rule. The combination of these procedures, that is, eigen-value-greater-than-one rule and the scree plot elbow rule limits the number of factors to be extracted to four. Considering values of 0.500 and greater from the component matrix (Table 5), the following factors were extracted. The first factor is given by variables (R_4 and

R_{12}). The second factor is given by variables (R_6, R_8 and R_9). The third factor is given by variable (R_5) and the final factor being (R_{14}).

Table 5: Component Matrix (Showing the Extracted Factors)

Component Matrix

	Component			
	1	2	3	4
R1	0.393	-0.014	0.444	-0.100
R2	0.465	-0.551	0.155	0.252
R3	0.439	0.313	-0.364	0.291
R4	0.511	-0.242	-0.269	0.059
R5	0.474	0.110	-0.529	0.115
R6	0.098	0.654	0.022	0.288
R7	0.214	0.407	0.489	0.154
R8	0.122	0.613	0.243	-0.244
R9	0.328	0.506	0.025	0.088
R10	0.451	0.039	0.212	-0.256
R11	0.455	-0.266	-0.043	-0.480
R12	0.512	-0.053	0.142	-0.368
R13	0.340	0.186	-0.345	-0.125
R14	0.361	-0.357	0.348	0.594

ROTATION OF THE FACTORS BY THE ORTHOGONAL METHOD (*VARIMAX PROCEDURE*)

When the factors were rotated, the following were observed when values of 0.500 and greater were still considered as shown in Table 6. The first factor extracted was given by variables (R_6, R_7, R_8 and R_9). The second factor was given by the variables (R_3 and R_5). The third factor is given by variables (R_{10}, R_{11} and R_{12}) and the last factor given by (R_2 and R_{14}).

Table 6: Rotated Factors

Rotated Component Matrix

	Component			
	1	2	3	4
R1	0.248	-0.128	0.469	0.254
R2	-0.219	0.095	0.267	0.692
R3	0.276	0.647	-0.069	0.095
R4	-0.186	0.473	0.245	0.279
R5	-0.002	0.725	0.048	0.036
R6	0.649	0.214	-0.217	-0.085
R7	0.641	-0.145	0.133	0.157
R8	0.583	-0.041	0.230	-0.339
R9	0.529	0.284	0.089	-0.051
R10	0.164	0.068	0.529	0.065
R11	-0.256	0.170	0.645	-0.021
R12	0.044	0.121	0.635	0.036
R13	0.051	0.479	0.169	-0.158
R14	0.089	-0.020	0.003	0.850

INTERPRETING THE FACTORS

From the un-rotated factors, the students were of the view that, the first consideration they make in choosing the Cape Coast Polytechnic is their *relation*. They consider whether, being at the Cape Coast Polytechnic, they can enjoy their family relation. The second was considering the *physical environment* of Cape Coast and its environs. The third factor they considered was to *avoid relations with friends*. That is, to be away from their friends. The last consideration they made was on *cheaper accommodation*.

The rotated factors showed that, the students in choosing to study at the Cape Coast Polytechnic consider first and foremost the *physical conducive environment* (easy access to town center and market) of Cape Coast, secondly the *attractive environment* of Cape Coast, thirdly *convenience*, and lastly the *economy* of Cape Coast.

The initial factors extracted has the third and the fourth factors being related or explained by single variables each and the rotated factors had all the factors being related by more than one variable each. It is therefore on this basis that, the preferred factors extracted are the set of factors from the rotated factor procedure.

CHAPTER FIVE

SUMMARY, DISCUSSION AND CONCLUSIONS

SUMMARY

This study was conducted in and around the campus of Cape Coast Polytechnic. Students were visited in their lecture halls, laboratories and hostels to solicit their responses. The questionnaire designed centered on the reasons that were considered by students who come to further their education in the Cape Coast Polytechnic. It also aimed at making suggestions and recommendations to the management of the Cape Coast Polytechnic in finding ways to increase their students' population intake. The first part of the summary is based the preliminary analysis, and the second part is on the factor analysis which centres on the extraction of the required factors. The last and final part of the summary dwells on the rotated factors and its interpretation.

It was seen from the correlation analysis in Section 3.1 that correlations among the variables were generally not high with quite a number being significant based on their p-values. The highest strength of relationship was between "Cost of living being relatively cheaper" and "Accommodation being cheaper at the Cape Coast Polytechnic". Thus, indicating that, Cape Coast Polytechnic students' utmost concern before choosing to come to the school was cheaper accommodation and relatively cheaper cost of living there.

The correlation between "Tourist attraction in Cape Coast" and "Meeting old friends" was the highest. This also reveals that, the students highly consider the physical attraction of Cape Coast in much the way as meeting friends in choosing to study at the Cape Coast Polytechnic. This is supported by other significant correlations such as "Tourist attraction in Cape Coast" and "Exposure to new environment", "Tourist attraction in Cape Coast" and "Enjoy education in the Central Region", "Tourist attraction in Cape Coast" and "Was introduced by a friend/ relative" etc.

Physical conducive environment was also one of the key consideration by students in choosing to study at the Cape Coast Polytechnic and this is supported by the correlations between "Exposure to new environment" and "Enjoy education in the Central Region", "Exposure to new environment" and "Excelling graduates from Cape Coast Polytechnic", "Exposure to new environment" and "Has more conducive learning atmosphere".

Lastly, "Convenience" was observed as an additional consideration to the already mentioned reasons by students of the Cape Coast Polytechnic for choosing to study there, and this was supported by the correlation between "Proximity" (close to my place of work/ home) and "Convenience". There other correlations went in favour of the aforementioned reasons.

This analysis gave a maximum extraction of four factors with the rule of considering eigen-values-greater-than one rule. The elbow rule from the scree plot also showed a minimum of between three to five factors to be extracted. From the two procedures, four factors were to be extracted. This was confirmed by the eigen-value analysis and the rotated factors by the varimax procedure.

DISCUSSION

From the analysis, we had a set of four factors from the initial factor extraction. These were; *relation* being the first and foremost consideration of the students in choosing to studying at the Polytechnic. Secondly, the *physical environment* of Cape Coast is a consideration for coming to the school. The third consideration is to *avoid relation with friends*. The fourth consideration was *cheaper accommodation*.

It was quite surprising that, although the summation of the responses to the variables; "Cost of living relatively cheaper" and "Accommodation cheaper at the Cape Coast Polytechnic", were high indicating that, the students disagreed with the issue that accommodation in Cape Coast is cheaper as well as cost living. It rather turned out from the further analysis that, the students were of the view that accommodation in Cape Coast is cheaper as well as the cost of living there.

The rotated factors also gave the following four factors; firstly the *physical conducive environment*, secondly *attractive environment* of Cape Coast, thirdly *convenience*, and lastly the *economy* of Cape Coast. As said in the earlier paragraph, it was surprising that, the analysis revealed that the students consider the economy of Cape Coast to be favourable in deciding to study at the polytechnic.

Therefore considering the two sets of factors extracted, the rotated factors were the preferred factors on the basis that, each one of the factors from orthogonal procedure had more than one variable correlating with it. The results from the un-rotated procedure had two of the factors correlating with one variable each.

Recalling from the literature review in Chapter Two, it was observed from the analysis that, the issue of price as mentioned in the American study of students as a factor also showed up in this research as a factor considered by student who choose to study at Cape Coast Polytechnic (economy – cost of living and cheaper accommodation). Location which was one of the reasons for choosing a particular postsecondary institution in America by their students was also observed as a factor in this study (convenience and proximity – close to my place of work/ home).

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, students who choose to study at the Cape Coast Polytechnic, first and foremost, consider the physical conducive environment or atmosphere of Cape Coast. Secondly, they also consider Cape Coast to be attractive and that is why they come to the Cape Coast Polytechnic. Thirdly, they consider Cape Coast to be convenient. They also consider the school to be convenient in terms of proximity that is, the school is close to their place of work for those who are workers and are studying at the polytechnic and for students who are staying in the Cape Coast town other than the school campus, it is close to their home.

Lastly, the students consider the economy of Cape Coast in choosing to study at the Cape Coast Polytechnic. They are of the view that, cost of living is relatively cheaper and also accommodation at the Cape Coast Polytechnic is cheaper.

Recommendations based on the findings of this research is that, since environmental consideration is a key factor in the decision making process of students who choose to study at the Cape Coast Polytechnic, then the Cape Coast Municipal Assembly should endeavour improve the sanitation condition of the municipality as well as its surrounding districts assemblies.

Also, to the management of Cape Coast Polytechnic, it was realised from this study that, the students in no way considered the polytechnic to be offering lucrative academic programmes. This is therefore to prompt the management of the school to find ways to make the programmes very lucrative to attract prospective students in the future. In future, this study can be done with all the tertiary institutions in the Central Region as the population, to find out the factors that attract prospective students to study in tertiary institutions in the region. This will help to unveil other hidden factors which prospective students consider aside the revealed ones.

REFERENCES

Choy, P. S. and Ottinger, C., (1998). *Choosing a Postsecondary Institution*. Statistical Analysis Report. National Centre for Education Statistics, U.S.A.

Johnson, R. A. and Wichern, D. W. (1992). *Applied Multivariate Statistical Analysis*. 3rd ed. Prentice-Hall International Ltd, London, U.K.

Malhotra, N. K., (2004) *Marketing Research*. 4th ed. Pearson Education International Ltd.

Murdock, A., (1997). *Personal Effectiveness*. 2nd ed. Institute of Management. U.K.

P.N.D.C Law 321

Sharma, S., (1996). *Applied Multivariate Techniques*. John Wiley & Sons Inc. U.S.A.

APPENDICES

Appendix 1a

Component Transformation Matrix

Component	1	2	3	4
1	.231	.590	.655	.411
2	.831	.188	-.147	-.502
3	.438	-.766	.320	.345
4	.253	.170	-.668	.679

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Appendix 1b

Component Score Coefficient Matrix

	Component			
	1	2	3	4
R1	.163	-.167	.288	.136
R2	-.080	.021	.075	.422
R3	.124	.407	-.148	.079
R4	-.126	.283	.074	.125
R5	-.053	.467	-.060	-.008
R6	.362	.121	-.182	.025
R7	.395	-.164	.064	.155
R8	.304	-.085	.192	-.216
R9	.280	.138	.016	-.010
R10	.079	-.034	.335	-.019
R11	-.185	.053	.428	-.139
R12	-.001	-.002	.409	-.068
R13	-.026	.295	.078	-.148
R14	.132	-.050	-.123	.604

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Appendix 2

Correlations

		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
R1	Pearson Correlation	1	188**	046	040	018	-013	089	109*	037	203**	086	113*	063	116*
	Sig. (1-tailed)		000	209	237	377	409	057	027	257	000	064	022	131	020
	N	316	316	314	315	316	316	315	315	315	314	316	316	315	316
R2	Pearson Correlation	188**	1	032	242**	114*	-229**	-023	-158**	-053	119*	183**	116*	005	378**
	Sig. (1-tailed)	000		284	000	021	000	344	002	176	018	001	020	466	000
	N	316	317	315	316	317	317	316	316	316	315	317	317	316	317
R3	Pearson Correlation	046	032	1	113*	295**	179**	059	113*	213**	076	017	077	153**	040
	Sig. (1-tailed)	209	284		023	000	001	148	022	000	090	379	087	003	238
	N	314	315	315	314	315	315	314	314	314	313	315	315	314	315
R4	Pearson Correlation	040	242**	113*	1	223**	-067	013	-044	011	059	199**	168**	126*	175**
	Sig. (1-tailed)	237	000	023		000	116	410	218	422	149	000	001	012	001
	N	315	316	314	316	316	316	315	315	315	314	316	316	315	316
R5	Pearson Correlation	018	114*	295**	223**	1	052	004	022	131**	100*	077	118*	166**	-009
	Sig. (1-tailed)	377	021	000	000		176	474	347	010	038	085	018	002	435
	N	316	317	315	316	317	317	316	316	316	315	317	317	316	317
R6	Pearson Correlation	-013	-229**	179**	-067	052	1	200**	218**	247**	057	-083	-075	121*	002
	Sig. (1-tailed)	409	000	001	116	176		000	000	000	159	070	091	016	483
	N	316	317	315	316	317	317	316	316	316	315	317	317	316	317
R7	Pearson Correlation	089	-023	059	013	004	200**	1	243**	177**	043	-036	122*	032	101*
	Sig. (1-tailed)	057	344	148	410	474	000		000	001	226	260	015	285	037
	N	315	316	314	315	316	316	316	315	315	314	316	316	315	316
R8	Pearson Correlation	109*	-158**	113*	-044	022	218**	243**	1	220**	031	-075	115*	030	-184**
	Sig. (1-tailed)	027	002	022	218	347	000	000		000	294	093	021	297	000
	N	315	316	314	315	316	316	315	316	315	314	316	316	315	316
R9	Pearson Correlation	037	-053	213**	011	131**	247**	177**	220**	1	135**	038	041	093*	001
	Sig. (1-tailed)	257	176	000	422	010	000	001	000		009	251	234	049	492
	N	315	316	314	315	316	316	315	315	316	314	316	316	315	316
R10	Pearson Correlation	203**	119*	076	059	100*	057	043	031	135**	1	173**	164**	061	069
	Sig. (1-tailed)	000	018	090	149	038	159	226	294	009	.	001	002	140	111
	N	314	315	313	314	315	315	314	314	314	315	315	315	314	315
R11	Pearson Correlation	086	183**	017	199**	077	-083	-036	-075	038	173**	1	225**	074	002
	Sig. (1-tailed)	064	001	379	000	085	070	260	093	251	001		000	094	483
	N	316	317	315	316	317	317	316	316	316	315	317	317	316	317
R12	Pearson Correlation	113*	116*	077	168**	118*	-075	122*	115*	041	164**	225**	1	121*	162**
	Sig. (1-tailed)	022	020	087	001	018	091	015	021	234	002	000		016	002
	N	316	317	315	316	317	317	316	316	316	315	317	317	316	317
R13	Pearson Correlation	063	005	153**	126*	166**	121*	032	030	093*	061	074	121*	1	-049
	Sig. (1-tailed)	131	466	003	012	002	016	285	297	049	140	094	016		190
	N	315	316	314	315	316	316	315	315	315	314	316	316	316	316
R14	Pearson Correlation	116*	378**	040	175**	-009	002	101*	-184**	001	069	002	162**	-049	1
	Sig. (1-tailed)	020	000	238	001	435	483	037	000	492	111	483	002	190	
	N	316	317	315	316	317	317	316	316	316	315	317	317	316	317

** Correlation is significant at the 0.01 level (1-tailed)

* Correlation is significant at the 0.05 level (1-tailed)

Appendix 3a

Factor Analysis

Communalities

	Initial	Extraction
R1	1.000	.362
R2	1.000	.607
R3	1.000	.508
R4	1.000	.396
R5	1.000	.529
R6	1.000	.521
R7	1.000	.474
R8	1.000	.510
R9	1.000	.372
R10	1.000	.315
R11	1.000	.510
R12	1.000	.420
R13	1.000	.285
R14	1.000	.731

Extraction Method: Principal Component Analysis.

Appendix 3b

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.634
Bartlett's Test of Sphericity	Approx. Chi-Square	398.337
	df	91
	Sig.	.000

Appendix 4a FREQUENCIES

SEX

Statistics

SEX

N	Valid	317
	Missing	0
Mean		1.42
Std. Error of Mean		.028
Median		1.00
Mode		1
Std. Deviation		.494
Variance		.244
Skewness		.328
Std. Error of Skewness		.137
Kurtosis		1.905
Std. Error of Kurtosis		.273
Sum		450
Percentiles	25	1.00
	50	1.00
	75	2.00

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	184	58.0	58.0	58.0
	Female	133	42.0	42.0	100.0
	Total	317	100.0	100.0	

Appendix 4b

AGE

Statistics

AGE

N	Valid	315
	Missing	2
Mean		1.73
Std. Error of Mean		.028
Median		2.00
Mode		2
Std. Deviation		.503
Variance		.254
Skewness		-.360
Std. Error of Skewness		.137
Kurtosis		-.446
Std. Error of Kurtosis		.274
Sum		546
Percentiles	25	1.00
	50	2.00
	75	2.00

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17-20	93	29.3	29.5	29.5
	21-30	213	67.2	67.6	97.1
	31 +	9	2.8	2.9	100.0
	Total	315	99.4	100.0	
Missing	System	2	.6		
Total		317	100.0		

Appendix 5a

MARITAL STATUS

Statistics

MASTATUS

N	Valid	316
	Missing	1
Mean		1.93
Std. Error of Mean		.015
Median		2.00
Mode		2
Std. Deviation		.267
Variance		.071
Skewness		2.885
Std. Error of Skewness		.137
Kurtosis		8.768
Std. Error of Kurtosis		.273
Sum		610
Percentiles	25	2.00
	50	2.00
	75	2.00

MASTATUS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	23	7.3	7.3	7.3
	Single	292	92.1	92.4	99.7
	Divorced	1	.3	.3	100.0
	Total	316	99.7	100.0	
Missing	System	1	.3		
Total		317	100.0		

Appendix 5b

SCHOOL

Statistics

SCHOOL

N	Valid	317
	Missing	0
Mean		2.67
Std. Error of Mean		.041
Median		3.00
Mode		3
Std. Deviation		.725
Variance		.526
Skewness		1.806
Std. Error of Skewness		.137
Kurtosis		1.368
Std. Error of Kurtosis		.273
Sum		846
Percentiles	25	3.00
	50	3.00
	75	3.00

SCHOOL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Applied Sc. & Arts	48	15.1	15.1	15.1
	Engineering	9	2.8	2.8	18.0
	Business	260	82.0	82.0	100.0
	Total	317	100.0	100.0	

Appendix 6a

LEVEL

Statistics

LEVEL

N	Valid	317
	Missing	0
Mean		1.70
Std. Error of Mean		.045
Median		1.00
Mode		1
Std. Deviation		.805
Variance		.649
Skewness		.604
Std. Error of Skewness		.137
Kurtosis		1.200
Std. Error of Kurtosis		.273
Sum		538
Percentiles	25	1.00
	50	1.00
	75	2.00

LEVEL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First Year	165	52.1	52.1	52.1
	Second Year	83	26.2	26.2	78.2
	Third Year	69	21.8	21.8	100.0
	Total	317	100.0	100.0	

Appendix 6b

R1

Statistics

R1

N	Valid	316
	Missing	1
Mean		1.83
Std. Error of Mean		.052
Median		2.00
Mode		2
Std. Deviation		.931
Variance		.866
Skewness		1.631
Std. Error of Skewness		.137
Kurtosis		3.129
Std. Error of Kurtosis		.273
Sum		578
Percentiles	25	1.00
	50	2.00
	75	2.00

R1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	125	39.4	39.6	39.6
	Disagree	152	47.9	48.1	87.7
	Do not Mind	18	5.7	5.7	93.4
	Agree	10	3.2	3.2	96.5
	Strongly Agree	11	3.5	3.5	100.0
	Total	316	99.7	100.0	
Missing	System	1	.3		
Total		317	100.0		

Appendix 7a

R2

Statistics

R2

N	Valid	317
	Missing	0
Mean		3.91
Std. Error of Mean		.065
Median		4.00
Mode		5
Std. Deviation		1.156
Variance		1.337
Skewness		-.909
Std. Error of Skewness		.137
Kurtosis		-.121
Std. Error of Kurtosis		.273
Sum		1239
Percentiles	25	3.00
	50	4.00
	75	5.00

R2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	13	4.1	4.1	4.1
	Disagree	36	11.4	11.4	15.5
	Do not Mind	41	12.9	12.9	28.4
	Agree	104	32.8	32.8	61.2
	Strongly Agree	123	38.8	38.8	100.0
	Total	317	100.0	100.0	

Appendix 7b

R3

Statistics

R3

N	Valid	315
	Missing	2
Mean		2.45
Std. Error of Mean		.066
Median		2.00
Mode		2
Std. Deviation		1.167
Variance		1.363
Skewness		.593
Std. Error of Skewness		.137
Kurtosis		-.404
Std. Error of Kurtosis		.274
Sum		771
Percentiles	25	2.00
	50	2.00
	75	3.00

R3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	72	22.7	22.9	22.9
	Disagree	110	34.7	34.9	57.8
	Do not Mind	76	24.0	24.1	81.9
	Agree	34	10.7	10.8	92.7
	Strongly Agree	23	7.3	7.3	100.0
	Total	315	99.4	100.0	
Missing	System	2	.6		
Total		317	100.0		

Appendix 8a

R4

Statistics

R4

N	Valid	316
	Missing	1
Mean		3.44
Std. Error of Mean		.064
Median		4.00
Mode		4
Std. Deviation		1.141
Variance		1.301
Skewness		-.329
Std. Error of Skewness		.137
Kurtosis		-.666
Std. Error of Kurtosis		.273
Sum		1087
Percentiles	25	3.00
	50	4.00
	75	4.00

R4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	18	5.7	5.7	5.7
	Disagree	48	15.1	15.2	20.9
	Do not Mind	91	28.7	28.8	49.7
	Agree	95	30.0	30.1	79.7
	Strongly Agree	64	20.2	20.3	100.0
	Total	316	99.7	100.0	
Missing	System	1	.3		
Total		317	100.0		

Appendix 8b

R5

Statistics

R5

N	Valid	317
	Missing	0
Mean		3.21
Std. Error of Mean		.066
Median		3.00
Mode		4
Std. Deviation		1.176
Variance		1.382
Skewness		-.123
Std. Error of Skewness		.137
Kurtosis		-.898
Std. Error of Kurtosis		.273
Sum		1018
Percentiles	25	2.00
	50	3.00
	75	4.00

R5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	24	7.6	7.6	7.6
	Disagree	71	22.4	22.4	30.0
	Do not Mind	85	26.8	26.8	56.8
	Agree	88	27.8	27.8	84.5
	Strongly Agree	49	15.5	15.5	100.0
	Total	317	100.0	100.0	

Appendix 9a

R6

Statistics

R6

N	Valid	317
	Missing	0
Mean		2.06
Std. Error of Mean		.055
Median		2.00
Mode		2
Std. Deviation		.986
Variance		.971
Skewness		1.243
Std. Error of Skewness		.137
Kurtosis		1.651
Std. Error of Kurtosis		.273
Sum		652
Percentiles	25	1.00
	50	2.00
	75	2.00

R6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	91	28.7	28.7	28.7
	Disagree	157	49.5	49.5	78.2
	Do not Mind	43	13.6	13.6	91.8
	Agree	12	3.8	3.8	95.6
	Strongly Agree	14	4.4	4.4	100.0
	Total	317	100.0	100.0	

Appendix 9b

R7

Statistics

R7

N	Valid	316
	Missing	1
Mean		2.28
Std. Error of Mean		.064
Median		2.00
Mode		2
Std. Deviation		1.141
Variance		1.301
Skewness		.877
Std. Error of Skewness		.137
Kurtosis		-.013
Std. Error of Kurtosis		.273
Sum		721
Percentiles	25	1.00
	50	2.00
	75	3.00

R7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	80	25.2	25.3	25.3
	Disagree	141	44.5	44.6	69.9
	Do not Mind	40	12.6	12.7	82.6
	Agree	36	11.4	11.4	94.0
	Strongly Agree	19	6.0	6.0	100.0
	Total	316	99.7	100.0	
Missing	System	1	.3		
Total		317	100.0		

Appendix 10a

R8

Statistics

R8

N	Valid	316
	Missing	1
Mean		2.03
Std. Error of Mean		.057
Median		2.00
Mode		2
Std. Deviation		1.011
Variance		1.022
Skewness		.970
Std. Error of Skewness		.137
Kurtosis		.509
Std. Error of Kurtosis		.273
Sum		640
Percentiles	25	1.00
	50	2.00
	75	2.75

R8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	110	34.7	34.8	34.8
	Disagree	127	40.1	40.2	75.0
	Do not Mind	48	15.1	15.2	90.2
	Agree	23	7.3	7.3	97.5
	Strongly Agree	8	2.5	2.5	100.0
	Total	316	99.7	100.0	
Missing	System	1	.3		
Total		317	100.0		

Appendix 10b

R9

Statistics

R9

N	Valid	316
	Missing	1
Mean		2.33
Std. Error of Mean		.066
Median		2.00
Mode		2
Std. Deviation		1.171
Variance		1.371
Skewness		.733
Std. Error of Skewness		.137
Kurtosis		-.348
Std. Error of Kurtosis		.273
Sum		736
Percentiles	25	1.00
	50	2.00
	75	3.00

R9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	83	26.2	26.3	26.3
	Disagree	125	39.4	39.6	65.8
	Do not Mind	48	15.1	15.2	81.0
	Agree	41	12.9	13.0	94.0
	Strongly Agree	19	6.0	6.0	100.0
	Total	316	99.7	100.0	
Missing	System	1	.3		
Total		317	100.0		

Appendix 11a

R10

Statistics

R10

N	Valid	315
	Missing	2
Mean		3.12
Std. Error of Mean		.070
Median		3.00
Mode		4
Std. Deviation		1.244
Variance		1.548
Skewness		-.167
Std. Error of Skewness		.137
Kurtosis		1.009
Std. Error of Kurtosis		.274
Sum		984
Percentiles	25	2.00
	50	3.00
	75	4.00

R10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	38	12.0	12.1	12.1
	Disagree	67	21.1	21.3	33.3
	Do not Mind	73	23.0	23.2	56.5
	Agree	92	29.0	29.2	85.7
	Strongly Agree	45	14.2	14.3	100.0
	Total	315	99.4	100.0	
Missing	System	2	.6		
Total		317	100.0		

Appendix 11b

R11

Statistics

R11

N	Valid	317
	Missing	0
Mean		3.67
Std. Error of Mean		.069
Median		4.00
Mode		4
Std. Deviation		1.233
Variance		1.521
Skewness		-.808
Std. Error of Skewness		.137
Kurtosis		-.272
Std. Error of Kurtosis		.273
Sum		1162
Percentiles	25	3.00
	50	4.00
	75	5.00

R11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	29	9.1	9.1	9.1
	Disagree	28	8.8	8.8	18.0
	Do not Mind	53	16.7	16.7	34.7
	Agree	117	36.9	36.9	71.6
	Strongly Agree	90	28.4	28.4	100.0
	Total	317	100.0	100.0	

Appendix 12a

R12

Statistics

R12

N	Valid	317
	Missing	0
Mean		2.94
Std. Error of Mean		.067
Median		3.00
Mode		2
Std. Deviation		1.189
Variance		1.414
Skewness		.338
Std. Error of Skewness		.137
Kurtosis		-.875
Std. Error of Kurtosis		.273
Sum		931
Percentiles	25	2.00
	50	3.00
	75	4.00

R12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagre	26	8.2	8.2	8.2
	Disagree	111	35.0	35.0	43.2
	Do not Mind	82	25.9	25.9	69.1
	Agree	53	16.7	16.7	85.8
	Strongly Agree	45	14.2	14.2	100.0
	Total	317	100.0	100.0	

Appendix 12b

R13

Statistics

R13

N	Valid	316
	Missing	1
Mean		3.08
Std. Error of Mean		.073
Median		3.00
Mode		2
Std. Deviation		1.293
Variance		1.673
Skewness		.011
Std. Error of Skewness		.137
Kurtosis		1.195
Std. Error of Kurtosis		.273
Sum		973
Percentiles	25	2.00
	50	3.00
	75	4.00

R13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	36	11.4	11.4	11.4
	Disagree	90	28.4	28.5	39.9
	Do not Mind	57	18.0	18.0	57.9
	Agree	79	24.9	25.0	82.9
	Strongly Agree	54	17.0	17.1	100.0
	Total	316	99.7	100.0	
Missing	System	1	3		
Total		317	100.0		

Appendix 13

R14

Statistics

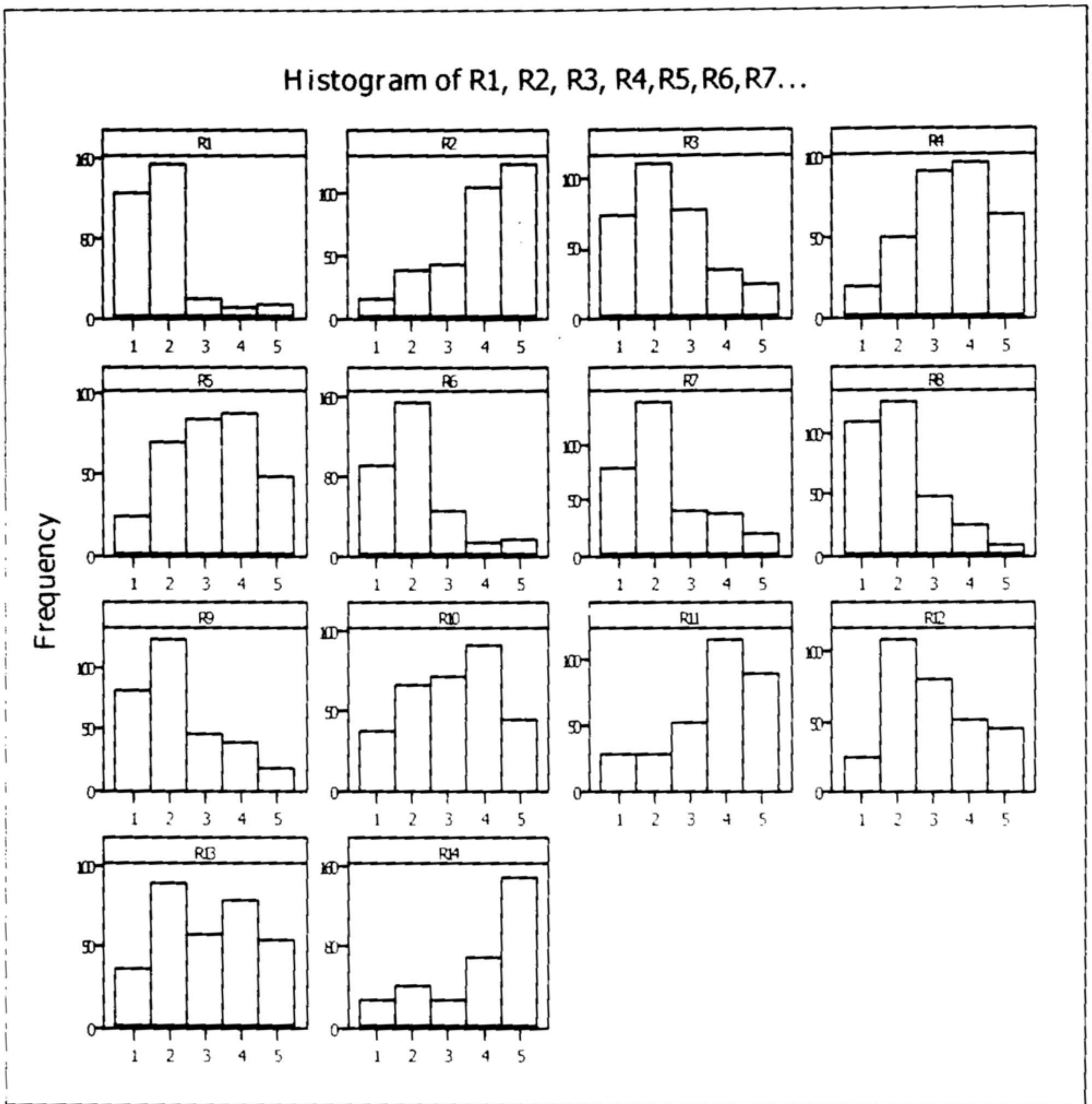
R14

N	Valid	317
	Missing	0
Mean		3.89
Std. Error of Mean		.076
Median		4.00
Mode		5
Std. Deviation		1.347
Variance		1.814
Skewness		-.932
Std. Error of Skewness		.137
Kurtosis		-.496
Std. Error of Kurtosis		.273
Sum		1233
Percentiles	25	3.00
	50	4.00
	75	5.00

R14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	26	8.2	8.2	8.2
	Disagree	41	12.9	12.9	21.1
	Do not Mind	27	8.5	8.5	29.7
	Agree	71	22.4	22.4	52.1
	Strongly Agree	152	47.9	47.9	100.0
	Total	317	100.0	100.0	

Appendix 14 Histograms of all the Indicator Variables



Appendix 15 a **DATA FOR PROJECT**

SEX	AGE	MARITAL STATUS	SCHOOL	LEVEL	R 1	R 2	R 3	R 4	R 5	R 6	R 7	R 8	R 9	R 10	R 11	R 12	R 13	R 14
2	2	1	3	2	3	5	3	4	4	1	2	3	4		1	2	3	4
2	2	2	3	2	2	5	3	3	4	1	4	2	3	4	1	2	4	2
1	2	2	3	2	1	4	3	4	4	2	3	1	3	3	2	2	4	2
2	2	2	3	2	3	5	5	5	4	2	2	1	2	3	5	3	5	5
2	2	2	3	2	1	5	3	4	5	1	1	1	1	5	5	3	5	1
2	1	2	3	2	5	5	2	2	4	3	5	5	5	5	2	5	2	5
2	3	1	3	2	1	4	3	5	4	2	2	3	2	3	4	2	5	4
2	2	2	3	2	2	5	3	5	3	3	2	2	3	5	5	5	5	2
2	1	2	3	2	2	4	5	4	5	1	2	4	2	2	3	2	5	4
2	2	2	3	2	2	4	4	4	4	2	5	3	4	4	4	3	4	5
2	1	2	3	2	1	5	1	5	5	5	1	1	5	3	5	3	5	5
2	2	2	3	2	2	2	3	1	3	4	2	3	2	4	4	3	2	3
2	2	2	3	2	2	2	3	1	3	1	2	3	2	5	4	3	2	4
2	2	2	3	2	2	4	2	2	2	2	2	2	1	4	4	2	4	5
2	2	2	3	2	5	4	4	2	4	2	4	2	2	4	4	2	5	4
2	2	2	3	2	2	4	1	5	2	1	2	1	2	5	4	4	1	5
2	2	2	3	2	2	4	3	4	3	1	2	2	2	3	4	5	4	4
2	2	2	3	2	1	4	3	4	3	2	3	2	2	3	4	5	4	5
2	2	2	3	2	2	3	3	4	4	1	2	2	2	3	4	3	4	3
2	2	2	3	2	2	5	3	3	3	2	1	1	3	3	3	3	2	2
2	2	2	3	2	2	5	3	4	3	2	1	3	2	4	5	5	5	2
2	2	2	3	2	3	5	5	5	5	5	4	5	5	5	5	4	4	5
2	2	2	1	2	2	4	1	5	4	2	2	3	3	4	5	4	5	2
2	2	2	3	2	2	4	2	4	4	2	2	2	2	2	4	4	4	4
2	2	1	1	2	1	5	3	3	1	5	4	2	2	3	1	1	1	5
2	2	2	3	2	2	5	1	4	4	2	2	1	2	4	4	4	2	5
2	1	2	3	2	2	5	1	4	4	2	2	2	2	4	5	5	4	5
1	2	2	1	2	2	4	1	2	3	3	2	1	2	2	3	2	4	5
2	1	2	3	2	5	5	4	5	4	2	4	4	5	5	5	5	1	5
2	2	2	3	2	3	5	4	4	4	1	2	1	4	4	5	1	1	5
2	2	1	3	2	3	5	2	4	4	1	3	3	3	5	5	5	5	5
2	2	2	3	2	2	5	2	5	3	2	3	2	2	2	5	5	5	2
2	2	2	3	2	2	3	2	5	3	2	3	3	3	5	5	5	5	5
2	2	2	3	2	2	5	3	4	5	2	1	1	3	3	5	4	5	5
2	2	2	3	2	4	4	4	5	5	2	4	3	2	4	3	5	3	4
2	2	2	3	2	2	5	2	4	3	1	4	1	2	5	4	4	2	5
2	2	2	3	2	5	4	2	1	2	2	4	1	2	4	3	4	3	5
1	2	1	3	2	1	2	1	2	1	3	5	3	5	3	5	1	2	1
2	2	2	3	2	1	4	2	3	2	1	1	2	2	4	5	4	3	2
1	1	2	3	2	1	3	4	3	2	3	2	2	3	3	3	2	3	5
1	1	2	3	2	1	5	2	3	1	2	1	2	2	4	4	3	3	5
1	2	1	3	2	2	3	4	3	3	2	2	3	1	3	2	4	2	1
1	2	2	3	2	2	5	4	3	3	2	2	2	2	2	2	2	2	5
1	2	2	3	2	2	4	2	4	4	2	2	1	1	3	4	2	4	5
1	2	2	2	2	2	4	2	4	4	3	3	3	2	4	4	3	2	5
1	2	2	3	2	3	5	5	3	4	2	2	2	2	3	3	2	3	4
1	2	1	3	2	1	4	1	3	5	3	1	2	3	1	5	2	3	1
1	2	2	3	2	2	4	1	3	5	3	2	4	2	5	3	2	2	4

1	2	2	3	2	3	1	2	3	4	5	1	3	1	1	4	1	2	2
1	1	2	3	2	2	5	5	2	5	4	3	3	3	4	4	3	3	2
1	2	2	3	2	2	5	1	4	3	1	2	2	1	4	5	2	2	4
1	2	2	3	2	2	4	3	4	3	4	2	2	1	3	2	2	2	4
1	2	2	3	2	4	5	3	4	4	2	1	2	4	4	4	4	4	2
1	1	2	3	2	2	5	4	4	4	1	2	4	4	4	4	4	4	3
1	2	2	3	2	2	5	3	4	4	2	4	3	2	4	4	3	4	4
1	2	2	3	2	3	5	1	3	4	2	4	3	2	3	3	4	2	5
1	2	2	3	2	3	5	4	4	3	1	2	4	4	4	4	4	5	3
1	2	2	3	2	1	5	2	3	2	1	2	3	2	4	5	3	2	5
1	1	2	3	2	1	3	1	3	3	1	1	2	1	2	4	4	2	3
1	2	2	3	2	1	4	2	3	2	1	2	2	2	3	4	3	2	5
1		2	3	2	2	2	1	4	4	1	2	2	2	4	4	2	4	2
1	2	2	3	2	2	4	2	4	4	1	2	2	2	4	4	2	4	2
1	2	2	3	2	2	4	1	4	4	1	2	1	2	4	3	2	3	1
1	2	2	3	2	2	5	1	5	1	3	2	2	3	3	5	1	2	4
1	2	2	3	2	1	4	2	4	2	2	1	1	2	2	4	2	4	4
1	2	2	3	2	2	4	2	3	2	1	1	2	3	3	4	4	1	5
1	2	2	3	2	2	5	3	3	2	3	2	3	4	4	4	3	2	5
1	3	1	3	2	2	4	3	1	2	3	2	2	2	4	5	5	4	4
1	2	2	3	2	1	5	2	4	2	1	2	1	1	3	5	4	4	3
1	1	2	3	2	2	3	1	5	2	1	1	1	1	3	5	4	3	4
1	2	2	3	2	1	4	2	3	2	1	1	2	2	4	5	3	4	5
1	2	1	3	2	1	3	2	4	2	1	1	2	1	5	3	3	4	4
1	2	2	3	2	5	3	1	3	1	2	5	3	1	2	4	3	5	2
1	2	1	3	2	1	5	1	3	1	2	5	3	4	2	5	1	3	1
1	1	2	3	3	1	3	4	2	5	3	5	1	2	3	3	1	3	2
1	1	2	3	3	1	3	3	3	2	2	2	2	4	2	2	3	4	5
1	1	2	3	3	1	2	3	4	1	2	5	1	2	3	4	1	2	3
1	1	2	3	3	1	3	2	4	1	3	5	3	1	2	4	2	3	2
1	1	2	3	3	1	2	1	5	1	3	2	4	1	3	2	5	3	4
1	1	2	3	3	1	3	2	4	5	1	3	5	2	4	1	5	3	2
1	1	2	3	3	1	2	4	3	1	5	3	4	2	5	1	3	4	2
1	1	2	3	3	1	2	4	3	1	3	4	5	2	1	5	3	4	2
1	1	2	3	3	1	3	5	2	4	1	3	5	4	1	2	3	5	2
1	1	2	3	3	1	3	2	4	1	5	2	4	1	5	3	1	2	4
1	1	2	3	3	1	3	5	2	3	1	3	2	5	2	4	3	2	1
1	1	2	3	3	2	4	1	5	4	2	3		1	3	5	2	4	3
1	1	2	3	3	1	2	4	3	5	2	3	4	1	5	2	4	1	3
1	2	2	3	3	1	2	3	1	5	3	4	3	4	1	2	5	1	3
1	1	2	3	3	5	3	1	4	2	4	3	2	1	4	3	2	5	5
1	2	2	3	3	1	3	2	4	5	5	3	2	1	2	3	1	5	4
1	1	2	3	3	1	2	3	3	4	5	1	2	4	5	1	2	3	4
1	2	2	3	3	3	1	4	2	3	4	2	2	3	1	5	1	2	3
1	1	2	3	3	1	2	1	4	5	3	3	1	2	4	2	3	5	5
1	2	2	3	3	1	2	1	3	5	4	2	4	5	3	1	3	4	1
1	2	2	3	3	1	2	4	3	5	3	1	2	4	5	1	2	3	4
1	1	2	3	3	1	3	3	2	4	5	1	2	3	4	5	2	1	4
1	1	2	3	3	2	3	1	5	4	3	3	4	2	1	4	5	2	1
1	2	2	3	3	2	1	3	4	3	4	5	2	1	3	2	5	5	3
1	2	1	2	3	2	3	2	3	3	4	3	3	2	3	3	2	4	5
1	1	2	1	3	1	3	3	3	3	2	3	5	3	2	3	4	2	5

1	1	2	3	3	1	3	3	2	3	4	4	3	4	2	3	2	3	5
1	2	2	3	3	1	2	1	3	2	3	4	3	4	1	2	3	3	5
1	2	2	3	3	1	4	3	3	3	3	3	1	2	3	2	3	4	5
1	1	2	3	3	1	2	1	3	5	2	3	1	4	4	5	2	1	3
1	2	2	3	3	1	3	2	5	4	3	1	2	5	3	1	2	3	4
2	2	2	1	3	1	3	2	5	4	2	3	1	2	4	5	5	1	3
2	2	2	1	3	2	1	5	3	2	1	2	3	5	1	3	2	4	4
1	2	2	2	3	1	3	4	3	1	2	1	3	1	2	2	3	2	5
2	2	1	1	3	2	3	2	2	1	2	2	1	2	3	4	5	2	3
2	2	2	2	3	1	5	2	3	2	1	2	2	1	3	4	4	2	5
2	1	2	2	3	1	4	1	3	2	2	1	2	1	3	4	5	2	4
2	2	2	1	3	2	1	2	4	2	2	1	2	4	4	5	1	2	1
2	3	1	1	3	2	4	1	3	2	2	2	3	1	4	3	3	2	4
2	2	2	1	3	2	3	1	3	2	1	2	2	1	3	3	4	2	3
2	2	2	1	3	2	1	2	2	4	2	1	4	2	2	4	2	4	1
1	3	1	1	3	1	2	2	4	2	2	1	2	4	2	2	1	4	1
2	2	3	1	3	1	4	2	4	2	2	1	2	4	2	4	1	2	1
2	2	2	1	2	1	5	4	2	2	2	3	2	1	1	3	2	1	5
2	2	2	3	3	1	3		4	3	2	3	1	2	4	4	3	4	5
2	1	2	3	3	2	5	4	4	3	2	2	2	2	4	3	2	1	5
2	2	1	1	3	1	4	3	4	3	2	4	2	3	4	5	3	3	5
2		2	3	3	2	2		1	4	2	1	2	2	4	5	2	5	1
2	2	2	3	3	2	4	2	4	5	2	1	2	2	4	4	2	5	2
2	2	2	1	3	1	2	2	1	2	2	1	4	2	4	4	2	4	1
2	2	2	1	3	1	2	1	2	1	2	4	2	4	5	2	4	2	1
2	2	2	3	3	1	4	5	5	5	3	4	2	2	1	3	3	2	4
2	1	2	1	3	2	3	4	4	3	2	2	1	4	3	4	3	2	5
2	1	2	1	3	2	3	2	3	2	1	2	1	3	3	1	2	3	5
2	2	2	3	3	1	4	3	3	4	3	4	2	4		4	3	4	5
1	2	2	3	3	2	5	2	2	2	2	2	2	2	5	3	3	2	5
2	2	2	3	3	1	2	5	3	3	2	2	1	2	3	3	2	4	3
2	2	2	3	3	2	5	3	4	2	1	1	1	2	4	4	2	1	5
2	2	2	3	3	2	5	4	4	4	2	2	2	4	5	5	4	4	5
2	3	1	3	3	2	5	2	3	5	2	5	2	3	2	2	4	4	5
2	2	2	3	3	2	4	5	5	5	3	2	2	3	4	5	3	2	4
2	2	2	3	3	1	5	3	2	3	2	2	1	3	4	1	1	2	5
1	2	2	3	3	1	2	3	3	3	2	2	2	2	4	1	2	3	2
1	2	2	3	3	1	2	2	3	3	2	2	1	1	2	1	2	2	4
1	2	1	3	3	2	5	2	3	2	1	1	2	2	2	4	2	4	5
1	2	2	3	3	2	5	2	1	4	2	4	2	1	4	1	1	1	2
1	2	2	3	3	2	4	2	3	3	2	2	2	2	5	3	3	3	5
1	2	2	3	3	2	5	2	3	3	2	2	2	2	4	4	3	3	5
1	2	2	3	3	1	5	3	3	3	2	1	1	2	1	3	3	4	4
1	2	2	3	3	2	5	5	5	3	5	2	1	2	5	5	3	5	5
2	2	2	3	2	2	4	1	3	2	1	1	1	1	4	4	2	2	4
1	1	2	2	2	2	4	2	2	4	4	2	1	4	4	4	3	4	5
1	2	2	2	2	2	4	3	3	3	2	2	3	4	4	4	3	3	5
1	2	2	1	2	2	5	4	5	5	2	3	4	2	4	4	4	3	4
2	2	2	1	2	1	1	3	3	3	2	2	4	2	2	4	2	2	1
1	2	2	1	2	2	4	3	5	5	1	2	2	2	5	5	2	2	5
1	2	2	1	2	2	4	1	3	3	2	2	2	1	4	4	2	3	5
2	1	2	3	1	1	4	4	2	2	2	1	1	1	2	5	5	4	5

1	2	2	3	1	1	5	5	5	5	2	1	1	1	2	5	5	5	5
1	2	2	3	1	2	4	3	4	4	2	2	1	4	3	4	3	5	5
1	1	2	3	1	1	5	5	5	5	2	2	1	2	1	1	1	2	5
1	2	2	3	1	1	4	2	4	2	2	2	2	2	2	4	2	4	4
1	1	2	3	1	2	5	2	4	2	2	3	2	5	3	5	4	4	5
1	2	2	3	1	1	2	2	2	4	1	2	1	2	5	4	2	4	4
1	2	2	3	1	3	5	3	5	4	3	4	2	3	3	5	5	3	5
1	2	2	3	1	5	5	5	4	4	4	3	4	5	5	1	3	5	5
1	1	2	3	1	2	5	3	3	4	2	2	1	1	2	3	2	4	5
1	2	2	3	1	2	4	1	2	3	1	2	2	3	3	4	4	3	5
1	1	2	3	1	1	4	1	4	1	1	1	1	2	1	2	2	2	5
2	1	2	3	1	1	3	2	3	3	3	1	1	3	2	3	1	4	2
1	2	2	3	1	2	5	1	5	2	1	2	2	1	3	3	2	2	4
1	2	2	3	1	2	4	1	5	2	1	5	2	2	2	4	4	4	5
2	2	2	3	1	4	4	1		2	2	1	1	1	4	3	5	2	5
1	1	2	3	1	4	5	1	3	4	1	2	3	1	4	5	3	4	5
1	2	2	3	1	2	5	1	5	5	1	2	1	1	2	5	5	5	5
1	2	2	1	1	1	5	3	3	3	2	2	1	1	3	4	2	2	2
2	1	2	3	1	4	5	2	3	2	2	2	3	2	4	4	3	4	5
2	2	2	3	1	1	5	1	4	3	2	4	1	2	5	5	5	4	5
1	2	2	3	1	2	4	5	5	5	2	4	2	2	4	4	4	4	5
1	2	2	3	1	2	4	2	2	2	2	2	2	2	2	2	3	4	5
1	1	2	3	1	2	5	2	5	5	1	2	1	1	1	4	2	1	2
2	2	2	3	1	2	4	3	4	5	1	1	2	2	3	5	5	2	2
2	2	2	3	1	4	4	2	2	1	1	1	1	1	1	4	4	2	5
2	2	2	3	1	5	5	3	3	3	2	1	1	1	3	3	3	5	5
1	2	2	3	1	1	1	2	3	3	2	4	2	1	1	4	3	3	2
2	1	2	3	1	4	5	3	3	4	2	2	3	2	3	4	4	2	4
2	2	2	3	1	2	4	2	2	3	2	2	1	1	4	1	2	2	2
1	2	2	3	1	1	3	3	4	4	4	1	3	3	2	3	2	3	3
1	2	2	3	1		5	3	5	5	1	5	3	3	3	3	5	5	5
2	1	2	3	1	1	4	2	1	5	1	1	2	1	5	4	4	1	1
2	2	2	3	1	5	5	3	4	3	2	1	1	1	3	5	1	3	5
2	1	2	3	1	1	1	1	1	4	5	5	5	5	5	5	5	5	5
1	1	2	3	1	1	4	2	3	3	2	1	1	3	3	4	3	3	2
2	1	2	3	1	4	5	3	4	4	2	4	1	4	4	4	4	4	5
1	2	2	3	1	2	4	2	3	3	1	1	2	2	4	1	5	5	1
1	2	2	3	1	1	1	2	1	3	5	1	2	2	4	4	1	5	1
1	2	2	1	1	1	5	2	3	3	1	4	1	2	3	4	4	2	5
2	1	2	3	1	1	4	3	3	3	1	3	1	4	5	5	5	3	4
2	2	2	3	1	2	5	2	5	4	2	2	4	3	2	5	3	5	1
1	2	2	3	1	2	5	3	4	4	2	2	3	4	4	5	5	5	3
2	2	2	3	1	2	5	2	3	2	2	2	2	3	3	4	3	3	5
1	2	2	3	1	1	4	1	5	5	1	1	1	2	2	1	2	3	5
1	2	2	3	1	2	5	2	3	5	1	1	2	2	5	4	3	3	5
2	2	2	3	2	2	5	2	3	3	2	1	1	2	2	4	3	5	4
1	2	2	3	1	2	5	4	4	4	2	2	1	1	2	4	2	4	5
1	2	2	3	1	1	2	1	4	2	1	1	1	1	1	3	2	2	4
2	2	2	3	1	1	5	4	4	4	2	2	2	2	4	4	2	4	5
1	2	2	3	1	2	5	3	4	3	3	1	1	4	4	5	4	4	3
1	2	2	3	1	2	4	1	1	4	2	1	1	1	5	4	2	2	4
2	1	2	3	1	2	4	4	4	4	5	3	3	5	4	5	3	5	4

1	2	2	3	1	2	4	2	2	1	1	5	2	1	4	4	4	4	5
1	2	2	3	1	3	4	2	4	3	2	3	2	2	4	4	4	2	5
2	2	2	3	1	2	5	5	5	4	2	2	1	1	5	4	3	4	4
1	2	2	3	1	1	5	1	3	3	2	1	2	2	1	3	2	2	5
1	2	2	3	1	1	5	1	5	2	2	5	2	4	4	4	2	2	5
2	1	2	3	1	2	1	1	3	3	1	1	5	1	1	2	2	4	1
1	1	2	3	1	1	2	4	3	1	2		3	4	2	4	2	3	4
2	2	2	3	1	2	5	2	3	1	1	1	2	1	1	5	5	5	1
2	2	2	3	1	5	4	2	4	2	2	4	1	2	5	5	3	2	4
1	2	2	3	1	1	4	2	5	1	1	1	1	1	5	5	3	2	5
2	2	2	3	1	1	4	3	3	4	2	1	1	1	2	4	2	5	4
1	2	2	3	1	1	5	3	4	2	3	5	4	5	4	5	5	4	5
1	1	2	3	1	2	3	1	1	3	3	2	1	3	3	4	4	4	4
2	2	2	3	1	2	2	2	2	1	2	2	1	1	1	4	2	1	5
1	1	2	3	1	2	4	1	4	3	1	2	1	1	3	3	2	2	2
2	1	2	3	1	1	5	2	4	5	2	1	1	3	1	4	3	4	4
2	1	2	3	1	2	1	3	3	4	2	1	1	5	2	5	3	2	2
1	2	2	3	1	2	5	2	4	3	1	1	1	2	3	4	2	5	5
1	2	2	3	1	2	4	4	2	4	2	2	2	2	4	4	4	2	5
2	2	2	3	1	1	4	1	4	2	2	4	1	1	2	4	2	2	4
1	1	2	3	1	1	4	1	2	3	1	1	1	2	3	4	2	4	5
1	2	2	3	1	1	3	5	5	5	2	1	2	4	3	4	4	4	4
1	1	2	3	1	3	3	3	3	3	3	3	1	1	3	3	3	3	3
2	2	2	3	1	2	5	2	4	4	2	2	2	4	4	4	2	2	5
1	2	2	3	1	2	3	4	3	2	1	1	2	3	4	5	5	5	3
2	1	2	3	1	3	2	3	2	3	2	2	2	2	3	3	2	2	3
1	2	2	1	1	2	4	1	2	1	2	2	1	2	2	4	2	2	4
1	2	2	1	1	2	5	4	5	5	2	1	3	1	2	1	4	1	5
2	2	2	2	1	1	4	2	2	3	1	1	1	2	5	3	2	4	1
2	1	2	3	1	2	5	5	2	4	2	2	1	2	3	5	2	5	2
1	2	2	2	1	2	4	2	4	2	3	2	4	4	2	4	1	2	4
1	2	2	1	1	2	3	3	2	2	3	2	1	2	3	2	3	3	4
1	1	2	1	1	1	5	2	2	3	2	2	2	2	3	3	2	3	4
1	2	2	1	1	2	4	2	5	2	2	2	2	2	2	2	2	5	5
1	2	2	1	1	2	4	1	2	2	3	3	3	2	1	3	3	2	5
2	2	2	1	1	2	2	2	5	3	1	1	2	3	2	4	5	2	5
2	1	2	1	1	2	5	2	5	3	1	1	2	3	4	5	3	1	5
2	2	2	1	1	2	5	2	4	4	2	2	2	2	2	4	5	2	5
1	1	2	1	1	1	4	3	4	4	1	1	1	1	5	5	1	1	5
2	2	2	1	1	2	5	3	2	5	1	2	3	4	4	5	3	1	5
1	2	2	1	1	2	4	2	3	4	1	2	3	2	3	4	2	3	4
1	3	1	1	1	2	4	2	2	2	2	2	2	4	2	2	4	2	5
1	2	1	1	1	2	5	1	2	5	1	1	2	3	2	5	3	1	4
1	1	2	1	1	2	5	3	2	1	3	2	3	1	1	2	3	3	4
1	2	2	1	1	1	4	1	5	2	1	1	1	1	1	1	3	1	5
2	2	2	1	1	2	4	3	3	4	2	4	2	3	4	5	2	2	3
1	2	2	1	1	2	4	1	4	3	3	2	3	2	4	5	3	4	3
1	2	2	1	1	2	5	1	5	3	1	2	3	1	1	5	4	1	5
1	1	2	1	1	2	5	2	5	5	2	2	2	2	2	5	4	4	5
1	1	2	1	1	1	1	5	5	5	5	5	1	5	1	5	5	5	5
1	2	2	1	1	2	4	2	4	2	3	2	2	4	4	3	2	2	5
1	2	2	1	1	2	4	4	5	3	3	1	2	1	5	5	3	3	2

2	1	2	3	1	2	5	2	5	5	2	2	1	4	5	5	2	2	4
1	1	2	3	1	2	2	1	4	3	2	4	2	2	3	2	2	1	2
2	2	2	3	1	4	4	3	4	4	2	3	4	3	4	5	3	2	4
1	2	2	3	1	2	5	2	3	2	1	2	2	1	4	4	3	3	5
2	2	2	3	1	2	5	3	3	2	1	2	2	3	2	4	2	3	2
2	2	2	3	1	3	5	4	3	2	2	3	4	3	2	1	1	4	5
2	2	2	3	1	1	2	2	1	4	2	1	2	1	1	1	4	5	5
1	1	2	3	1	2	2	1	3	2	2	3	2	1	2	4	3	1	2
1	2	2	3	1	1	5	3	4	4	2	3	2	2	5	4	2	5	5
2	1	2	3	1	1	5	4	5	5	2	3	1	1	5	5	5	5	5
1	2	1	3	1	2	3	3	5	4	2	2	1	1	4	5	5	5	5
2	2	2	3	1	3	5	2	5	2	1	2	1	5	5	5	2	5	4
1	1	2	3	1	2	4	2	5	2	2	2	2	2	4	1	5	1	4
1	1	2	3	1	1	5	2	3	2	2	4	1	3	4	3	2	4	5
1	2	2	3	1	4	5	1	5	2	2	2	2	2	3	4	3	4	5
1	2	2	3	1	1	5	2	4	5	2	3	1	2	2	4	4	5	5
1	2	2	3	1	2	4	2	4	4	2	2	2	2	2	4	3	4	4
1	1	2	3	1	3	2	3	2	3	2	3	2	2	2	2	2	4	4
1	2	2	3	1	1	4	4	2	4	1	1	1	1	5	5	4	1	4
1	2	2	3	1	1	5	2	4	4	2	2	2	2	2	4	2	2	5
2	1	2	3	1	2	3	2	1	4	2	2	2	2	4	4	2	2	2
2	1	2	3	1	2	4	2	4	4	1	2	2	2	2	3	2	2	5
2	1	2	3	1	2	4	2	4	4	2	2	1	2	5	5	4	4	5
2	2	2	3	1	1	5	1	3	3	1	2	2	1	1	3	2	1	4
2	2	2	3	1	2	5	1	3	4	1	2	2	2	2	4	2	4	1
2	1	2	3	1	2	2	3	5	5	1	2	1	3	2	5	2	3	2
2	1	2	3	1	2	5	2	3	3	2	4	2	3	2	5	2	3	5
2	2	2	3	1	1	5	3	5	3	3	2	1	3	3	5	2	1	5
1	1	2	3	1	2	5	2	4	4	2	1	1	2	4	4	3	4	5
1	2	2	3	1	1	5	5	4	5	3	4	3	2	4	5	4	3	5
1	1	2	3	1	1	4	2	5	4	1	4	1	1	1	1	1	4	5
2	2	1	3	1	2	5	1	3	2	2	2	1	1	3	3	2	5	5
2	1	2	3	1	1	5	1	2	4	1	5	1	2	1	5	4	1	5
2	2	2	3	1	2	4	2	4	4	2	2	2	3	3	3	2	5	5
2	2	2	3	1	1	5	2	2	3	3	2	3	2	2	4	3	2	3
2	1	2	3	1	1	3	2	3	3	2	4	2	3	4	3	2	4	3
2	1	2	3	1	1	5	1	2	2	1	1	1	1	1	4	2	1	4
2	1	2	3	1	2	5	2	3	3	2	2	2	2	3	5	4	2	5
2	2	2	3	1	1	5	5	5	5	1	1	1	1	1	5	5	1	5
2	1	2	3	1	2	2	1	1	2	1	2	1	4	2	2	2	1	4
2	1	2	3	1	1	4	2	5	2	2	2	1	1	4	4	4	2	5
2	2	2	3	1	1	5	2	1	3	3	2	1	3	2	1	2	3	5
1	2	2	3	1	2	5	3	4	4	2	2	4	2	3	5	2	2	4
1	2	2	3	1	1	4	2	5	4	2	1	1	2	3	5	5	2	5
1	2	2	3	1	1	5	1	2	2	2	2	1	1	1	4	2	1	5
1	3	2	3	1	1	4	5	4	5	2	1	1	5	1	1	3	5	4
1	1	2	3	1	2	4	3	5	3	2	5	2	1	2	5	5	3	5
1	1	2	3	1	2	2	2	4	4	1	1	2	1	4	4	2	5	2
1	1	2	3	1	2	5	1	1	4	2	4	1	2	3	1	3	3	5
1	2	2	3	1	5	5	3	5	4	2	2	1	2	4	4	2	2	5
1	2	2	3	1	1	4	2	2	2	1	2	1	1	1	4	1	3	2
1	2	2	3	1	1	4	3	5	5	2	2	1	2	2	4	2	5	5

1	2	2	3	1	3	3	3	3	3	3	2	2	4	5	5	5	2	5
1	2	2	3	1	1	4	3	5	4	1	2	1	2	4	5	3	3	5
1	2	2	3	1	2	4	1	2	2	1	2	1	3	4	4	2	4	5
1	2	2	3	1	1	4	1	4	3	2	2	2	1	2	3	2		5
1	2	2	3	1	2	4	2	3	3	2	2	3		1	5	1	2	1
1	2		3	1	2	4	1	4	2	1	2	2	1	4	1	2	1	4
2	3	1	3	1	1	4	2	4	4	1	4	4	1	2	4	2	3	5
2	3	1	3	1	2	5	3	4	3	2	3	2	5	5	3	3	2	5
2	1	2	3	1	1	5	1	5	3	2	2	2	3	3	3	3	2	5

Appendix 15 b *Eigen-value Analysis Table*

Total Variance Explained

Total Variance Explained

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	2.145	15.322	15.322
2	1.934	13.817	29.139
3	1.312	9.372	38.511
4	1.149	8.204	46.715
5	.994	7.100	53.815
6	.923	6.593	60.408
7	.891	6.366	66.774
8	.791	5.653	72.427
9	.743	5.309	77.736
10	.713	5.095	82.831
11	.700	5.001	87.832
12	.637	4.551	92.384
13	.615	4.393	96.777
14	.451	3.223	100.000

Extraction Method: Principal Component Analysis.

Appendix 16

QUESTIONNAIRE ON FACTOR ANALYSIS OF APPLICANTS CHOICE OF CAPE COAST POLYTECHNIC

UNIVERSITY OF CAPE COAST

DEPARTMENT OF MATHEMATICS & STATISTICS

This questionnaire is designed by MSc. Statistics student for academic purpose to seek information from Cape Coast Polytechnic students on some of the reasons that influence their choice of the school. Your opinion will help in determining the main potentials of polytechnic that attracts prospective polytechnic students. Any information given on this questionnaire will be held in utmost confidence.

Please complete this questionnaire to the best of your ability. Thank you very much.

Factors Influencing Prospective Polytechnic Student's Choice of Cape Coast Polytechnic

SECTION A

1. Sex Male [ ] Female [ ]

2. Age 17 – 20 years [ ] 21 – 30years [ ] 31 years and above [ ]

3. Marital Status Married [ ]
   Single [ ]
   Divorced [ ]
   Separated [ ]
   Widowed [ ]

4. School Applied Science & Arts [ ]
   Engineering [ ]
   Business [ ]

5. Level First Year [ ]
   Second Year [ ]
   Third Year [ ]

SECTION B

6. Please indicate from the table below, the reasons that influenced your choice of Cape Coast Polytechnic using the five point Likert scale.

(Please rate the following in a 5 point scale; ticking only one option for each question)

	Reasons	Strongly Agree	Agree	Do not Mind	Disagree	Strong Disagree
1	Has lucrative academic programmes					
2	Cost of living relatively cheaper.					
3	Tourist attraction in Cape Coast					
4	Enjoy family ties					
5	Meet old friends					
6	Exposure to new environment					
7	Has more conducive learning atmosphere					
8	Excelling graduates from Cape Coast Polytechnic					
9	Enjoy education in the Central Region					
10	Has attachments to industries					
11	Proximity (close to my place of work/ home)					
12	Convenience					
13	Was introduced by a friend / relative etc					
14	Accommodation cheaper in the C-Poly					

Thank you for your cooperation

Appendix 17 **CODE BOOK**

SECTION A

1.	Sex	Male -1	Female-2	2
2.	Age	17 – 20 years		1
		21 – 30years		2
		31 years and above		3
3.	Marital Status	Married		1
		Single		2
		Divorced		3
		Separated		4
		Widowed		5
4.	School	Applied Science & Arts		1
		Engineering		2
		Business		3
5.	Year	First Year		1
		Second Year		2
		Third Year		3

SECTION B

	Reasons	Strongly Agree	Agree	Do not Mind	Disagree	Strong Disagree
1	Has lucrative academic programmes	1	2	3	4	5
2	Cost of living relatively cheaper					
3	Tourist Attraction in Cape Coast					
4	Enjoy family ties					
5	Meet old friends					
6	Exposure to new environment					
7	Has more conducive learning atmosphere					
8	Excelling graduates from Cape Coast Polytechnic					
9	Enjoy education in the Central Region					
10	Has attachments to industries					
11	Proximity (close to my place of work/ home)					
12	Convenience					
13	Was introduced by a friend/ relative etc.					
14	Cheaper accommodation in the C-Poly					