

**THE INFLUENCE OF MARKETING COMMUNICATION ON
STUDENTS' DECISIONS TO ENROL AT
DURBAN UNIVERSITY OF TECHNOLOGY**

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DECLARATION

I hereby declare that, except where indicated, this dissertation represents my own work, and that all references, to the best of my knowledge are accurately indicated.

PORTIA HELEN REDMOND

DEDICATION

I dedicate this study to all the supportive family, friends and colleagues who have encouraged me to complete this Masters'. In particular, I would like to thank:

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Abstract

Marketing communication strategies are now imperative in the Higher Education arena. Understanding the prospective students' choice and determining the sub-groups into which they fall, provides the basis for a well-planned strategy for marketing communications practitioners at Durban University of Technology (DUT).

The purpose of this study is to review the effectiveness of the current marketing communication strategies of DUT, and to establish how first time enrollees make choices when selecting a Higher Education institution at which to study.

This study uses quantitative descriptive methods of convenience sampling of the January 2009 intake of students. Although specific to DUT, the findings of this study may also be of interest to other Universities of Technology that are assessing their marketing communication strategies.

Research implications in this study identify the most appropriate means of marketing communications for the DUT brand in the context of prospective student choice. At the close of this cross-sectional research, the study provides proposals for future marketing initiatives for DUT.

The results of the study may be used in determining more appropriate marketing campaign strategies and initiatives to establish DUT as a first choice brand in our competitive arena.

The value of this study is that it supports the opinion that the focus of marketing communication strategies must continually be modified in response to a changing market.

TABLE OF CONTENTS

DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
LIST OF TABLES	viii
LIST OF FIGURES	ix
CHAPTER 1	
1.1 BACKGROUND TO THE RESEARCH	1
1.2 PROBLEM STATEMENT	2
1.3 AIMS AND OBJECTIVES	3
1.4 RATIONALE FOR THE STUDY	3
1.5 SCOPE OF THE STUDY	4
1.5.1 Delimitations	4
1.5.2 Limitations	4
1.6 RESEARCH METHODOLOGY	4
1.6.1 Research Design	4
1.6.2 Population/Sample	5
1.6.3 Sampling Method	5
1.6.4 Data Collection	5
1.6.5 Data Analysis	7
1.7 DEFINITIONS OR KEY TO ABBREVIATIONS	7
1.8 OUTLINE OF REPORT	7
1.8.1 Chapter 2 and 3: Critical Review or literature	7
1.8.2 Chapter 4: Research Methodology	8
1.8.3 Chapter 5: Analysis Results	8
1.8.4 Chapter 6: Conclusions and Recommendations	8
1.9 CONCLUSION	8
CHAPTER 2	
2.1 INTRODUCTION	9
2.2 CONSUMER BEHAVIOUR AND CONSUMER CHOICE	9
2.2.1 Consumer Behaviour in Higher Education	9
2.2.2 The Choice Process	11
2.2.3 Consumer choice models	13
2.2.3.1 Model of Students Choice for International HEIs	13
2.2.3.2 Status attained, economic and combined models	14
2.2.3.3 Theoretical foundations of an individual's choice	15
2.2.3.4 The Three Stage Model of Choice	17
2.2.3.5 Integrated model of Higher Education choice	18
2.2.3.6 Environmental influences on consumer choice	20
2.2.3.7 Consumer process in decision-making	21
2.2.3.8 Conceptual Model: Contemporary Higher Education Student Choice	22
Chapter 3	
3.1 HIGHER EDUCATION MARKETING AND DUT	24
3.1.1 Focussed Marketing Approach	24
3.1.2 Forming Markets by Building Higher Education Institution's Reputation	25
3.1.3 The Emergence of Marketing in Higher Education	25
3.1.3.1 Marketing Management Activities – Marketing mix	26
3.2 MARKETING COMMUNICATIONS	28
3.2.1 Marketing communications: products becoming brands	29
3.2.2 Marketing communication practitioner's roles	29

3.2.3	Concept of Higher Education branding	29
3.3	USE OF MARKETING COMMUNICATIONS TO SHIFT ATTITUDES	30
3.3.1	Competitive advantage and marketing strategies	35
3.4	MARKETING COMMUNICATION OBJECTIVES AND DUT	36
3.4.1	Marketing Communications at DUT	37
3.4.1.1	DUT's communication strategy: pro's and con's	37
3.4.1.2	DUT's marketing objective	38
3.4.1.3	DUT's future strategy suggested	38
3.4.2	Higher Education Marketing and Recruitment Strategies at DUT	39
3.5	SEGMENTATION	40
3.5.1	Subgroups within the target audience	41
3.5.2	Decision making as applied by subgroups	46
3.6	CONCLUSION	47
CHAPTER 4		
4.1	INTRODUCTION	49
4.2	RESEARCH DESIGN	49
4.3	POPULATION	50
4.4	SAMPLING	50
4.4.1	Method	50
4.4.2	Size	51
4.5	DATA COLLECTION	51
4.5.1	Instrument development	52
4.5.2	Obtaining respondents	54
4.5.3	Administering the questionnaire	54
4.5.4	Collection problems	55
4.6	DATA ANALYSIS	56
4.6.1	Analysis of data in this study	57
4.6.1.1	Univariate Analysis	57
4.6.1.2	Bivariate Analysis	58
4.6.2	Validity and Reliability	58
4.6.2.1	Reliability	58
4.6.2.2	Validity	58
4.7	CONCLUSION	59
CHAPTER 5		
5.1	INTRODUCTION	60
5.2	UNIVARIATE ANALYSIS	60
5.2.1	Descriptive analysis	60
5.2.2	Profile statistics	61
5.2.2.1	Gender representation of this study	62
5.2.2.2	Age groups represented in this study	62
5.2.2.3	Race groups identified in this study	62
5.2.2.4	Gross monthly income per household	63
5.2.2.5	Faculty representation in this study	63
5.2.2.6	Discussion of Demographics	64
5.2.3	Factors influencing choice of which HEI to attend	65
5.2.4	Communication Initiatives used by DUT	66
5.2.4.1	Communication media and their effectiveness	68
5.3	BIVARIATE ANALYSIS OF VARIABLES	76
5.3.1	Introduction	76
5.3.2	Chi-square test of independence	76
5.3.3	Cross-tabulation of demographic variables and influence criteria	78
5.3.4	Cross-tabulation of Location with Age	80
5.3.5	Cross-tabulation of communication initiatives and demographics	81

5.3.6	Cross-tabulation of various media and demographics	85
5.3.6.1	Career guide magazines	85
5.3.6.2	Newspaper career information, advertising and supplements	86
5.3.6.3	Cross-tabulation of Age with Newspapers	90
5.3.7	Demographic Variable of Age Group Cross-Tabulated with Career Information/Guidance Publications	91
5.3.8	Radio stations Used in DUT Marketing Communications	92
5.3.8.1	Radio stations cross-tabulated with Age groups	94
5.3.9	Internet	95
5.3.10	Messaging services	99
5.3.11	Media access	102
5.4	CONCLUSION	103
CHAPTER 6		
6.1	INTRODUCTION	104
6.2	CONCLUSIONS ABOUT RESEARCH QUESTIONS	104
6.2.1	Key Criteria Influencing Choice	104
6.2.2	Marketing Communication Initiatives Influences of Student Choices	106
6.2.3	The Most Effective Media	106
6.2.4	Influencing Factors for Various Demographic Variables	109
6.3	CONCLUSIONS ABOUT THE RESEARCH PROBLEM	109
6.4	IMPLICATIONS FOR THEORY	111
6.5	IMPLICATIONS FOR POLICY AND PRACTICE	112
6.5.1	Traditional Means of Communication	112
6.5.2	Word of Mouth	113
6.5.3	New Territory in the Existing Strategy	114
6.5.4	Website and Print Media	114
6.6	LIMITATIONS	114
6.6.1	Infancy Stages of Electronic Questionnaire Usage at DUT	114
6.6.2	Questionnaire Development and testing	115
6.6.3	Representative of Faculty Proportion	115
6.7	RECOMMENDATIONS FOR FURTHER RESEARCH	116
LIST OF REFERENCES		118
LIST OF APPENDICES		127
Appendix A – Questionnaire		128
Appendix B – Additional Tables and Figures		132

LIST OF TABLES

Table 5.1	Respondents details per faculty, age, language, race group and gender	64
Table 5.2	Factors influencing choice – ordered from the most important to least important according to weighted ratios.	65
Table 5.3	The most helpful source of assistance for choice of HEI at which to study	66
Table 5.4	Newspapers used in the DUT marketing strategy	70
Table 5.5	Newspapers ranked in order of importance	70
Table 5.6	Radio stations used in the DUT marketing strategy	71
Table 5.7	DUT Website Evaluation	72
Table 5.8	Website influence to study at DUT	73
Table 5.9	Networking sites and internet messaging services	74
Table 5.10	Respondents' indication of media usage	75
Table 5.11:	Demographic cross-tabulation with Influence factors	78
Table 5.12:	Cross-tabulation of radio with race, income, language and age	82
Table 5.13:	Cross-tabulation of Television with gender, race and language	82
Table 5.14:	Cross-tabulation of Posters at School with faculty, race and language	83
Table 5.15:	Open Day at schools and DUT Open day with 'faculty'	84
Table 5.16:	Cross-tabulation analysis of Word of Mouth with faculty, race and language	84
Table 5.17:	Cross-tabulation of print, electronic media or personal interaction with income	85
Table 5.18:	Cross tabulation of publications with language, gender, faculty, income and race	85
Table 5.19:	Cross-tabulation of newspapers with race, language, income and faculty	87
Table 5.20:	Cross-tabulation of radio stations with race, language, income and faculty	92
Table 5.21:	Cross-tabulation of Internet with race, language, gender, income and faculty	96
Table 5.22	Frequency of use of internet/cellular messaging and social network systems	99
Table 5.23	Cross-tabulation significance of media access with demographic variables	102

LIST OF FIGURES

Figure 2.1:	Consumer Decision making process	11
Figure 2.2:	Purchase Funnel Model	12
Figure 2.3:	A model of students' preferences/choice in the selection of International HEI's	14
Figure 2.4:	A conceptual model of the size of nested sets of alternatives in university choice decisions	17
Figure 2.5:	An integrated generic higher education student-choice model	19
Figure 2.6:	Environmental influences on the customer information processes	20
Figure 2.7:	The consumer decision process	21
Figure 2.8:	Contemporary higher education student-choice model	22
Figure 5.1	Gender demographic variables	62
Figure 5.2	Age groups	62
Figure 5.3	Gross income groups per household	63
Figure 5.4	Faculty representation	63
Figure 5.5	DUT marketing initiatives shown as observed and expected values	67
Figure 5.6	Publications used in strategic plan from very important to least important	69
Figure 5.7	Internet usage	72
Figure 5.8	Recommendation of respondents to study at DUT	75
Figure 5.9	Exposure to multiple media sources	75
Figure 5.10:	Age groups cross-tabulation with location	80
Figure 5.11:	Cross-tabulation of age groups with Friend/relative studied at DUT	81
Figure 5.12:	Results charted for cross-tabulation of age groups with Isolezwe newspaper	90
Figure 5.13:	Results charted for cross-tabulation of age groups with the Ilanga newspaper	90
Figure 5.14:	Graphic chart of cross-tabulation analysis of radio stations with age	94

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND TO THE RESEARCH

At the on-set of this study, interest in marketing the Durban University of Technology (DUT) was influenced by experience gained by the researcher as a marketing communication practitioner, marketing DUT from 2005. Research in this area was inspired by an interest in determining whether the marketing of DUT had an impact on the decision making of first year - first time enrollees in their selection of a tertiary institution at which to study. Information collected via research done for the Division of Corporate Affairs by Gattonby (2008), reports that a number of socio-economic, leadership and safety issues effect the choice of DUT as an institution at which to study. Aspects which negatively affect the choice of DUT are the incidence of strikes, changes in Vice-Chancellors, leadership – (being under an Administrator appointed by the Department of Education (DoE)), as well as safety and security issues.

Research into higher education (HE) choice, or consumer behaviour in Higher Education markets, although not extensive, is principally stimulated by an individual institution's need to anticipate the long-term implications of choice and to understand the key factors involved in student choice (Foskett and Hemsley-Brown, 2001: 11). The attempts by governments to enhance the quality of HE through the encouragement of market forces is based on an assumption that students are, or will become, informed consumers, making rational choices of Higher Education programme offerings and institutions at which to study (Baldwin and James, 2000: 23).

An aspect which has not been investigated has been the effectiveness of marketing communications used by DUT and whether this has influenced University of Technology (UoT) selection. Many tertiary institutions still use only one message and only one medium to target prospective students.

1.2 PROBLEM STATEMENT

One of the key themes of the empirical research identified for this study into higher education marketing were issues related to marketing communications and the dissemination of marketing information in the context of choices made by potential students of higher education. This provided inquiry into marketing communication strategies at higher education institutions and student choice models in the literature review.

Other researchers have conducted investigations into enrolment initiatives at DUT (Pillay, 2010), branding Higher Education institutions (HEI's) (Ivy, 2001) and the effectiveness of the 2007-2008 DUT advertising campaign (Gatonby, 2008).

Mortimer (1997: 225) concluded that there was a "lack of market orientation and customer focus and those universities could achieve competitive advantage if they became more aware of students' needs to provide more information in their marketing communications".

A more holistic problem identification approach to the study of marketing communications was taken by Gray, Fam, and Llanes (2003: 113). They state in their literature that their focus is primarily on the brand. They investigated the media which students used to gain information about universities, concluding that the World Wide Web (www) and print media were perceived to be the most important sources of university information. These sources of literature all guided this researcher to determine the following research problem.

The research problem has been identified;

The advent of the mergers of various tertiary institutions in South Africa forming Further Tertiary Colleges of Education, Comprehensive Colleges of Education, Universities of Technology and traditional Universities, has resulted in a need for a better understanding of the influence and effectiveness of marketing communication and brand strategies on student decisions regarding their choice of HEI at which to study.

1.3 AIMS AND OBJECTIVES

The overall aim of this study was to assess DUT's marketing communication strategy and its effectiveness in attracting students.

Objectives were to:

- establish which key criteria influenced the choice of first time, first year students to study at DUT;
- establish which forms of marketing communications used by DUT informed the respondents' choice;
- establish the effectiveness of different marketing media in influencing respondents' choice to enrol at DUT;
- identify the extent to which the influencing factors differ according to demographic factors.

1.4 RATIONALE FOR THE STUDY

This study required a number of first year, first time (enrolees) students to be questioned, reviewing the effectiveness of the current marketing communication strategies of DUT. At the close of this cross-sectional research the study was intended to provide proposals for future marketing of DUT, i.e. identifying the most efficient means of reaching the specified target market and reviewing the awareness levels of the students with regards to DUT's brand. It intends to show how students make decisions when selecting an institution at which to study and therefore how to identify the most appropriate means of marketing communications for the DUT brand.

The results of the study can then be used to assist in determining a more appropriate marketing campaign to establish DUT as a first choice brand in the competitive arena.

These findings, although specific to DUT, will also be of interest and helpful to other Universities of Technology who are assessing their marketing communication strategies.

1.5 SCOPE OF THE STUDY

The Scope of the study is subject to limitations.

1.5.1 Delimitations

The following delimitations were applicable to the study.

- The study was limited to Durban University of Technology first year students enrolled for the first time in 2009.
- The study surveys were limited to being conducted during term-time and not during test-weeks.
- The study was limited to availability of computer laboratories which were available for dedicated use during the period of the study.
- The study was limited to the availability of research assistants from BTech Marketing and Retail students to assist with collecting the surveys.

1.5.2 Limitations

The following limitations apply to the study:

- There is always a danger of sample error occurring when a small sample is used.
- It is acknowledged that some error is inevitable and acceptable.
- Although the DUT first year students are used as the sample for this study the findings should not be extrapolated to all higher education institutions with any confidence (Bonnema and Van der Walddt, 2008: 324).

1.6 RESEARCH METHODOLOGY

The study is aimed at determining the factors which influenced the students' decision making processes, and at determining which marketing media they identified with in their decision to study at DUT.

1.6.1 Research Design

The research used the survey approach, gathering data from a number of respondents within a restricted time frame. Surveys are used to gather data from a relatively large number of respondents within a limited time frame (Naoum 2001: 44).

The study also used quantitative methods that are generally concerned with counting and measuring (Blaikie, 2001: 232). From the sub-objectives, it can be seen that the research attempts to describe attitudes towards the DUT marketing communication strategies and factors influencing these attitudes.

1.6.2 Population/Sample

The target population was established by (DUT) Management Information Systems as 6024 first year students (first time enrolees). This information was obtained in March 2009 and supplied as DUT enrolees in from January of that year.

The sample was a non-probability sample (Cooper and Schindler, 2006: 448). A convenience sample was drawn from first time, first year enrolees. This specific data was therefore not required to be generalised or to refer to an entire population beyond the DUT.

1.6.3 Sampling Method

The target population, according to enrolment statistics at DUT, is 6024 first year first time students enrolled in January 2009. It is believed that a sample size of 341 is needed for this research study and is justified by Sekaran (2003: 294), who states that for a population of 6000 – 6999, the respondent sample is sufficient to represent the population.

1.6.4 Data Collection

A questionnaire for this study will be broadly based on questions from Gattonby's (2008) questionnaire where some of the factors are similar and some exactly the same. However, as Gattonby's questionnaire was aimed at determining strategic results, it had to be amended to include identifying the demographic sub groups into which first time first year student's fall and to further determine the extent to which students engage with the DUT brand, which is detailed in section 4.5.1.

The models of student choice used in studies by Briggs (2006: 713) and Helgesen (2008: 56) were incorporated into this studies questionnaire to cover the five dimensions of environmental influences on buyer information processing; culture,

social class, situational influences, groups and communications situations (Fill, 2002: 83).

Perceptions and attitudes of first year students at DUT were investigated using closed questions which were appropriate to self-completion questionnaires run during term time with a selection of first year students across the faculties and campuses. A covering letter ensured that the respondents were informed of the nature and purpose of the research. Research questions were structured in the simplest terms, making it easier to be understood by every respondent. The questionnaire included demographic questions involving personal information such as age, race and gender.

Bonnema and Van der Waldt's (2008: 325) study guided the direction in which this researcher posed questions in the area of what influenced prospective student choice to study at a Higher Education Institution as detailed in section 4.5.1.

Data was collected through the use of questionnaires which were administered by the researcher to respondents during late 2009. The questionnaire was tested by the statistician in consultation with the researcher, to ensure this instrument would adequately test the intent of the study. After this evaluation, recommended amendments were made to the questionnaire where after the survey was tested on a group of seven, first time, first year Retail students at DUT. This then facilitated a further refinement of the wording of a couple of questions before the survey was formally begun.

The researcher's intention was to proceed with surveying groups of seventy students at a time in a specific computer laboratory with permission of various lecturers of first year programmes. In so doing a variety of first year students (from all faculties at DUT) would be asked to complete the questionnaire. A single teaching period would be used to complete the survey. With the assistance of helpers (BTech research interns), a large number of electronic questionnaires would be administered to respondents via the use of the computer laboratory, collecting and saving the completed survey onto external hard drive storage devices.

In actuality the researcher had to modify the technique of acquiring the first year students to do the survey to use two staff from her department to question students determining that they were first time first year students and inviting them to complete the survey in 6 smaller computer laboratories on 4 campuses at DUT as detailed in chapter 4.

1.6.5 Data Analysis

Data was analysed by the statistician using Statistical Package for Social Sciences (SPSS Version 15) and the respective descriptive and inferential statistical techniques were used to determine the frequency and cross tabulation results.

1.7 DEFINITIONS OR KEY TO ABBREVIATIONS

DoE	Department of Education	NSFAS	National Student Financial Aid Scheme
DUT	Durban University of Technology	NQF	National Qualifications Framework
HE	Higher Education	UoT	University of Technology
HEI	Higher Education Institution/s	WoM	Word of Mouth
HESA	Higher Education South Africa	XML	Extensible Mark up Language
MC	Marketing communications		

1.8 OUTLINE OF REPORT

The structure of the dissertation is as follows:

1.8.1 Chapter 2 and 3: Critical Review or literature

In the Literature Review chapter an overview of consumer behaviour including the choice process is reviewed where some models of choice are studied. As a result of the path of study, the researcher reviewed consumer behaviour in higher education. Various models of consumer choice were reviewed to understand higher education choice and the consumer process in decision-making.

A focussed higher education marketing approach and the emergence of marketing in HE were reviewed to build the foundation of marketing efforts in higher education by developing HEI's reputation. The elements of the marketing effort were reviewed, namely – the 4Ps, 4Cs, 5Ps and 7Ps. Marketing Communications (MC) initiatives used in higher education were accessed paying particular attention to MC strategies

which were reviewed. It was noted how these were used to shift attitudes of prospective consumers.

Segmentation strategies were reviewed and four variations were identified as behavioural; demographic; psychographic and geographical differences. Literature identified that within the segmented market, higher education institutions are required to identify their sub-groups from the target audience. The reviewed readings provided the information that marketing practitioners should avail themselves of the decision making process their prospective students would use as applied by the sub-groups in order to determine their competitive advantage and marketing strategies.

1.8.2 Chapter 4: Research Methodology

The research methodology chapter describes the type of research used, the sampling method used as well as the data collection procedure and the techniques used in data analysis.

1.8.3 Chapter 5: Analysis Results

In this chapter the analysis of the data collected from the study is reported. The analysis provided significant results. These results form the basis of discussion.

1.8.4 Chapter 6: Conclusions and Recommendations

In the final chapter conclusions are drawn from the empirical findings relative to the literature reviewed. The implications of these findings are stated for further research to given recommendations.

1.9 CONCLUSION

This chapter introduces the study, identifying the background to the research, the problem statement, aims and objectives, rationale for the study and scope of the study. These include the delimitations and limitations. The research methodology, research design, population/sample, sampling method and data collection are explained prior to stating the form of data analysis used. The definitions used in the report are defined and lastly the outline of the report is itemised. In the next chapter a detailed review of relevant literature will be presented.

CHAPTER 2

CRITICAL REVIEW OF CONSUMER BEHAVIOUR LITERATURE

2.1 INTRODUCTION

In this chapter, the literature on how consumers process information and on the complex nature of the choice process is reviewed. Choice Models are explored in conjunction with the process prospective students' use in choosing a higher educational institution at which to study.

This chapter focuses on consumer behaviour in higher education markets where the process of choice is multifaceted and requires the marketing communication practitioners at the Higher Education Institution to be aware of the choice influences and the socio-economic subgroups which make up the consumer/prospective student. A number of models of choice are examined in order to determine how the prospective student forms choices on which tertiary institution at which to study.

The various communication and marketing mixes are reviewed before addressing the marketing communication objectives available to Higher Education Institution in general and those of the DUT, in particular. The chapter then focuses on branding and the role of marketing communications, the use of marketing communication to shift attitudes and brand management and brand extension. Finally, this chapter considers decision-making as applied by subgroups, competitive advantage and marketing strategies and the higher education marketing and recruitment strategies used at DUT.

2.2 CONSUMER BEHAVIOUR AND CONSUMER CHOICE

Blackwell, Miniard and Engel define "Consumer behaviour as the activities people undertake when obtaining, consuming, and disposing of products and services" (2006: 80).

2.2.1 Consumer Behaviour in Higher Education

The definition of consumer behaviour can be expanded to the context of Higher Education to describe consumer behaviour as the activity that prospective students undertake in order to select a higher education product/service. Fill (2002: 80)

identifies how consumers, or prospective students, process information. He states that cognitive theory provides an insight into the manner in which buyers, or prospective students in this study, use a variety of influences to determine choice. These influences are personality, perception, learning, attitudes and aspects pertinent to the wider environment. The decision to purchase Higher Education or enrol into a tertiary institution to gain a higher qualification, lead the researcher to consider the elements of the choice process adopted by prospective students (Fill, 2002: 86). The purchase situation is intrinsic to the programmes offered in Higher Education Institution, the standard of education in respect to the qualification acquired upon completion, the reputation of the Higher Education Institution and the employment opportunity this qualification offers the successful student. These influences are identified in the external influences and occur in the socio cultural environment of the Integrated Generic Higher Education Student-Choice Model of Vrontis, Thrassou and Melanthiou, (2007: 986), discussed in Section 2.2.2 of this chapter.

Marketing communication practitioners need to be aware of the fundamentals of consumer choice, developing an understanding of how these affect their target audience. Understanding consumer behaviour means that the marketing messages may be created to match the cognitive needs of the intended audience. Perceptions or attitudes may, as a result, be modified in such a way that communication with the prospective students is more likely to be successful in persuading a choice to enrol at their institution (Fill, 2002: 86).

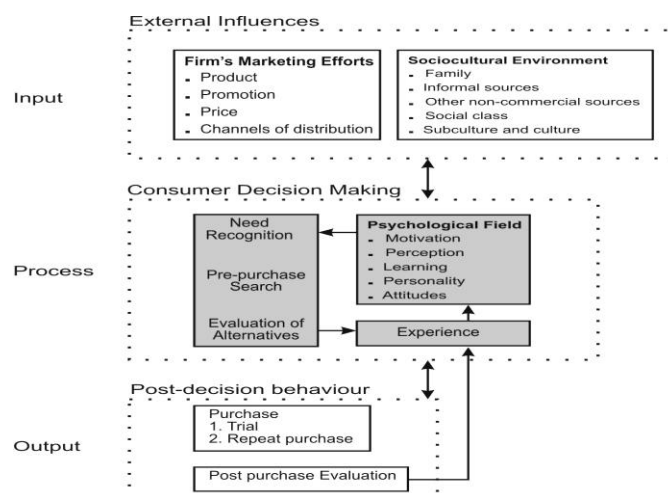
Binsardi and Ekwulugo (2003: 320) indicate that although there is substantial literature on the marketing of higher education, and consumer behaviour studies on the selection process of which Higher Education Institutions to attend, this researcher has found little evidence of marketing strategies being implemented by Higher Education Institutions to position themselves in order to capture their target audience. Research into Higher Education Institution choice, or consumer behaviour in Higher Education markets, has been stimulated principally by an individual institution's need to anticipate the long-term implications of prospective student's choice. In understanding the pivotal factors involved in student choice (Foskett and Hemsley-Brown, 2001: 35) marketing communication practitioners are thus able to

direct strategic marketing communications with appropriately targeted media towards their selected audience with greater success and therefore the choice process is now considered.

2.2.2 The Choice Process

The first step of the Consumer Decision-Making Process is need recognition as indicated in Figure 2.1. Need recognition is triggered by a combination of individual and environmental or external influences, and is typically more straightforward in an advanced society where these needs are typically taken care of. These needs are recognised as physiological such as food, water, and shelter. The attention of consumers focuses on the satisfaction of other needs (Rayner and Easthope, 2001: 158). In order to satisfy the needs of the prospective student the marketing communication practitioner is required to recognise the elements of what the consumer (prospective student) seeks to fulfil. Recognition of these needs enables the communication information to be directed towards specific products or brands, primarily by effective marketing communication initiatives. This marketing initiative may temporarily or even permanently change tastes, preferences, attitudes and beliefs of these consumers (Vrontis and Thrassou, 2007: 792).

Figure 2.1: Consumer decision making process



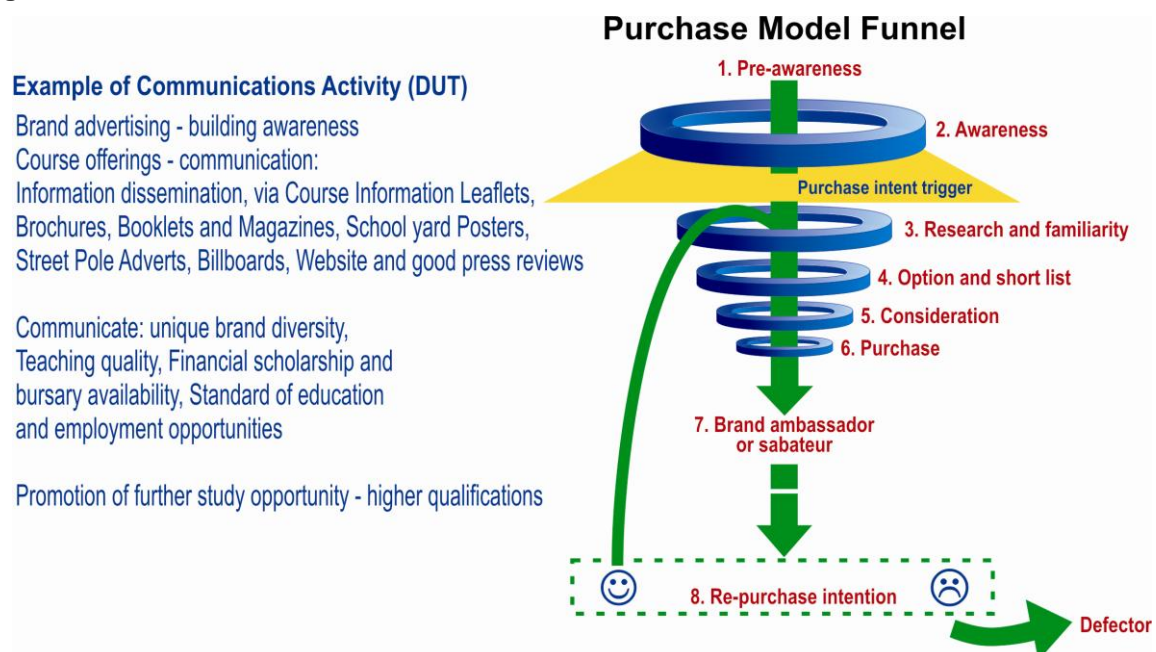
Source: Schiffman and Kanuk, (2004: 554).

Prospective students purchasing tertiary education make decisions on where to study on the basis of their need recognition, pre-purchase search and evaluation of Higher Education Institution alternatives available to them as seen in Figure 2.2. The

Purchasing Funnel Model indicates the process the prospective student follows from pre-awareness to re-purchase intention. In Figure 2.2 the Purchase Funnel Model was adapted, by this researcher, to include DUT communication activity, indicated on the left, showing the input correlation to prospective student choice corresponding to the purchasing decision process.

The prospective students conduct this process with the knowledge of increased information and through an informed decision making processes. This suggests that DUT's target market contemplate many more factors in their decision making process than they have done in the past (Moogan and Baron, 2003: 275).

Figure 2.2: Purchase Funnel Model



Source: Adapted from Marketing-made-simple.com Purchase Funnel Model (2010)

The choice of where to study is multifaceted because applicants have a variety of Higher Education Institutions from which to choose, each with differing reputations, educational focus, location, infrastructure and physical environment (Foskett and Hemsley-Brown, 2001: 15). Ancil states that the matter of which Higher Education Institution to attend conveys the aspects of who or what influences prospective students encounter when faced with this decision (2008: 10).

Carlson and Fleisher (2002: 1099) state that the importance and value of higher education is unquestionable, and that increased education leads to employability,

higher salaries, longer working lives, more career mobility, and a higher quality of life, adding that “higher education is career preparation”.

These factors all strengthen and influence the personal choice prospective students make to study further, and employment prospects play a pivotal role in reasons of choice. Bourke (2000: 110) found that enhanced career prospects and higher status were among the main personal factors influencing the choice to study at a Higher Education Institution.

Within the context of increasing competition, Higher Education Institutions are forced to equip themselves with the necessary marketing intelligence and information about their prospective students to enable them to compete in the Higher Education market (Binsardi and Ekwulugo, 2003: 320). Briggs (2006: 707) asserts that this process makes it essential to conduct an in-depth investigation into the causes and effects of customer behaviour (prospective students’ choice) within various sectors or subgroups, as well as the motivators that underlie choice.

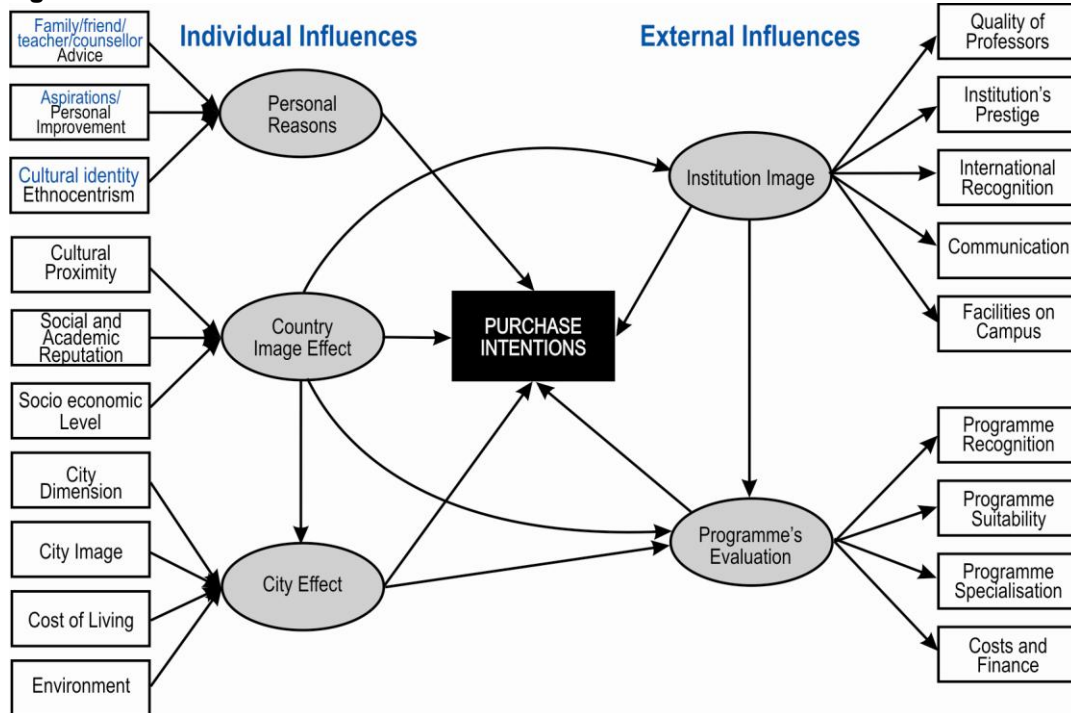
2.2.3 Consumer choice models

Studies into consumer decision-making process described in Figure 2.1 kick off the use of the purchase funnel model in Figure 2.2 to develop a generic model of choice. Further to the model of choice from literature by Cubillo, Sánchez and Cerviño developed for student choice in an international setting of higher education institutions other researchers’ choice models are examined in this section.

2.2.3.1 Model of Students Choice for International HEIs

In their study of international students’ decision-making process, Cubillo, Sánchez and Cerviño (2006: 104) use the model depicted in Figure 2.3 with this researcher’s adaptation indicated in blue. The model comprises the purchase intention, as a dependent and not observable variable; of four factors as defined herein. These factors are, personal reasons; country image effect or city effect; institutional image and programme evaluation. Nineteen independent variables (both individual and external criteria) surround the four factors and apply influence on the variables which determine purchase intention.

Figure 2.3: A model of students' choice in the selection of International HEI's



Source: Adapted from Cubillo, Sánchez and Cerviño, (2006: 107).

Although this model was used to determine the preferences in selection of Higher Education Institutions internationally, there is one factor which can be traced through to other models in this study and that is personal reasons (Cubillo, Sánchez and Cerviño, 2006: 107).

2.2.3.2 Status attained, economic and combined models

A number of models have arisen from the literature on higher education management. These include economic models, status attainment models and combined models. Each model tries to rationalise a once-considered irrational and inexplicable aspect of human behaviour, attempting to provide an understanding into how students endeavour to satisfy their need as to which higher education institution to attend (Vrontis, Thrassou and Melanthiou, 2007: 981).

One of the economic models proposed by Kotler and Fox (1985: 82), and revised a later by Hossler, Braton and Coopersmith (1989: 236) and again a decade later Hossler, Schmit and Vesper (1999: 56), shows a somewhat more comprehensive version of the model. It is used to examine the decision making process that

prospective students embark upon when enrolling in an institution of higher education.

Economic, or econometric, models use the idea that people choose a Higher Education Institution based on the level of value that each institution offers. This is shown in Figure 2.3, where the factors of programme evaluation and institutional image are illustrated as the external influences [the adaptation shown by this researcher] (Cubillo, Sánchez and Cerviño, 2006: 107). In order for this calculation to take place, costs and benefits must assume a measurable value. Comparing the costs for a particular higher educational institution with the perceived benefits gives the rough calculation, taking into account the prospective student's personal preferences (Hossler, Schmit and Vesper, 1999: 35; Manski and Wise, 1983: 27).

Sewell and Shah (1968: 22) developed the Status Attainment Model which differs from economic models in that they describe students as rationally deciding which Higher Education Institution offers the highest value, whereas the economic models describe a process that considers the decision determinants developed throughout the consumers' life. The behavioural variables of students, (such as students' academic performance), interact with background variables (such as the social status of parents), to determine students' educational aspirations. The value of combining the economic models with the status attainment models as proposed by Hossler, Braton and Coopersmith, (1989: 275) permits researchers to understand the decision making process which a prospective student embarks upon. This researcher examined the models in the literature mentioned above and focussed on the impact these models have in determining choice. This leads one to consider the influences on choice for the individual.

2.2.3.3 Theoretical foundations of an individual's choice

The notion of evoked sets was the foundation concept defined by Howard and Sheth, (1969: 416) as "...those brands the buyer considers when he/she contemplates purchasing a unit of the product or type of product". The evoked set is defined as "The set of choices that are salient or kept in mind when a purchase is made" (Rigney and Associates, 2010).

Narayana and Markin (1975) extended the principle by creating a model of the evoked set formation process, which states that the Awareness Set is composed of evoked, inert, and inept sets. The awareness set refers to those brands that are known to the consumer in a particular product class. Moreover, the evoked set contains brands that are acceptable to the consumer. The researcher in this study adapted the Dawes and Brown conceptual model of alternatives in university choice decisions using the formulation of the awareness set as evoked set of acceptable brands as shown in Figure 2.4 where the adaptations are indicated in blue.

Dawes and Brown defined the inept set as consisting of brands that are unacceptable to the consumer, and the inert set consisting of brands for which the consumer holds in neutral views (2003: 5).

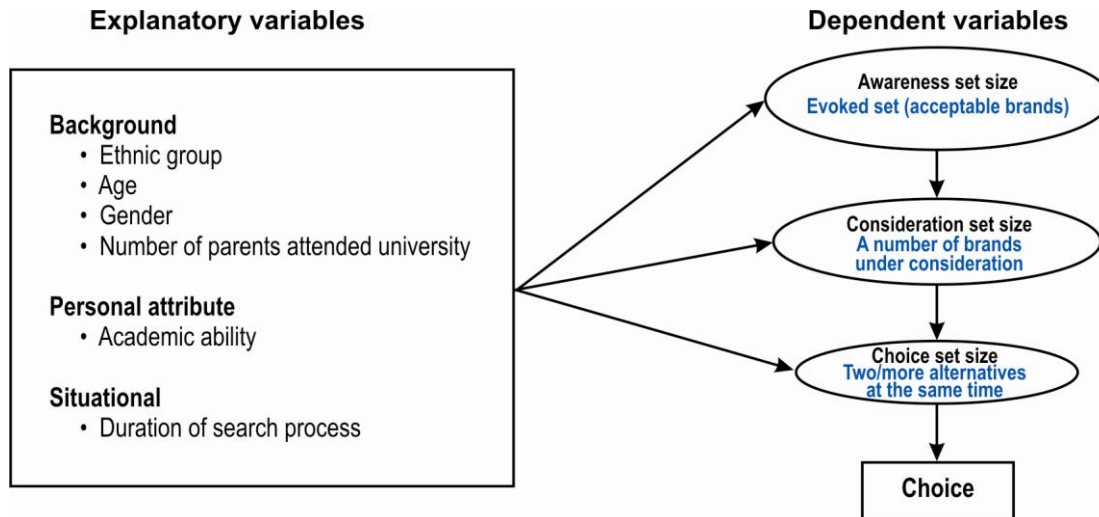
More recently, using the term consideration set as opposed to evoked set, Shocker, Ben-Akiva, Boccara, and Nedungadi, (1991), developed a process model of brand consideration. This model views consumer decision making as being based upon four hierarchical or nested sets of alternatives: the universal set, awareness set, consideration set, and choice set. The authors propose that, except for the first, these sets are processed by the decision maker prior to choice. The choice set usually involves a choice of two or more alternatives being available at the same time and can provide the HEI with an understanding of why they may be a first choice institution (Spiggle and Sewall, 1987: 100). The first set, the universal set, refers to the totality of all alternative brands that could be purchased by a consumer.

In such purchase situations, where there may be several hundred potential brands (academic institutions), it seems highly likely that the majority of students will have a decision-making process that is characterised by moving successively from an awareness set, to a consideration set, to a choice set, to a choice. Dawes and Brown note that some researchers do not distinguish between consideration set and choice set and use either term for the same construct (2003: 6).

The variables included in the Dawes and Brown model of undergraduate university choice are depicted in Figure 2.4 with this researcher's adaptations indicated in blue. Moreover, and in line with Shocker, Ben-Akiva, Boccara, and Nedungadi, (1991) Process Model of brand consideration, it is suggested that the convention of

depicting latent constructs in ovals and items directly observable or measurable in rectangular boxes when building this model.

Figure 2.4: A conceptual model of alternatives in university choice decisions



Source: Adapted from Dawes and Brown (2003: 7).

2.2.3.4 The Three Stage Model of Choice

The prospective enrollee's decision-making choice is described by Desjardins (2002: 533) as being a three stage process. During the first stage, the formulation of higher education aspirations, are usually determined during the formative high school years. Stage two involves the determination and selection of a type of higher education institution at which to study. This may include the pre-enrolment interest and even application to the choice set institution/s and usually occurs when the learners are in their final year of secondary schooling. The last stage involves the period of acceptance from the pre-enrolment interest to the offer of a position within the choice set institution/s, culminating in the registration at a specific Higher Education Institution.

If we consider the Desjardins (2002: 533) three-stage model, combine it with Chapman's (1981: 495) pre-search and search stages, it can be determined that similar processes may occur. In the first stage, factors like family income have a direct effect on which HEIs are considered. At this point it should be noted that Chapman developed a causal model, which attempts to demonstrate the relationships between student and institutional characteristics and college decision

making (1981). Jackson (1982) defined college choice as a process of preference, exclusion, and evaluation.

A combination of Chapman and Jackson models were developed by Hanson and Litten (1989: 73), where they established that within these three stages there exist five distinct processes that prospective students pass through: having higher education institution aspirations; starting the search process; gathering information; applications initiative, and enrolling.

Using the models previously discussed, Figure 2.5 provides an adaptation of the Vrontis, Thrassou and Melanthiou, (2007: 986) model based on the South African Higher Education environment.

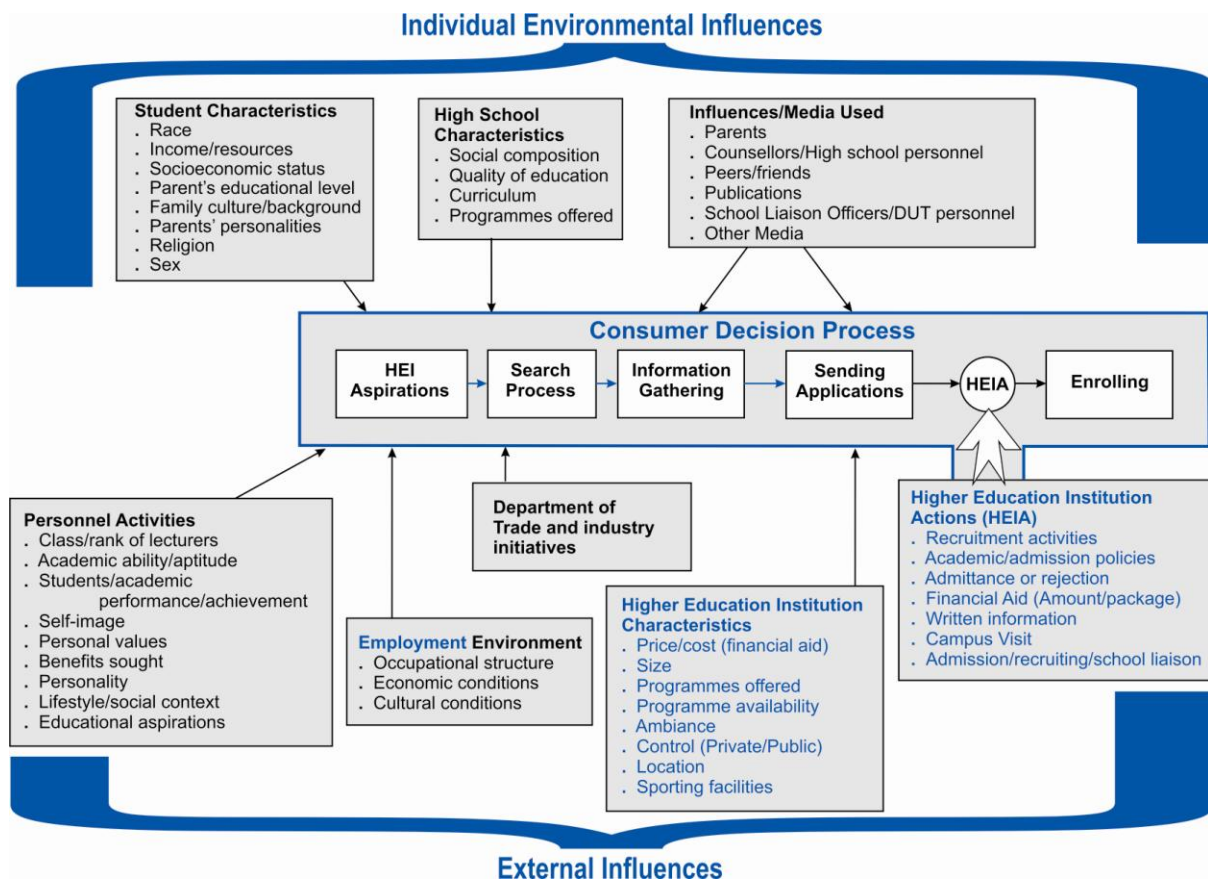
This process model shows multiple variables which affect Higher Education Institution choice; namely, race and family culture, quality and social composition of high school, parents and student liaison counsellors at the schools which the learners attend, self image and personality, economic conditions of the environment, financial aid availability, recruitment activities of higher education institutions, size and programmes offered by Higher Education Institutions.

These criteria all have an effect on choice for the prospective student. Similarly marketing practitioners must be aware of the effects of pre-purchase evaluation of alternatives, though here, branding plays a vital role in prospective students' decision-making (Vrontis, Thrassou and Melanthiou, 2007: 983).

2.2.3.5 Integrated model of Higher Education choice

Figure 2.5 provides a descriptive, contemporary basis for a new marketing direction, incorporating all factors into a single model, therefore assisting marketing communication practitioners in their marketing efforts (Vrontis, Thrassou and Melanthiou, 2007: 986). This researcher has adapted this model to show the individual influential factors, external influential factors as well as showing the steps to the choice process. The external factors which hold the most influence in this study are also shown in blue, namely; the Higher Educational Institution Actions and the Higher Educational Institution Characteristics.

Figure 2.5: An Integrated Generic Higher Education Student Choice Model



Source: Adapted from Vrontis, Thrassou and Melanthiou, (2007: 986).

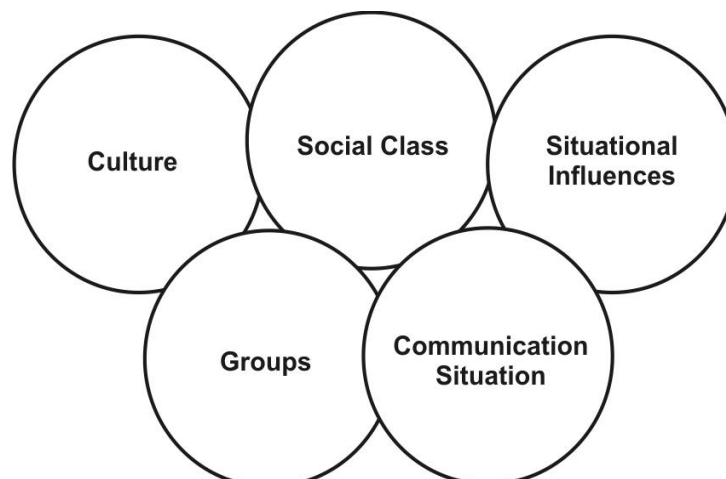
The consumer decision process would move the prospective student from the aspiration stage, through the search process and into the information gathering stage. Through the strategic influence of marketing communication, at the stage of searching and information gathering, the Higher Education Institution marketing practitioner has a greater effect on the prospective students' need recognition (Vrontis, Thrassou and Melanthiou, 2007: 983). By placing all the information via the correct media at the correct time before the targeted prospective students, the practitioner may be able to ensure the recruitment desired by the Higher Education Institution. As a result of technological accessibility, the intensity of marketing communications and increased options for prospective students, the search for information is more complex, efficient and effective (Vrontis, Thrassou and Melanthiou, 2007 983).

2.2.3.6 Environmental influences on consumer choice

In considering Figure 2.5, the elements of individual environmental criteria are captured in Student characteristics, high school characteristics and influences or media used and all influence the decision making process. The Student Characteristics: Race, Income/resources, Socioeconomic status, Parent's educational level, Family culture/background, Parents' personalities, Religion and gender/sex form the situational influences illustrated in Fill's (2002: 83) model of environmental influences (Figure 2.6). High School Characteristics: Social composition, Quality of education, School Curriculum and Programmes offered form the basis for the level of education or sub-group to which Bonnema and Van Der Walt refer, as discussed in Segmentation 3.1 of the next chapter.

Influences/Media Used: Parents, Counsellors/High school teachers, Peers/friends, Publications, School Liaison Officers/DUT personnel or other Media fall into the communication situation of the environmental influences model of Figure 2.6. In this model the influences are illustrated as social class, groups, communication situation and situational influences. Marketing practitioners should take cognisance of the full scope of these influences in order to structure a suitable strategy for targeting the quality student.

Figure 2.6: Environmental influences on the customer information processes

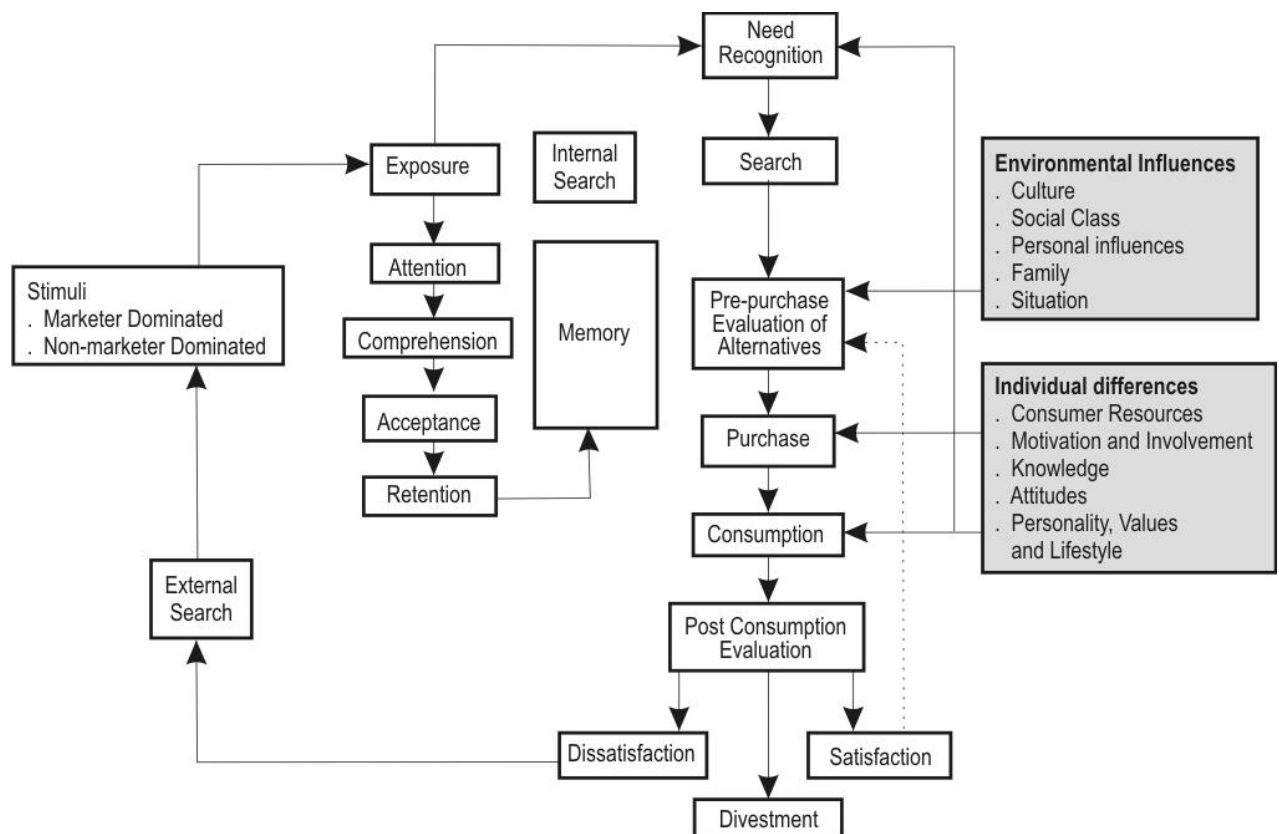


Source: Fill (2002: 83).

2.2.3.7 Consumer process in decision-making

The consumer decision process in Figure 2.7, as determined by Blackwell, Miniard and Engel (2006: 89) also incorporates environmental influences. This develops the model of choice to the degree that it includes modes of stimulus, the process of stimulation, the internal questioning and processing influenced by the individual requirements.

Figure 2.7: The consumer decision process.



Source: Blackwell, Miniard and Engel (2006: 89).

The environmental influences and individual differences are indicators in determining the subgroups into which prospective students will fall. In the Vrontis, Thrassou and Melanthiou (2007: 793) study, they examine choices and decisions made by their respondent and cite the above decision making model as the process which these respondents followed.

Bonnema and Van der Waladt (2008: 324) identify various subgroups in their geographic research of the Cape Metropolitan area. These groups are described in the form of sectors with the “have lots” on one end of the scale to the “new lifers”.

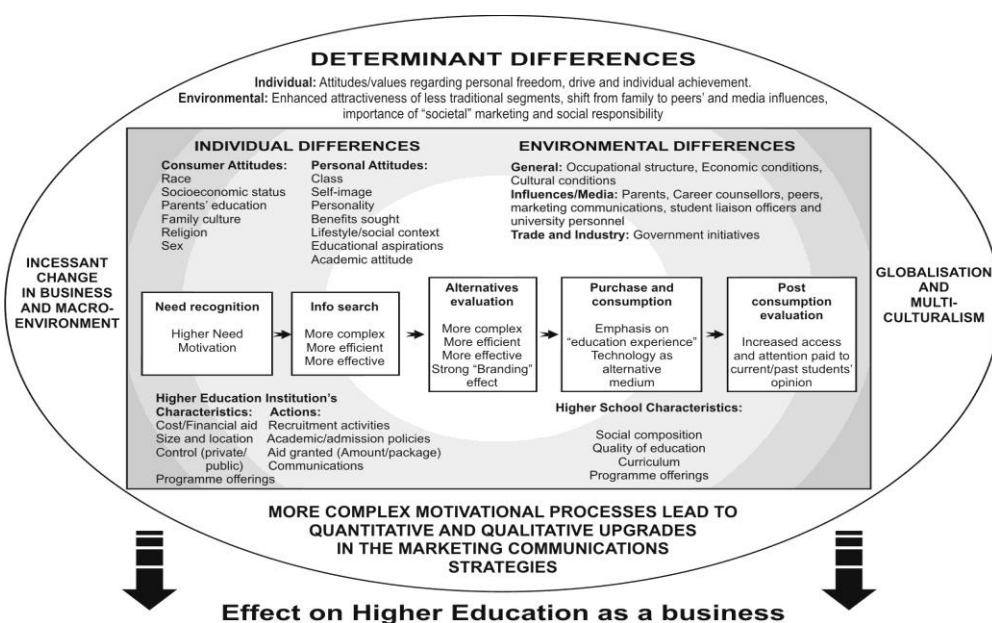
These are discussed in detail later in this chapter in section 2.5 on segmentation. In each subgroup the environmental influences are integral in their decision making process.

2.2.3.8 Conceptual Model: Contemporary Higher Education Student Choice

The intensity of competition in the Higher Education environment and the corresponding change in prospective student messaging methods means that traditional marketing communication mediums are becoming less effective. This change, combined with the need for branding, creates a demand for improved marketing communication (Vrontis, Thrassou and Melanathiou, 2007: 986).

Building on the generic Student Choice model depicted in Figure 2.5, Vrontis, Thrassou and Melanathiou developed the model displayed in Figure 2.8 where the core features of the Classic Consumer Behaviour Decision Model were used. They inserted a five step process relating specifically to Higher Education. The model merges the purchase and consumption steps into one and shows the differentiating factors in relation to consumer behaviour. Consumers make decisions after moving through various stages of the decision making process and this, at least theoretically, applies to the full range of consumer decisions, includes that of educational choice (Myers, 1991).

Figure 2.8: Contemporary higher education student-choice model.



Source: Vrontis, Thrassou and Melanathiou (2007: 986).

In Figure 2.8, Vrontis, Thrassou and Melanthiou, (2007:986) considered the representative models and applied an integrated process to provide practical marketing management implications on higher education establishments. These are indicated as a five step process. They have taken the criteria of Blackwell, Miniard and Engel (2001: 89), model of individual differences and environmental influences, as well as those criteria derived in the generic higher education student choice model. These differences and influences were applied to the business of higher education (Vrontis, Thrassou and Melanthiou, 2007: 986). The limitations of this model reveal it is a conceptual model and thus in need of testing.

Vrontis, Thrassou and Melanthiou, (2007: 986) identified effects which impact Higher Education strategies and the most pertinent points are outlined herein:

Customer needs are manifested into wants which are intangible, of obscure value, sentimental in nature and naturally vulnerable to marketing communications; perception has become a critical factor of success, accordingly the ability of Higher Education Institutions to create value through building positive brand image as a transferable commodity to the student.

There is heightened competition and a corresponding cognitive saturation of customers in relation to Higher Education Institutions, thus resulting in traditional marketing communications strategies becoming less effective. The need for branding to be enhanced and thus a need for improved marketing communications either through new channels or through amplification of existing ones has become paramount; consequently, a demand for improved marketing communication through new channels has become imperative.

If marketing practitioners heed the points above and note the influences in the decision-making process, it could assist in guiding universities to determine the appropriate strategies. This would assist Higher Education Institutions to forecast where their quality students would come from and determine which influences the subgroups value, from a decision-making perspective. The ultimate reward will be that scarce HEI resources can be directed to marketing communication strategies with optimal return on investment. In practicing these strategic plans a focussed marketing approach will be required.

Chapter 3

CRITICAL REVIEW OF HIGHER EDUCATION MARKETING, COMMUNICATION AND SEGMENTATION LITERATURE

3.1 HIGHER EDUCATION MARKETING AND DUT

Since the early 2000's, the South African educational landscape has undergone many changes. These have influenced the choice perceptions and consumer behaviour of prospective students. Tertiary institutions (Further Tertiary Education Colleges, Universities of Technology and Universities) were merged in the period between 2000 and 2004 forming new institutions. A National Qualifications Framework (NQF) was applied to regulate the programme offerings which are provided by the newly created Comprehensive Colleges, Universities of Technology and traditional Universities. This process was created to meet the requirements of both the NQF and the specific needs of industry in the South African economy and to reach the Government's objectives for equity, efficiency and development (Bonnema and Van Der Waladt, 2008: 315).

Due to the changes in the educational landscape, marketing and marketing communication strategies have been subjected to changes. Until the late 1980s, tertiary institutions operated in a regulated environment, with definitive monetary subsidies assured by the Department of Education.

Given South Africa's political history, the resulting levels of the socio-economic circumstances of different South Africans have created a marketplace where HEI's marketing communication practitioners now have to produce strategies which are both informed and heterogeneous in nature (Mzimela, 2002:1-2).

3.1.1 Focussed Marketing Approach

Higher education institutions require a more focussed marketing approach to increase their influence on consumer choice. As the prospective student (the purchaser of tertiary education) becomes better informed, so the role of marketing becomes imperative to steering the choice decision toward justification for choices made (Foskett and Hemsley-Brown, 2001: 32). Effectively informed marketing

communications would not only influence the decision-making process but may positively influence choices made. This suggests implementation of informed focussed marketing strategies, through reliable marketing intelligence and a prediction of choice.

3.1.2 Forming Markets by Building Higher Education Institution's Reputation

The only way in which marketing communication practitioners in higher education can truly assist their universities is to “make markets” (Biggin, 2000: 14). The concept of authentically creating new markets is extremely significant in the higher education sector, given that academic reputation is one of the factors that influence the prospective student's choice. Kotler and Fox (1995: 75) state:

“...an institution's actual quality is often less important than its prestige, or reputation for quality, because it is the university's perceived excellence which, in fact, guides the decisions of prospective students and learners, considering offers of employment and regional/government agencies awarding grants as influencing criteria.”

Whilst traditional universities may well rely on the perceived reputations, newer universities and universities of technology, with a professional or vocational focus, are faced with developing reputations in abrupt time frames, as their newly made markets come and go extremely quickly in today's society (Briggs, 2006: 708).

The predictors of student choice assist the marketing communication practitioners in developing dynamic specialist strategies which are used to target specific subgroups as discussed in detail in Section 3.5 on segmentation.

3.1.3 The Emergence of Marketing in Higher Education

Research that emerged in the 1990's interpreted marketing within the narrower definition of marketing communications. This was based on the assumption that in order for any HEI to market itself successfully, both managers and marketing communications practitioners would need to examine the decision-making process of potential students' search for information. This was corroborated by Mortimer (1997: 225) who concluded that there was a “...lack of market orientation and customer focus and that universities could achieve competitive advantage if they became more

aware of 'prospective' students' needs and provided more information in their marketing communications". Further studies by Gatfield, Barker and Graham, (1999: 73) and Hesketh and Knight, (1999: 115), revealed that the content of the print communications provided by HEI to applicants was limited. On this basis Mortimer, (1997: 238) criticised universities for the absence of information that, she claimed, put prospective students at a higher risk of making a poor choice when deciding on which HEI to choose.

Higher educational institutions now recognise the need to be marketed in a competitive environment that is often global. Substantial literature on the transfer of the practices and concepts of marketing from other sectors to HE was developed (Gibbs, 2001: 85). Nguyen and Le Blanc, (2001: 303) focused on publicising the image and reputation of institutions which falls into the promotional mix of marketing the HEI. They referred to the crucial role promoting the factors played in the development of market positioning, drawing on the well-established concepts and theories in the business sector marketing, for their study.

Binsardi and Ekwulugo (2003: 318) claim that "...a centrally important principle of marketing is that all marketing management activities, (marketing mix) should be geared towards the customer". They also relied on the principles used in traditional marketing, which they applied to higher education.

3.1.3.1 Marketing Management Activities – Marketing mix

The marketing mix was concept was developed by E J McCarthy who grouped product, price, place and promotion from the originally published article by Neil Borden (1964). This was then developed into a consumer centred classification by Robert Lauterborn (1993) and further adapted into a 7 Ps, approach as these concepts were tailored in accordance with the requirements of marketers who faced a more challenging amorphous business environment in which they practiced. The extended marketing mix comprises people, product, price, place, promotion, physical evidence and process or procedure and was traditionally utilised when referring to tangible products.

a. Consumer centred approach

The 4 Cs approach provides a demand or customer or prospective student centred alternative to the well-known 4 Ps, or supply side model of the marketing mix. In the 4 Cs consumer approach, product is defined as 'commodity', price as 'cost', place as 'channel' and promotion as 'communication'. Therefore, the commodity to the prospective student would be the educational qualification. The cost remains the fees paid for the tuition received. The channel may be the place in which the tuition is provided as well as the process by which the tuition is provided and the communication is the lecture (Kotler and Armstrong 2003: 86).

b. Adapted 7 P approach of Booms and Bitner

The traditional marketing tools grouped into 4 Ps (product, price, place and promotion), 5 Ps (adding people) and 7 Ps (adding physical facilities and processes) may be wanting in this market. The research clearly shows that all the seven elements of the marketing mix have relevance to Higher Education marketing. It is also clear that the prioritisation that prospective students give different priority to the various elements. Essentially, product, price, and people elements appear to be the most critical aspects influencing prospective student's decisions to enrol with HEI's (Maringe, 2006: 150).

Ivy (2002: 15) reorganised these elements to reflect the marketing prioritisation of the business school sector and proposed a further 7 P framework encompassing premium, prominence, promotion, price, people, programme and prospectus. Ivy adapted product for premium and prominence for place in the 4 Ps and included the fifth P of people along with programme and prospectus which are criteria included in Higher Education, where programmes are the programme offerings and prospectus is the entire bundle of offerings provided by a particular Higher Education Institution. Maringe (2003: 33) however, has argued that this framework, while suited to the business school sector, may not be broadly applicable to HEIs.

The 7 Ps of the marketing mix for Higher Education were selected from the versions as outlined earlier. These would be publicity, prominence, promotion, price, people, programme and prospectus. It must be borne in mind, however, that marketing mix elements are never discrete entities. They tend to overlap each other and should

ideally be considered as loosely grouped elements requiring careful blending to give a differential advantage or competitive edge to the institution. This suggests that universities should try to blend all these elements into their marketing strategies in order to remain competitive in the marketplace. However, this does not imply that equal emphasis must be placed on all elements.

The decision to place greater emphasis on some marketing mix elements and less on others could be based on several factors. Such factors could include the competencies of the institution, the type of market targeted by the institution and the needs of targeted customers. The idea behind manipulating these elements of the marketing mix is to create a differential advantage or competitive edge (Maringe, 2006: 145).

Higher Education South Africa (2000) found that potential students in the South African environment sought information about 'product (e.g. academic recognition, quality and follow-up services) and 'price' (e.g. fees, scholarships, perceptions of value). Discussion includes a number of proposals on how to best approach the process of planning and executing marketing efforts and in terms of the 4 Ps of the marketing mix: product, price, place and promotion. Traditionally promotion would be classified as the marketing communications. In the marketing process, Product equates to programme offering, fees become the Price paid for education received (Eagle and Brennan, 2007: 44). The Place is the geographical location/s and Promotion is the number of marketing communication initiatives informing prospective students of the Higher Education Institution offerings, reputation, financial and scholarship availability as well as other information which may influence their need recognition choice to study at a particular Higher Education Institution.

3.2 MARKETING COMMUNICATIONS

Gray, Fam, and Llanes (2003: 113) focused primarily on branding in a more holistic problem identification approach to their study of marketing communications. They investigated the media that prospective students used to gain information about universities, concluding that the World Wide Web and print media were perceived to be the most important sources of university information. Marketing communications is defined as the promotion criteria in the 4 Ps of the marketing mix.

3.2.1 Marketing communications: products becoming brands

Marketing communications play a vital role in the development of brands and are the means by which products become brands. Marketing determines how customers differentiate a product and understand what that brand stands for and what the brand's values are. The way in which marketing communications are used to build brands is determined strategically by the role that the brand is expected to play in achieving an organisation's goals.

3.2.2 Marketing communication practitioner's roles

De Chernatony and Dall'Omo Riley (1998: 89) argue that there are several roles that marketing communication practitioner's play in relation to strategic brand development. They suggest the role of the practitioners is to position the brand to show prospective students, how they may benefit from enrolling at the established brand or Higher Education Institution. It may be, that some of the problems experienced are due to a brand positioning strategy being poorly presented and not being suitably sustained by marketing communications practitioners, or that poor budgets may have caused a move away from the core brand values (Benady, 2001: 22).

The Higher Education sector, through programme development, may be reflecting a well established practice in business, e.g. the development of product lines, product extensions, raising brand awareness, brand recognition and brand recall (Fill, 2003: 58). This is where marketing communications practitioners can assist in developing a brand.

3.2.3 Concept of Higher Education branding

Although there have been a number of studies that examined image and reputation, the concept of branding has barely made its mark in higher education marketing. If developing Ehrenberg's ideas of repeat buying, it might be argued that the role of brand-based marketing communications is to remind prospective students of the positive influence criteria of the Higher Education Institution and reinforce their

perceptions in order to defend the Higher Education Institution's market share (Ehrenberg, 1972).

Whatever the role of marketing communications, one major determinant that applies to all organisations is the size of the financial resources that are made available. Should the budget be high, advertising will be the primary media choice in which brand name associations are shaped. The brand name itself will not need to be related to the function or use experience of the brand as the advertising will be used to create and maintain brand associations and awareness with prospective students.

When financial resources are limited, a below-the-line approach is necessary. In particular, the brand name will need to be closely related to the function (education) and experience use (qualification provides employment) of the product, while packaging (reputation and quality of tuition) will also play a significant role in building brand associations.

3.3 USE OF MARKETING COMMUNICATIONS TO SHIFT ATTITUDES

Marketing communications is important to either maintain or alter attitudes held by stakeholders, customers or prospective students. Although shifting attitudes is not the only means of shaping the attitudes about product or service, elements such as pricing, location and employment after qualification, play an important part in formulating the decision-making or choice process. Marketing communications plays a pivotal role in transmitting each of these aspects to the target audience or prospective students (Fill, 2002: 80).

Marketing practitioners find the advantages obvious and immediate, namely that; an enhanced ability to design a more refined marketing mix; a better understanding that allows relationship marketing implementation; better and more focused branding; all provide the brand a strong position. Beyond these, Higher Education Institutions are better equipped to redefine their role, aims and means at a strategic marketing management level (Vrontis, Thrassou and Melanthiou, 2007: 979). The use of branding, through the promotional mix, may be applied to influence attitudes in a consistent manner in order to sustain brands. Fundamentally, there is a common thread between attributes, attitudes and positioning. Attributes provide a means of

differentiation and positions are shaped as a consequence of the attitudes that result from the way people interpret the associated marketing communications (Fill, 2002: 80).

In Section 2.2 of this chapter the choice model of Hanson and Litten (1989:73) was discussed and it was shown that the decision-making process of prospective students may be influenced by race and family culture, quality and social composition of high school, parents and counsellors, self image and personality, economic conditions of the environment, financial aid available, recruitment activities of colleges, size and programmes offered by the Higher Education Institutions. By being informed of the various influence factors of each subgroup, as identified in Bonnema and Van der Waladt, (2008: 324) in 2.5, the strategic plan may be defined to shift perceptions to favour the dynamic of a particular Higher Education Institution.

Environment influences the attitudes people hold towards particular products and services. Maringe and Gibbs, cite that higher education should become a product delivered by service providers (2009: 6). Patterson, Romm and Hill, (1998: 137) define higher education as a pure service, characterised as such by larger amounts of interpersonal contact, complexity, divergence, and customisation than in other service businesses. Binsardi and Ekwulugo (2003: 320) point out that when considering core benefits, prospective students are not buying degrees but are buying the benefits that a degree can provide them, in terms of employment, status and lifestyle, among others.

Fill (2002: 80) states that marketing communication influences the consumer partially through the way consumers reflect or interpret the messages surrounding them, partially through their direct experience with or the use of, the product or service and partially as a result of the informal messages they receive from family, friends and other credible sources of information. Collectively, all these messages drive the decision-making process from the way communication strategies position products and services to how prospective students understand and interpret the messages in relation to the competing products. Managing attitudes towards a brand is therefore integral to supporting the brand and, as such, marketing communications play an important part in changing, maintaining and sustaining attitudes. Fill (2002: 80 - 81)

cites the following 7 stages which apply to DUT and identify a number of ways in which attitudinal change may be implemented. These incorporate elements from changing the physical product or service to changing the number of attributes used in campaigns. For the purpose of this research the following stages were identified as pertinent to the study objectives.

a. Build Credibility

Marketing communication would be required to develop more sustainable attitudes towards a brand building sufficient loyalty to determine a conclusive decision to study at a specific Higher Education Institution. This can be achieved through the use of an informative strategy, designed to build credibility. Development of a brand's reputation and promotion via face-to-face school liaison is an effective strategy which Higher Education Institutions may employ to build credibility with prospective students.

b. Change performance benefits

Binsardi and Ekwulugo (2003: 320) state the central importance of pricing, product and promotional variables in designing and marketing higher education mix where the focus of their study questioned the students' perceptions about higher education and performance of Higher Education Institutions in the market of their choice. Beliefs held by potential consumers about DUT and the performance qualities of DUT's product may be adjusted through appropriate strategic shifts in positioning marketing communications. For example, by changing the perceptions held about the attributes, it is possible to change the attitudes about DUT.

c. Change attribute properties

Through the use of marketing communications the relative importance of the different attributes and ratings of the product offering may be changed. Thus, a strategy to highlight a competitively different attribute in a specific Higher Education Institution may cause a decision to change the influencing attitude of the prospective student, from studying at a traditional university to studying at a UoT.

By emphasising the importance of geographic location, the availability of financial aid or the availability of computer laboratories and sporting facilities, the importance of these attributes in the minds of potential students gives DUT an advantage over its competitors.

Gray, Fam and Llanes (2003, 115) identify that a university's learning environment (including excellent staff, facilities and resources), reputation (including brand name, achievements and high standard of education), graduate career prospects (including graduates' employment prospects, expected income and employers' views of graduates), destination/ geographic image (including political stability, safety and hospitality) and cultural integration (including religious freedom and cultural diversity) all enforce the decision to choose a particular Higher Education Institution at which to study.

d. Introduce new attribute

Fill (2002: 81) proposes that opportunities may exist for marketing communications practitioners to introduce a uniquely different and/or previously unused attribute to influence the prospective student in their decision making process.

This provides a means for clear differentiation until competitors imitate and catch up. For example, DUT students participate in work-integrated learning, where they have the opportunity to experience time in the real workplace. The introduction of this attribute provides the prospective student with the ability to be more easily integrated into the working environment once qualified. The in-service experience thus provides DUT an advantage over competitors in the higher education arena.

e. Change perception of competitor products

By changing the way competitor products are perceived it is possible to differentiate your own brand. By changing the perception of prospective students or changing the association of their perceptions with the brand, DUT may gain a competitive advantage. This could be achieved by using messages that set DUT apart from its rivals, suggesting, for example, that not all universities are the same. Changing the perceptions of certain subgroups as

indicated in the Bonnema and Van der Walldt study (2008: 320) where five main subgroups are identified within the target population of higher education in South Africa. Within these are a plethora of determinants which rank and influence each subgroup, from the “have lots” to the “new lifers” and is explained in more detail in Section 3.5 of chapter 3.

f. Change or introduce new brand associations

By using celebrities or spokespersons, Fill (2002: 81) advises that a change or introduction of new brand associations may be established with whom the target audience can identify. It may be possible for DUT to change the way a UoT is perceived on an emotional basis rather than relying on attributes on their own to sway prospective students' decision making processes. In a recent DUT marketing communication strategy, the Alumni Campaign, a prominent national businessman and community figure Alan Khan, was the DUT spokesperson on media such as airport billboards and corporate advertising. The fact that he is a CEO of one of the national radio stations and previously held a similar position in a local radio station gives prospective students the aspiration that if they graduate from DUT, they too may become CEOs.

g. Use corporate branding

By altering the significance of the DUT relative to UoTs as a whole, it is possible to alter beliefs about brands and their overall value. Amongst prospective students it can be determined that various sectors are influenced by their socio-economic background, in the choice of where to study. In some marketing communication situations there is little to differentiate competitive brands or develop credible scope to attribute-based attitudes.

Fill (2002: 81) advises that a marketing practitioner should appreciate how customers process information, with the understanding that the brands they promote still may rely on a single attribute as a means of providing a point of differentiation. He states that, two or even three attributes are often combined with strong emotional associations in order to provide a point of differentiation and a set of benefit-orientated brand values.

The marketing practitioner uses the strategic objectives to achieve the institutions goals. This is achieved through effective use of communication media, targeting appropriate prospective students to ensure through-put, success and ultimately competitive advantage.

3.3.1 Competitive advantage and marketing strategies

Customer loyalty is assumed to be positively related to product performance and brand reputation (Helgesen, 2006: 245). Marketing at DUT is done at a macro level via the Division of Corporate Affairs and its objective is to improve the profile of the DUT (Pillay, 2010: 44). Competitors of DUT are private higher education institutions, traditional universities, comprehensive universities and other universities of technology (Pillay, 2010: 40).

As reported in the research done by Gattonby (2008), it can be seen that DUT, as a brand, is not dominant against other competitive brands. Durban University of Technologies market dominance shows strength only in areas where the offerings are unique, where the financial implications of choice are influenced by bursary availability, where the programme offering is believed to be easily attained and where the geographic location is appealing to the target audience.

Verification may be required to confirm the bias of Subgroup 4 towards Universities of Technology by, as claimed by Bonnema and Van der Walddt (2008). This would need to be determined to position the marketing communications of DUT strategically to improve the five subgroups' image and influence to choose DUT as a preferred institution at which to study. By following this method of determining our target audience, an increased potential may be developed for all the subgroups to be influenced to select the DUT brand over its competitors. The strength of institution's market positioning, namely, 'academic reputation' and 'employability of graduates' form the basis for the DUT marketing messages (Pillay, 2010: 50). Positioning of the DUT provides the edge which the institution offers in relation to its competitors. Annually, tertiary institutions compete with one another to target via their marketing communication strategies, successfully enrol and retain prospective students.

Gatonby (2008: 37) stated that it was necessary to reposition DUT, as the understanding of the product offering was not clear. It was also suggested that there should be a broadening of the marketing plan to incorporate electronic digital media campaigns that run concurrently with the more traditional campaigns. This initiative has been integrated into the strategy by use of the 'sms' system of programme information dissemination to prospective students.

Bonnema and Van der Walddt's research (2008: 314) suggests unique branding and marketing communication strategies, targeting specific demographics and establishing more directly, the type of marketing media required to reach prospective students in the Higher Education Institution arena.

Ivy (2001: 281) confirmed that it was important for universities to conduct a market analysis to establish their market position and to present the institutional image effectively as based on the theory developed by Kotler and Fox.

Higher education marketing communication strategies are required to take on the challenges identified by the various researchers in order to reach the target segments and audiences required by to facilitate the institutions sustainability.

3.4 MARKETING COMMUNICATION OBJECTIVES AND DUT

Marketing communication objectives are derived from an understanding of the current context in which DUT exists and the strategies which need to be implemented for the brand's future to be determined. This communication strategy, in a document prepared by the DUT (2008), cites an awareness level, perception, comprehension or knowledge, attitude toward an overall degree of preference for the brand. Kotler and Armstrong (2003: 5) identify the marketing communication mix to include five elements: advertising; public relations; personal selling; direct mail and sales promotion.

The choice of marketing communication objectives depends upon the requirements which need to be accomplished. The recruitment of quality students provides a constructive basis for the sustainability of DUT. Historically, these students have proved to be able to pass all subjects in the required number of years successfully, and move on toward higher levels of learning or be gainfully employed.

Most brands need to maintain their current position or reposition in order to establish themselves in the light of changing contextual conditions (Fill, 2002: 303).

Based on Bourke (2000), a positive brand image can strongly influence the decision to attend a Higher Education Institution. The institution's image is the sum of opinions, ideas, and impressions that prospective students have of the institution (Kotler and Fox, 1995). Prospective students' opinion about the image of the institution is formed from word of mouth, past experience, and marketing activities of the institution (Ivy, 2001: 278). Thus, very often the perception of the institution's excellence appears to influence prospective students as to the institutions actual quality (Kotler and Fox, 1995). Increasingly, prospective students are becoming extremely critical and analytical when choosing their educational institutions (Binsardi and Ekwulugo, 2003: 325).

3.4.1 Marketing Communications at DUT

Marketing at DUT is managed by the Executive Director: Division of Corporate Affairs (DoCA) (DUT, 2008) who was interviewed for research purposes. This interview clarified that marketing through this division was conducted primarily for the university and its intention was to support the student recruitment effort at DUT. From the Division of Corporate Affairs (DoCA) Marketing Strategic Plan for 2008 – 2012 (DUT, 2008: 1), the purpose statement identifies that the Division is in the business of innovation, differentiation and communication of the DUT brand.

3.4.1.1 DUT's communication strategy: pro's and con's

The strategic document 2008 – 2009, is noted to fail to identify how each faculty driven requirement for target recruitments are integrated therein and thus fails to provide a winning strategy. The DoCA strategic document omits referring to the six faculties' enrolment deadlines. This then fails to inject the critical enrolment quota information into the strategy plan to ensure effective implementation of the marketing communication strategy. The document does not identify how this process would ensure that the recruitment targets are met.

What it does indicate, is the necessity of recruiting quality students to ensure the university's sustainability, as well as stipulating the need for an integrated university-wide (DUT, 2008: 3) marketing communication strategy to be implemented to ensure success in this mission. This strategy may be enhanced by identifying the heterogeneous subgroups within the target market and specifically addressing marketing communications which take these differences into account when directed at this audience.

3.4.1.2 DUT's marketing objective

The Division's marketing objective is to project and improve the profile and image of a University of Technology in the form of advertising in newspapers, magazines, national career publications and guides as well as radio, television and cinema advertising. Other media used are strategically positioned billboards, street pole advertising and banner signage which are placed in major arterial geographic locations in both Pietermaritzburg and Durban, as well as at two major airports (DUT, 2008).

Further initiatives are implemented with promotional branded corporate items distributed to those schools known to be feeder schools for prospective students to DUT as well as at careers exhibitions. The extent to which the marketing initiatives are implemented is determined by the annual budget and does not address the marketing of specific programme offerings or for targeting specialised groups of learners.

3.4.1.3 DUT's future strategy suggested

Different strategies are required for various subgroups. Briggs (2006: 707) refers to universities currently being subjected to more critical and discerning consumer choice, in that their prospective students are becoming well informed, more mobile and in a position to make judgements about a wider variety of competitive Higher Education Institutions, both locally and globally.

Factors which marketing communications practitioners must take into account are preferred sources of media and information needs, as well as the subgroups within

their target markets, in order to determine an integrated marketing communication) plan. Mortimer (1997: 225) suggests that universities could achieve competitive advantage if they became aware of prospective students' needs and provided this information in traditional print communications as well as other communication media by establishing market orientation and customer focus.

3.4.2 Higher Education Marketing and Recruitment Strategies at DUT

McGrath (2002: 3) identifies a historical path to the attitudes about marketing in higher education stating that in higher education, evolution has seen a move away from the more Ritualistic way ("Communication, through language and other symbolic forms, comprises the ambience of human existence." Carey, 2010: 24) of communicating within and outside the Higher Education Institutions, towards a more aggressive Transmission Model which uses marketing communications tools including advertising, direct marketing, and public relations. Strategically, DUT currently approaches its marketing initiatives using these methods. It can be noted that a more sophisticated marketing technique should be more prevalent since Higher Education Institutions are now faced with vigorous competition for prospective students.

Berger and Wallingford (1996: 61) have suggested that higher education marketing efforts should be based upon an understanding of prospective student awareness, knowledge, liking, preference, conviction and purchase influences. This is corroborated by Bonnema and Van der Waldt (2008).

Jugenheimer (1995: 1) criticised the marketing efforts of many colleges and universities, blaming their poor execution on resistance to marketing within Higher Education Institutions and due to improper planning, including the total lack of marketing planning in some cases. Pillay (2010: 50) corroborate this viewpoint in their study of enrolment planning and its implementation at DUT.

When examining the new technologies and forms of media currently compelling Higher Education Institutions to engage in determining proper market segmentation and positioning in order to remain competitive, it can be seen that forms of electronic marketing media are being sought and utilised in marketing communication

strategies in various Higher Education Institutions in South Africa (Bonnema and Van der Waldt, 2008: 315).

It is suggested by Pillay (2010: 47) that DUT should be creating a distinct marketing function within the institution which, with the use of outside consultants, creates a marketing plan linked with the UoT's strategic goals, and therefore gains the support of the top administrators and faculty managers. At DUT, the marketing initiative takes place in the form of advertisements in newspapers, national careers guides, publications and on radio and television. Student recruitment, through print media in the past year, has employed the use of 'sms' enquiry for programme information and this has been successfully utilised to disseminate information to prospective students.

Further marketing media are billboards, banners, and street pole advertisements which are placed in geographically targeted areas where potential students attend school or commute. The student recruitment office and executive deans take the initiative to visit schools at which promotional items such as bookmarks and faculty posters are distributed to expose the DUT brand to the target market (Pillay, 2010: 44).

3.5 SEGMENTATION

Ward (2010: 1) defines segmentation as a process of determining and sub-dividing a large homogenous market into clearly identifiable segments having similar needs, wants, or demand characteristics. The marketing communications practitioner's objective is to design a marketing mix that precisely matches the expectations of prospective students in the targeted segment. The essence of target marketing is that it makes the promotion, pricing and distribution of your products/programme offerings and/or services easier and more cost-effective.

There are four factors that affect market segmentation: clear identification of the segment; measurability of its effective size; its accessibility through promotional efforts and its appropriateness to the policies and resources of the business in which it transacts. The four market segmentation-strategies are behavioural, demographic, psychographic and geographical differences (Ward, 2010:1).

Marketing communications practitioners in the business of Higher Education marketing are required to understand the segmentation of their markets before implementing strategies which target the right subgroups. Consumers expect a brand to satisfy a multitude of expectations and a revolution in the way people relate to products and services has been witnessed (Briggs, 2006: 710). From other research in this field, it can be determined that, in the choice of higher education, various constituencies are categorised as customers - students, employers, families and society (Marzo-Navarro, Pedraja-Iglesias and Rivera-Torres, 2005: 53). In the South African higher education context, the choices that potential students have in the tertiary arena have grown.

Bonnema and Van der Walddt (2008: 319) state that applicants to Higher Education Institutions identified five priority areas which influence their choice when applying to study are: jobs, programmes, student life, sport and money.

These five priorities fit within segmentation as follows:

- Jobs: prospective students expect the possibility of employment upon qualification/completion of studies - behavioural and demographic influences.
- Programmes: programmes offered which support the prospective students' intention to become employed in their field of study allowing them to move from a level of unemployment to employment allowing lifestyle changes – psychographic influences.
- Student life: opportunity to participate in an active student Life. Use of facilities such as computer laboratories, library facilities and recreational events – behavioural and psychographic influences.
- Sport: opportunity to participate in a wide variety of sporting activities, readily available on campus – psychographic influences.
- Money: identifies both the cost of studies and the amount they may be able to earn upon qualification (potentially raising their status via social class and lifestyle).

3.5.1 Subgroups within the target audience

In the study conducted in the Cape Metropolitan geographic area by Bonnema and Van der Walddt, (2008) five subgroups were identified when conducting a detailed

investigation into source preferences of prospective students to higher education institutions and are detailed below:

- **Subgroup 1: “Have lots”** Members of this grouping appear to reside in wealthy homes where few material needs cannot be met. As a result, this group has been dubbed the “have lots”. Seventy percent of the respondents were English speaking, aged between 15 and 17 years and are mostly White and Coloured. The most telling criteria about this group were that they attended the most advantaged schools in the study. Respondents overwhelmingly planned to study in universities rather than colleges or Universities of Technology. This correlates to studies conducted by Cosser and Du Toit, (2002); Davies and Guppy, (1996); and Goff, Patino and Jackson (2004). Their main decision making factors were employability and specific specialised programme offerings ranked highly, with sport and student-life rating lower and financial factors rating the lowest. This group relied on direct sources of information from the institution and social sources such as word-of-mouth references, placing no reference on the reputation of the university.
- **Subgroup 2: “Aspiring have lots”** This group comes from less affluent circumstances but share the same aspirations as the “have lots. These respondents have their sights set on being more like Subgroup 1, with most aspects of their lives displaying similar characteristics as the “have lots” with the exception that they are financially constrained. Seventy-seven percent of these respondents were female with a greater proportion being Coloured and the majority of respondents spoke English at home. They were aged between 15 and 17 at the time of the study. They attended more affluent schools in the study, with some respondents attending some more affordable schools.

Noticeably, the most affluent schools in the survey are under-represented in this subgroup. Fewer respondents in this subgroup attend girls-only schools. The respondents in this group plan to attend university, but may quite possibly attend Universities of Technology or colleges. In contrast to the previous subgroup, affordability is a primary consideration for this group when it comes

to selecting a tertiary institution, and may be a prime reason for the close rating of both types of institutions. Notably, Colleges and Universities of Technology are more affordable than Universities.

Following on the issue of affordability, members of this group look to specific programmes and jobs when applying to a higher educational institution, ranking the social aspects of sport and student life a lot lower. This shows that they are, in fact, ambitious and very serious, but have to deal with the reality of being able to afford their tuition.

Members of this subgroup also trust direct marketing communication sources from the institution however, they rate media sources higher than social sources, indicating that they may be more trusting of media than other sources.

- **Subgroup 3: “University lifers”** Respondents in this subgroup show a greater interest in the social aspects of going to university than in any of the long-term benefits of such an education. Their responses indicated that the university experience is their primary objective, which earns them the label “university lifers”.

Sixty four percent of the respondents in this subgroup were female and 36% were male, reflecting a very similar ratio to that of the survey respondents as a whole. Forty five percent of respondents in the group were Coloured, and 32% were White. The majority spoke English at home.

This group indicated they plan to attend a university rather than a College or Universities of Technology. It seems that their main driver in choosing this type of institution is determined by factors that impact on the student experience as a whole, such as the content of the programme, the sporting and student life aspects. They are least concerned with affordability and the longer-term prospects of employability. Their main HEI sources of information are social sources which will be able to give them a more honest report on

what it is really like to attend a particular university. This group proves less trusting of media sources, showing some degree of media-knowledge.

- **Subgroup 4: “Little direction”** The members of this subgroup, in comparison with the other subgroups, show little knowledge of the opportunities available to them in terms of studying, coupled with very little motivation to study. This lack of direction as far as studying further and their futures in general are concerned, has earned them the label of “little direction”. This is the second largest subgroup. It consists of a larger proportion of males than any other group. It is a largely African and Coloured group, with a relatively even spread of English, Afrikaans and Xhosa speakers. The proportion of English speakers in the group as a whole is lower than in other sub-groups. The majority of respondents are between 15 and 17, but a very high proportion of respondents are older than 18.

This subgroup can be described as a streetwise, masculine subgroup, whose members are older and more sceptical. They are, however, somewhat intimidated by the thought of studying further. These respondents are more likely to attend a college, UoT, than a university. They are influenced and not intimidated by social sources and advertising (media sources).

This group rates sport as the most important reason for attending an institution, followed by affordability. Programme content rates the lowest and as such this point gives a good indication about the group. It implies that their knowledge of programmes and available programmes is probably very limited. They rely on media and social sources to obtain information about tertiary institutions, and are not inclined to consult direct sources. They have had limited exposure to institutions and are disinclined to approach an institution to enquire about the offerings available to them.

- **Subgroup 5: “New lifers”** The respondents in this group indicated that their main aim is to escape the circumstances in which they currently find themselves, hoping that obtaining an education will be the key factor in their being able to attain this goal. For this reason they have been labelled the

“new lifers”. This is the largest subgroup in the study. 69% of respondents are female and 31% male, making it only a slightly more female subgroup than those in the study as a whole. The majority of respondents are Coloured or African, speaking mostly Afrikaans or Xhosa. Proportionately this subgroup has more Xhosa speakers than any other subgroup. Similarly, it has the highest proportion of Africans.

In terms of age, this group contains a large proportion of respondents over the age of 18. This is therefore a group that can be classified as being comprised of older African and Coloured females.

On the whole, these respondents believe that they will apply to a College or Universities of Technology rather than to a university. They rate aspects of student life as most important, followed by the programme content and sporting aspects. Bonnema and Van der Waladt cite that the long-term aspects of employability are not ranked highly amongst this group. It is possible that the top three factors determined here indicate that students look for a safe haven during the day, and for better circumstances to go to in their futures. Education is also seen as the only option for escaping the disadvantaged circumstances in which these students find themselves (2008). This is supported by the research conducted by Ramphele (2002: 61).

These respondents look primarily to social sources for information on where to study. Respondents in this group also rate direct sources the lowest, indicating a similar aversion to that expressed by Subgroup 4, and may find it intimidating to seek information directly from an institution.

This gives an indication of the type of marketing communication the institution will need to use to attract members of each group. Bearing in mind that, in many instances, tertiary institutions are in the process of redressing the past and hoping to attract historically disadvantaged students to have a student body in line with the greater population of the country, the information relating to each subgroup will be of significant use. The strategic planning a marketing practitioner embarks on must take into account the decision making processes as practiced by the subgroups identified herein.

3.5.2 Decision making as applied by subgroups

The respondents identified in each subgroup of the Bonnema and Van der Waladt, study (2008), have particular preferences in terms of what information is required to make the decision of which Higher Education Institution at which to study. With this perspective in mind, marketing communications practitioners require information into which subgroup their target audience falls. Thereafter, they need to determine what information needs to be used in their marketing strategies to target these specific groups.

Bonnema and Van der Waladt (2008) identified subgroups which indicated the target audiences of educational institutions are divided according to their group beliefs around the factors which they considered important, regarding tertiary education. They are further divided according to the socio-economic circumstances within which each subgroup falls.

The Cape Metropolitan study gives valuable information on the preference for information sources of prospective students who are planning to enter the higher educational arena (Bonnema and Van der Waladt, 2008). A fact that not all subgroups depend on the same mediums of sources; media, direct sources and social sources indicate that the institutional marketing communication strategy must be structured to suit the specific needs of each subgroup by means of a varied marketing communication mix.

These five sub-groups which comprise the potential students in the higher education marketplace, show unique characteristics which highlight the specialised communication messages and relevant sources which should be developed in order to maximise the marketing communications impact.

This poses a challenge for marketing communication practitioners who need to recognise these characteristics and customise their messaging taking into consideration the characteristics of such subgroups. Universities of Technology need to bear in mind that youths from disadvantaged households still believe that access to university is unattainable, so set their targets lower to comprehensive colleges and colleges (Pillay 2010: 44). Marketing communication strategies should be targeted at

establishing how to break down the barriers to entry, as well as how to create role models in these communities by means of marketing communication that could change mindsets.

Bonnema and Van der Walldt study (2008) cites that the information and influences on different subgroups remains varied. Information is not limited to only one type of need or influence for the entire target market. It is recognised that each subgroup values certain types of information in order to make decisions about where to study. The individual's socio-economic circumstances, the potential that the student wishes to meet, and their career ambitions are impacted by each prospective student's needs.

3.6 CONCLUSION

Most Higher Education Institution's have traditionally used business marketing theories and concepts to market their institutions. It can be seen through the literature reviewed, that the time has come for Higher Education Institutions to stop merely adopting their marketing communications strategies, and to adapt a wider marketing theory. It is no longer a matter of retaining traditional approaches by simply enriching them with various marketing tools and practices. To be able to market the programme offerings proactively to prospective students, the marketing communication practitioners in Higher Education must understand the students' decision-making process and their perception of the values a particular institution provides. The various choice models provide the basis for the marketing practitioner to best understand and grasp the decision making process, the influences and needs which drive prospective students choice of Higher Education Institution at which to study.

Literature exists where Higher Education is stated to be based on a Services Management model of business and thus the context of marketing higher education should be geared to promote or communicate marketing mixes which have become an important concept for creating awareness in the market communicators' strategy. A locally based study provided clearly identified subgroups and their perception of benefits and the cost value of Higher Education. The effective combination of the right mix of marketing communication strategies intent on attracting prospective high

quality students should be the goal for Higher Education Institutions. These would require utilising appropriate marketing communication tools to direct the Higher Education Institution's message at the right stage of influence in the choice model of the prospective student's decision-making process.

The selection of the suitable media options and the communication mix is reliant on the strategic marketing objectives for the communication effect to be achieved. This objective is to recruit quality students to provide a constructive basis for sustainability. Furthermore, in order to meet prospective students' needs relevant, reliable information must be provided in the preferred media.

The literature reviewed in this chapter focussed on the aim of this study, viz, review marketing communication strategies in Higher Education Institutions.

Consumer behaviour and choice models from Vrontis, Thrassou and Melanthiou, (2007), Cubillo, Sánchez and Cerviño, (2006), Dawes and Brown, (2003) and Blackwell, Miniard, and Engel, (2006) required reviewing in order to better understand the choice process and influences of the target audiences. Focussed Higher Education marketing approaches which facilitate reputation building and more constructive development of marketing strategies in order to meet the objectives of remaining competitive, were examined by Foskett and Hemsley-Brown (2001). Marketing communications were identified by Kotler and Armstrong (2003) and the changing role highlighted by Kotler and Fox (1995), Ivy (2002) and Binsardi and Ekwulugo (2003), to meet the demands of the wider range of prospective students from the various subgroups which form the target audience.

Briggs (2006), and Mortimer (1997) cite that through correct strategies Higher Education Institution's will achieve competitive advantage in attracting prospective students.

Based on this literature, the next chapter presents the methodology that was developed to meet the objectives set out in chapter 1.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 INTRODUCTION

In this chapter the research design is described by identifying the population and sample of the study. The sampling methods used in this descriptive study are imparted herein, along with the process of sampling required to complete this research. Furthermore, explanations of the obstacles and solutions which facilitated the completion of this study are discussed. This chapter explains that the data collection took place via an electronic questionnaire. The research mechanisms used via the data analysis and journey taken to establish the aims and objectives of this study are explained herein. Analysis of data in this study took the form of univariate and bi-variate investigation, and was both valid and reliable. The type of study was both descriptive and explanatory.

4.2 RESEARCH DESIGN

Empirical research has both implied, and ambiguous, research design characteristics as it is based on directly observed methods of gaining knowledge. The basis of the method has a logical progression which connects the observed data to the research questions. In essence the research design is a plan of how the research will progress from the initiation to the conclusion and is constructed of a logical process of answering the questions of the study. This specifies how the researcher will proceed, attending to the important concerns of accurate depiction and capture. "A research design describes a flexible set of guidelines that connects theoretical paradigms to strategies of inquiry and methods for collecting empirical material. It situates researchers in the empirical world and connects them to specific sites, persons, groups, institutions, and bodies of relevant interpretive material, including documents and archives". (Darko-Ampem, 2004: 134).

The research used the survey approach, gathering data from a number of respondents within a limited time frame. Surveys were used to gather data from a relatively large number of respondents within a six week time frame. The study was quantitative in method which is generally concerned with counting and measuring (Blaikie, 2001: 232). Descriptive research as a type of decisive research was its

major objective, and describes the responses of the respondents collecting numerical data to answer questions and base a theory (Malhotra 2001: 87).

4.3 POPULATION

A population refers to the entire group of people, events or topics of interest that the researcher wishes to investigate. A population is considered to be any group that shares a set of common traits (Black, 2002: 48). Defining the target population is a crucial step in the design of a research project (Crask and Day, 2000: 176). The target population was informed the numeric statistics provided by Management Information Systems at DUT, 6024 first year, first time enrolees, and was based on enrolees as at January of 2009 intake.

4.4 SAMPLING

The sample will be a non-probability sample (Cooper and Schindler, 2001: 448). A convenience sample of first year students was drawn, using Sekaran's criteria, that states that if the population is between 6000 and 6999 then the respondent sample is sufficient to determine the study representative of the population if 361 cases were studied (2003: 294). The sample drawn from first time, first year enrolees, related to the data from this University of Technology and was not generalised, nor did it refer to a population beyond the DUT.

4.4.1 Method

When performing research studies the question arises: how representative is the information gathered of the entire population? (Walliman, 2001:232).

The sample is the select number of cases in a population and in this study these were chosen by a non-probability sampling technique, namely accidental or convenience sampling. This was applied to all first year first time enrolees of the January 2009 intake to DUT. Struwig and Stead (2004: 111) describe convenience sampling as a sample chosen on the basis of being readily available. In this study, the convenience sampling was used as DUT students formed the population and were readily available, being from the same institution. The respondents' were selected because they were accessible. Whilst Struwig and Stead advise this method to be used in special cases only, this study recognises the constraints of

time and money as delimiters and thus used the respondents located at DUT to resolve these limitations.

The Retail Marketing students who were used for the pre-test process were chosen via convenience sampling as they were selected from a set group of students (Retail Marketing 1). They were approached in their lecture venue and invited to participate in the survey. Nine students volunteered but only seven students successfully completed the draft survey.

For the balance of the study the research assistants cold-canvassed amongst students near the various laboratories used to run the surveys, establishing if the relevant students fell within our population criteria, and invited them to complete the survey. They then guided them to the respective venue where the researcher explained the scope of the study and detailed the process of completing the electronic questionnaire.

4.4.2 Size

The target population, according to enrolment statistics at DUT, was 6024 first year, first time students enrolled in January 2009 and the sample size was drawn from this headcount Creative Research Systems (2003) states that the larger the sample size, the more sure the researcher can be that the respondents' answers truly reflect the population. According to Struwig and Stead (2001: 125), it is not possible to confirm whether a sample size is good or bad, but the researcher must consider the purpose and goals of the study. When a total number of 350 respondents were used, the level of precision and confidence required for the study to be representative of the population was deemed appropriate.

4.5 DATA COLLECTION

Myers (2005: 51) states that a questionnaire is a pre-formulated, written set of questions to which respondents record their answers, usually with closely defined alternatives.

4.5.1 Instrument development

A questionnaire was developed broadly based on questions from Gattonby's (2008) questionnaire, and the models of student choice used in studies by Briggs (2006: 713) and Helgesen (2008: 56). The instrument of analysis was based on a questionnaire which was designed to cover the five dimensions of environmental influences on buyer information processing; culture, social class, situational influences, groups and communications situations (Fill, 2002: 83).

Perceptions and attitudes of first year students at DUT were investigated using closed questions which were appropriate to self-completion questionnaires run during term time with a selection of first year students across the faculties and campuses. A covering letter ensured that the respondents were informed of the nature and purpose of the research. Research questions were structured in the simplest terms, making it easier to be understood by every respondent. The questionnaire included demographic questions involving personal information such as age, race and gender.

Bonnema and Van der Walde's (2008: 325) study guided the direction in which this researcher posed questions in the area of what influenced prospective student choice to study at a Higher Education Institution. The Gattonby (2008) questionnaire was used as a guide and modified to include the identification of demographic subgroups into which first time, first year students fell and further developed to determine the extent to which students engage with the DUT brand.

The basis of the questions was:

- The brand awareness established by students as deduced from their explanation of which marketing communications strategy influenced them to enrol at DUT;
- Establishing the student samples' influenced by most effective communication initiatives which persuaded them to enrol at DUT, and
- Determining the factors which influenced students to choose DUT.

A draft questionnaire was presented to the statistician and the computer analyst before a selected group of first time, first year Retail Marketing students pre-tested it to ascertain whether this instrument would adequately test what the study intended to achieve. The draft survey was administered by the researcher and a research assistant, to a group of nine first year students in a Library Computer laboratory on the ML Sultan Campus. Thereafter the, completed electronic questionnaires were saved to the researchers' memory stick. The comments and recommendations of these groups facilitated amendments to the questionnaire. It was noted that two respondents had incomplete questionnaires. One of the comments noted by the students was that a question had been duplicated in the layout of the draft. As a result of this observation the questionnaire was amended, and then duplicated question was deleted. Comments from the statistician and the computer analyst involved the structuring of the questions for coding purposes.

As the questionnaire did not follow exactly the same format for each group of questions a system was established which ensured that the information required would be represented coherently in statistical terms. At this point the final electronic questionnaire was created for data collection. This was then set up and created in Adobe LiveCycle version 8, with the intention of being able to use the faculty research laboratories to conduct the electronic surveys where the respondents would be able to email the results directly to the researcher.

Once the data was assembled it was determined that the questionnaire had not been refined to incorporate the definitive aspect of Question 2, which should have asked if the respondents were exposed to the 12 media criteria in a yes/no manner and then ask, if so which of the initiatives most influenced their choice to study at DUT.

The manner in which the study was conducted, posed the Question 2) as, which if any marketing communication initiatives where directly responsible for the respondents' choice to study at DUT. From the analysis it appeared that Question 2 was not specific enough in asking if the respondents were exposed to the 12 media criteria and if so, which of the initiatives most influenced their choice to study at DUT. This item was not identified and refined at the pre-testing stage. Therefore, the results of Question 2 should be interpreted with care.

Walliman, recommends researchers code and label their questionnaire and in this study, with the assistance of the statistician and the computer analyst, the electronic questionnaire established using these guidelines (2001: 262). Those questions which were coded in this manner provided meaning to the data collected. For instance a five point scale was given the following meaning: VI = Very Important; I = Important; NINU = Neither Important nor Unimportant; U = Unimportant and LI = Least important.

4.5.2 Obtaining respondents

Originally, the intention was to get large groups of the population sample to visit the Faculty of Management Sciences Laboratory to complete the electronic survey. The process would have involved 70 respondents participating in the survey, at a time, with the assistance of first year subject lecturers in all faculties allowing their lecture time to be used for this research. The plan was that research assistants would be used to assist the researcher with the entire data collection process. This would entail accompanying the groups of students from their campus to the laboratory, explaining the research intention and how to complete the survey. This would also require the explanation of how to submit the completed questionnaire via the submit button at the end of the document. The completed survey in Adobe Acrobat converts the coded information into an XML file which, through the submission process, is attached and sent via email to the researcher. The researcher's email address is set as the default address to which the collected data is sent.

At this point at the researcher discovered that the DUT computer Information Technology Support Services policy would not permit the submission of the completed questionnaires via email, and a contingency process was established in which a number of laboratories on five campuses were used with kind permission of various Deans of Faculty, Heads of Department and library personnel.

4.5.3 Administering the questionnaire

Data was collected through the use of the electronic questionnaires which were administered by the researcher to respondents, from 07 September to 29 October 2009. Although the period seems to span two months the survey sessions were held

on only 10 days, as and when the computer venues were available. In the course of the data collection period the difficulty arose both in the availability of the various computer laboratories on the various campuses and the timing of when the target population was available as exams and tests were being run concurrently with the survey.

In each instance the research assistants would approach students, ascertain if they were from the required population group (first year, first time enrollees) and invite them to participate in this study. The research assistants escorted them to the computer laboratory. Upon arrival each student was given an explanation of the research by the researcher and guided on how to complete the electronic questionnaire. As soon as the respondent had completed their survey they raised their hand and the researcher would check that the entire survey had been completed and save it to the respondent's PC desktop. The questionnaire would then be reset on each computer for the next respondent to complete and so on until the allotted time in the venue was up. Thereafter the researcher would save all the XML responses from the desktop onto an external memory device. Respondents who had submitted completed questionnaires were eligible for a lucky draw incentive of 100 2Gb USB (universal serial bus) memory sticks. The name and contact details were extracted from the XML files and put into a separate Excel file and through a formula determined by the web analyst 100 respondents were selected as recipients of the USBs. The researcher then contacted these students via email and sms (short message system). In order to ensure the process could be audited if necessary, the researcher had the respondents who collected their USBs to sign a register.

4.5.4 Collection problems

At the point of administering the questionnaire to the respondents, the researcher discovered that due to the computer securities in place at the DUT, the computer laboratories would not facilitate the resultant completed questionnaire to be sent to the researcher via email, as the attached file was in an XML format which was in conflict with the Information Technology Support Services computer users' policy. In order to overcome this hurdle, the researcher arranged a number of laboratories to be used on a more frequent but smaller respondent group basis and the

questionnaires were managed in a manner where the survey was completed and collected, checking and saved directly to the researcher's external memory device.

In the course of conducting the surveys, one of the technical issues which was encountered was that one of the computer laboratories were furnished with Apple Mac computers, and the results had to be saved as PDF files as the XML files were being saved in an incomplete state on these computers. It is surmised that this was due to the fact that the domain was different. This caused ten respondents to be approached to re-do their survey in the PC computer laboratory. Nine of the respondents re-did their survey.

By 29 October 2009, 350 respondents had been surveyed and the majority of first year students had left campus for the year as they were involved in writing their final examinations for the year. Thus, the remaining 11 respondents were not achieved. The 350 completed surveys were converted from XLM files into Excel in preparation for data analysis. The 350 surveys required very little cleaning due to the fact that the researcher checking each survey prior to it being saved to the Desktop and verified it with each respondent prior to their leaving the venue.

The questionnaire, although appropriate for most of the study, elements such as which school did you attend proved to be an element which could not direct the researcher to determining the sub-group status as in the Bonnema and Van Der Waldt's study. This was as a result of the previous Model A, B and C school status listing having fallen away, therefore not allowing the researcher to perform the analysis to determine this results as intended.

4.6 DATA ANALYSIS

Analysis was done by a statistician who conducted univariate and bi-variate analysis in SPSS, on the data supplied by the researcher. Further analysis was conducted by the researcher in Microsoft Excel in which weighted and ranked outcomes were sought for a variety of the media and influence data (Appendix B).

4.6.1 Analysis of data in this study

Data was analysed using Statistical Package for Social Sciences (SPSS version 15) and the respective descriptive and inferential statistical tests were used to determine the frequency and cross-tabulation results. Inferential tests were applied to all questions to ascertain whether any one option was selected significantly more or less often than expected. These tests compare observed frequencies in each question with the theoretically expected frequencies and aim to determine if any option for a specific question is chosen more often or less often than expected. If there were equally the same number of responses for and against a particular option, the expected result would be the average response, under the null hypothesis.

The level of statistical significance used is the p value where $p < 0.05$. If the chi-squared statistic is within a given range, it can be assumed that the difference between the expected and observed values is due to chance; therefore the null hypothesis is accepted. It is assumed that all options are equally likely to be chosen.

Further analysis was conducted in Microsoft Excel, where the weighted average was sought, for the various media options offered to the respondents showing a ranked order of importance for these media.

4.6.1.1 Univariate Analysis

Univariate analysis was conducted and resulted in frequencies and percentages of descriptive data. These depict the personal details section of the questionnaire along with Question 1b. The influence factors are extracted from Question 4.

Communication initiatives are reported from Questions 2 and 3 and the variety of communication media and their effectiveness is described in Questions 5, 6, 7, 8, 9, 10, 11 and 12. Question 13 reports customer satisfaction responses and although not directly related to the objectives of this study determines the satisfaction of choice made by respondent as a current customer. Finally, in Question 14 the report establishes access to multiple media sources and show the media most used by respondents (Appendix A). Chi-squared goodness of fit test was applied to all

questions to ascertain whether any one option was selected significantly more or less often than expected.

4.6.1.2 Bivariate Analysis

Bivariate analysis was conducted with cross-tabulated data in this study. This included cross-tabulated the demographic variables, influential factors and media effectiveness. These results are reported in the form of tables and figures making reference to the statistical significance of the Chi-squared goodness of fit test with the relevant frequencies.

4.6.2 Validity and Reliability

The reliability and validity tests measure the accuracy of measurement and the valid number of responses in a given study.

4.6.2.1 Reliability

Reliability measures the ability of the data collection instrument and method used for the study to obtain accurate and consistent results (Welman, Kruger and Mitchell, 2005: 145). In this study the reliability statistics of Cronbach's alpha were .870 (Appendix B).

4.6.2.2 Validity

Validity tests measure the accuracy of measurement and the valid number of responses in a given study. Welman, Kruger and Mitchell (2005: 142) define validity as the extent to which the research findings accurately reflect what is really happening in the situation. In this study the following methods were used to determine validity:

Face validity is based on the researcher's assessment of measuring what the study should be measuring. The researcher determined the objectives in the study, asked the questions pertaining to these objectives and pre-tested the questionnaire to determine that the pre-test respondents fully understood the questions and what was being asked of them. This pre-test took the form of nine conveniently sampled, first year Retail Marketing students who participated in the electronic survey and

provided feedback. Seven respondents successfully completed the questionnaires. The two respondents who did not complete their questionnaires were invited to re-do them but did not take up the offer.

Substance or construct validity represents the degree to which the survey questionnaire measures the responses theoretically to the expected constructs of the survey, i.e. the extent to which the objectives determined in the questionnaire are providing an indication of measurable concepts being asked. In this study, the literature reviewed provided direction from previous studies and surveys.

4.7 CONCLUSION

This chapter detailed the procedures and method followed in this research study. From the process of data capture through to analysis, the researcher concluded the study with 350 valid questionnaires.

In Chapter 4 the outcome of the analysis is explained, starting with descriptive univariate results of a demographic nature, proceeding to the influential factors and communication initiatives and concluding with the effectiveness of the DUT marketing communication strategy. In the next section bi-variate analysis results are described using the aim of the study and the objectives as indicated in this paragraph. These results provide interesting trends in the data analysed.

CHAPTER 5

ANALYSIS OF RESULTS

5.1 INTRODUCTION

The data was drawn from the responses given by respondents and analysed to establish the respondents' awareness of DUT's marketing communication strategies and whether they felt these strategies were influential in their choice to enrol at DUT. The respondents' demographics allowed the researcher to establish if the factors influencing students to choose DUT were related to race, age, language and income.

The analysis of results is broken into sections along the lines of the questionnaire. Based on the nature of the questions, the responses were categorised into three key sectors as per the objectives: influential factors, communication initiatives and communication media effectiveness. As the results were nominal data, a frequency count was used to determine how often certain responses occurred.

5.2 UNIVARIATE ANALYSIS

5.2.1 Descriptive analysis

The descriptive statistics include varied techniques to summarise data. These include tables, charts and summary statistics such as the mean, medium and standard deviation which are all used to illustrate the frequencies and percentages of responses in this study (Phelps, Fisher and Ellis, 2007: 218).

The Chi-squared goodness of fit test was applied to all questions to ascertain whether any one option was selected significantly more or less often than expected. The expected outcome arises when equally the same number of responses for and against a particular option result therefore forming an average response, which is known as the null hypothesis. Walliman (2001: 175), states that a null hypothesis occurs "...on any flip of a fair coin, the probability of getting heads is equal to that of getting tails". Howitt and Cramer (2000: 129) state that probability is abbreviated as ' $p < 0.05$ ' where p stands for probability of less than 5% or five times in 100 responses. This relationship is found when the null hypothesis is true and the therefore the statistical significance used is 0.05.

In this study, demographic information was sought, namely; gender, race, age group, home language, geographic location of family home and which school last attended. In the three key categories, the Influential Criteria were identified via Questions 4, 5, 6, 7 and 11 and in two demographic questions; communication initiatives were identified via Questions 12 and 14 and thirdly, communication media effectiveness are sought through Questions 2, 8 and 9.

5.2.2 Profile statistics

Profile statistics in this study are described in terms of demographic variables. The variables which were selected and used in this study include gender, age group, race group, income bracket and faculty representation in the sample n=350.

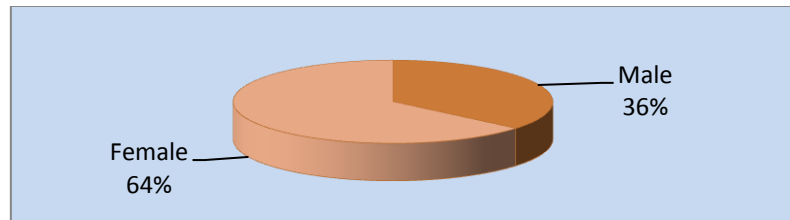
Two of the variables which were discarded for the purpose of this study were geographic location of family home and last school attended as the intention of the question was to try to be able to ascertain the type of school the respondent attended, i.e. the old model C school, rural school or a private school, as determinants of the standard of education they may have received, as well as the choice influence various types of schools offer. This line of questioning was attempted to try to determine the subgroup as identified in the Bonnema and Van Der Walt, Cape Metropolitan study (2008) in which the respondent from a certain socio-economic disposition would make a choice on the basis of the status of primary education they received. Unfortunately, due to the fact that the supporting information in the form of a school registry indicating the type of school was not available the information was discarded.

In Figures 5.1 to 5.4 individual demographic variables are analysed and results are statistically displayed representing the respondents in this study.

5.2.2.1 Gender representation of this study

The profile of the study was made up of 126 male and 224 female respondents illustrated in Figure 5.1 as a percentage.

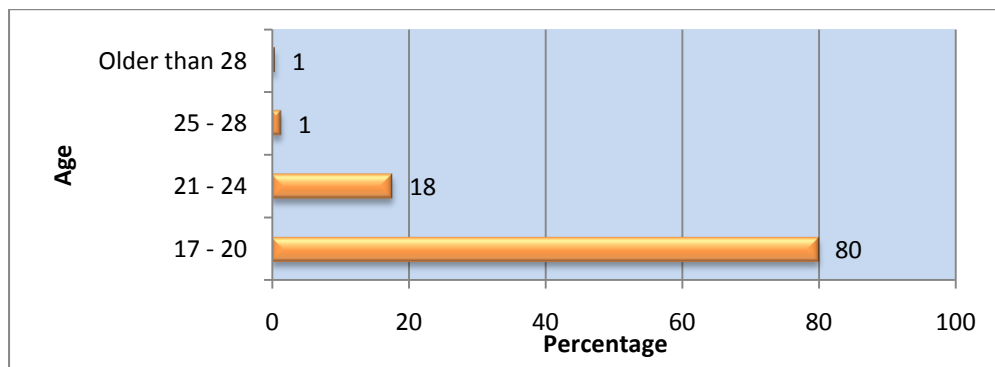
Figure 5.1 Gender demographic variables



5.2.2.2 Age groups represented in this study

The demographic variable of age was broken into four groups, namely, 17 to 20, 21 to 24, 25 to 28 and older than 28. The largest group of respondents (281) fell into the 17 to 20 age group, with the 21 to 24 age group forming 62 and the balance of the respondents represented as 5 in 25 to 28 and 2 in the older than 28 age group. Figure 5.2 shows these statistics as a percentage.

Figure 5.2 Age groups



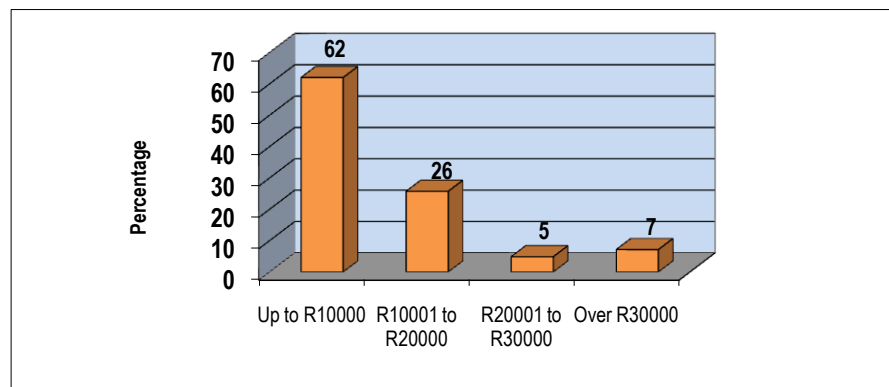
5.2.2.3 Race groups identified in this study

Respondents in the study were represented by the following race groups: Black n = 255 or 73%; Coloured n = 13 or 4%; Indian n = 65 or 19%; and White n = 17 or 5%.

5.2.2.4 Gross monthly income per household

The respondent population comprises $n = 218$ in the up to R10000.00 per month income group, with $n = 90$ in the R10000.00 to R20000.00 income groups, $n = 17$ in the R20001.00 to R30000.00 income group and lastly $n = 75$ in the over R30000.00 per month income bracket. These statistics are illustrated in 5.3 as percentages.

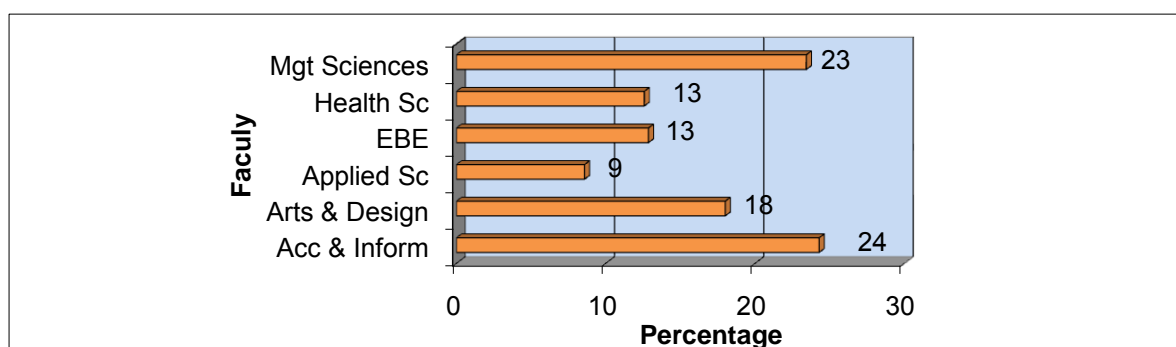
Figure 5.3 Gross income groups per household



5.2.2.5 Faculty representation in this study

In this study, the largest representation of $n = 86$ was from the Faculty of Accounting and Informatics. The second largest representation of $n = 82$ is from the Faculty of Management Sciences. The Faculty of Arts and Design was represented by $n = 63$ of the respondents. The Faculties of Health Sciences $n = 45$ and Engineering and the Built Environment were each represented by $n = 44$ of the respondents. Lastly $n = 30$ of the respondents in this study were from the Faculty of Applied Sciences. This is shown in Figure 5.4 statistically represented in percentages.

Figure 5.4 Faculty representation



5.2.2.6 Discussion of Demographics

In the demographic report the frequency and percentage analysis is shown in Table 5.1 where the six demographic variables are classified and those that are statistically significant are highlighted. Discussion of results follows the table.

Table 5.1 Respondents details per faculty, age, language, race group and gender

Demographic Variable	Detail	Frequency	Percentage (%)
	Sample	350	100
Faculty	Accounting & Informatics	86	24.6%
	Applied Sciences	63	18.0%
	Arts & Design	30	8.6%
	Engineering & the Built Environment	45	12.9%
	Health Sciences	44	12.6%
	Management Sciences	82	23.4%
Age	17-20	280	80.2
	21-24	62	17.8
	25-28	5	1.4
	Older than 28	2	.6
Gross household monthly income	Less than R10 000	217	62.2
	R10 001 – R20 000	90	25.8
	R20 001 – R30 000	17	4.9
	Over R30 001	25	7.2
Home Language	Zulu	205	59.4
	Xhosa	27	7.8
	Sotho	8	2.3
	English	99	28.7
	Afrikaans	1	.3
	Other	5	1.4
Race group	Black	254	72.8
	Coloured	13	3.7
	Indian	65	18.6
	White	17	4.9
Gender	Female	224	63.9
	Male	126	36.1

In the six demographic variables of this study, results show that significantly more respondents than expected were female, Black, Zulu speaking, in the 17 to 20 age group and live in a home in which the gross monthly household income is up to R10 000 per month ($p < .0005$). These results are highlighted in blue in Table 5.1. The highest percentage of respondents' enrolled in the Faculty of Accounting and Informatics (24.6%). The analysis results show that there are significantly ($p < .0005$) more respondents than expected who made the decision to study at DUT at the age of 17 or 18.

5.2.3 Factors influencing choice of which HEI to attend

Upon further analysis of the data, the nine criteria stated in Question 4 (see questionnaire Appendix A) which identified influential factors in this study, were ranked and given a weighted average ratio as illustrated in Table 5.2. The weighting was calculated for each factor by summing the product of the number of responses with the scale value of 5 through 1, for Very Important through Least Important. This value was then averaged to give the indicated ratio. The p-value was derived from the Chi-square goodness-of-fit tests and indicates that each influence was significant.

Table 5.2 Factors influencing choice – ordered from the most important to least important according to weighted ratios.

Ranking	Influential Factors	Weighted Average Ratio	P Value
1	Standard of Education provided	0.126	<.0005
2	Programmes offered	0.123	<.0005
3	Likely employment once graduated	0.122	<.0005
4	Location	0.115	<.0005
5	Work integrated Learning	0.114	<.0005
6	Price	0.113	<.0005
7	Bursary availability	0.108	<.0005
8	Company sponsorship	0.100	<.0005
9	Friend/Relative Studied at DUT	0.078	<.0005

These ranked factors resulted in the Standard of education (quality of education given at DUT) being identified as the most important factor, with the Friend or relative studied at DUT being ranked as a factor which least influenced respondents when choosing they chose a HEI at which to study.

Programmes offered resulted in 74% of the respondents indicating that this influence was Very Important, with 21% of the respondents selecting this to be an important factor in their selection of HEI at which to study. The next highest influencing factor was indicated as the likelihood of attainment of employment upon graduation, being ranked the third most important influence in choosing which HEI to attend, where

76% of the respondents felt this was a Very Important influence and 18% felt that this was an important factor in their choice of where to study.

Analysis provided significantly more indications ($p < .0005$) in all nine influential factors than was expected, with only the standard of education resulting in a fewer than expected significance in the least important category as indicated in Table 5.2. The eight other criteria all ranked more than expected in the Very Important category and in the company sponsorship category, both Very Important and important was indicated as significant by a more than expected number of respondents.

5.2.4 Communication Initiatives used by DUT

Univariate analysis was conducted on Questions 2 and 3 which were based on the communication initiatives from the DoCA strategic plan 2008-2012. The objective of Question 2 was to detail the 12 communication initiatives to determine if the respondents were exposed to any of these media. In Question 3, the sources, whether print media, electronic media or personal interaction, were identified as the most influential to respondents when choosing a HEI at which to study.

In Question 3 the following results were captured and show in Table 5.3.

Table 5.3 The most helpful source of assistance for choice of HEI at which to study.

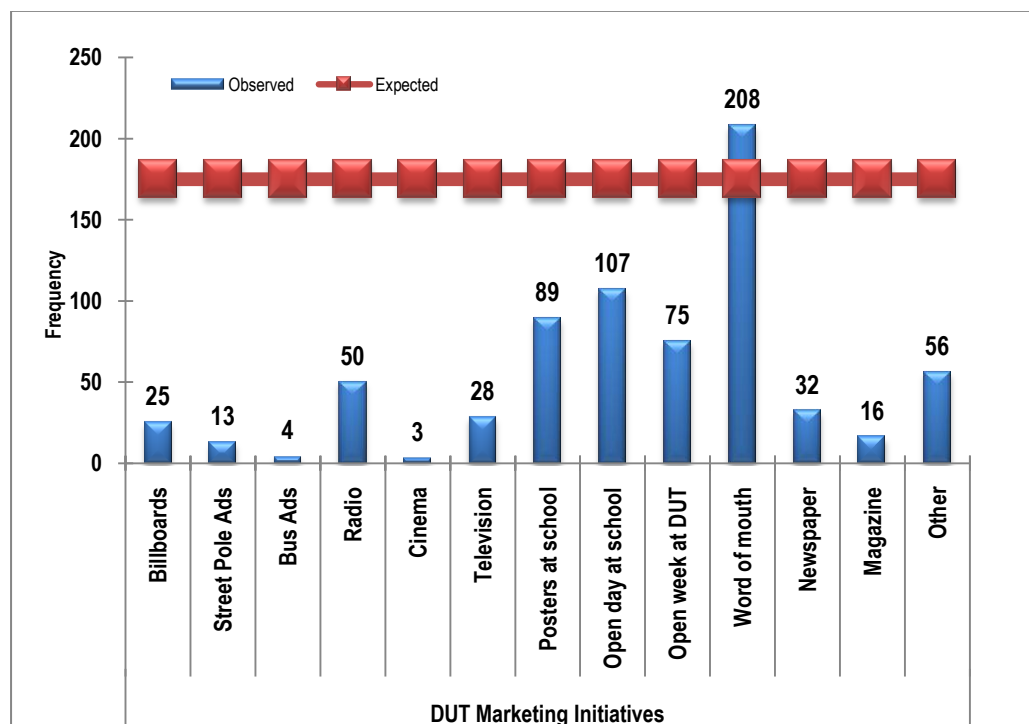
	Frequency
Print media	190
Electronic media	82
Personal interaction	78
Total	350

The inferential analysis concluded that print media had significantly more ($p < .0005$) respondents' than expected who selected the Print Media option as a most helpful source of assistance when choosing a HEI at which to study. Table 5.3, shows that 190 respondents indicated that print media was the most helpful source for assisting their choice of where to study. This is higher than the average of 175 respondents and therefore provided the significant result upon the chi-square goodness of fit test.

The outcome of print media as the main source which assists respondents in deciding at which HEI to study, indicates that they are reliant on print media to inform them of the options such as location, price, bursary availability, work integrated learning, programmes offered, company sponsorship and likelihood of employment upon qualification.

Although the Print Media outcome from the analysis appears to indicate a preference for this media's influential direction, the outcome of the marketing communication initiatives in Question 2 provides 206 responses that Word of Mouth influenced the respondents. It is not clear if this signifies that the 190 students were more influenced by Word of Mouth than Print Media in their choice of HEI at which to study. Figure 5.5 illustrates all the communication initiatives implemented by DUT marketing communication practitioners, which would have influenced the respondents of this study group.

Figure 5.5 DUT marketing initiatives shown as observed and expected values



In all initiatives, significantly ($p < .0005$ for all) fewer respondents than expected indicated that the initiative influenced them to study at DUT, except for word of mouth, where respondents indicated that this initiative was responsible for their

deciding to study at DUT. The observed number for word of mouth is significantly more ($p < .0005$) than expected. As illustrated in Figure 5.5 the observed 208 respondents who indicated word of mouth exposure exceeds that of the expected average significantly, therefore supporting the chi-squared result. This appears to indicate that the most effective form of marketing communication would be word of mouth.

Question 2 did not specifically ask if the respondents were exposed to the 12 media criteria and if so, which of the initiatives most influenced their choice to study at DUT.

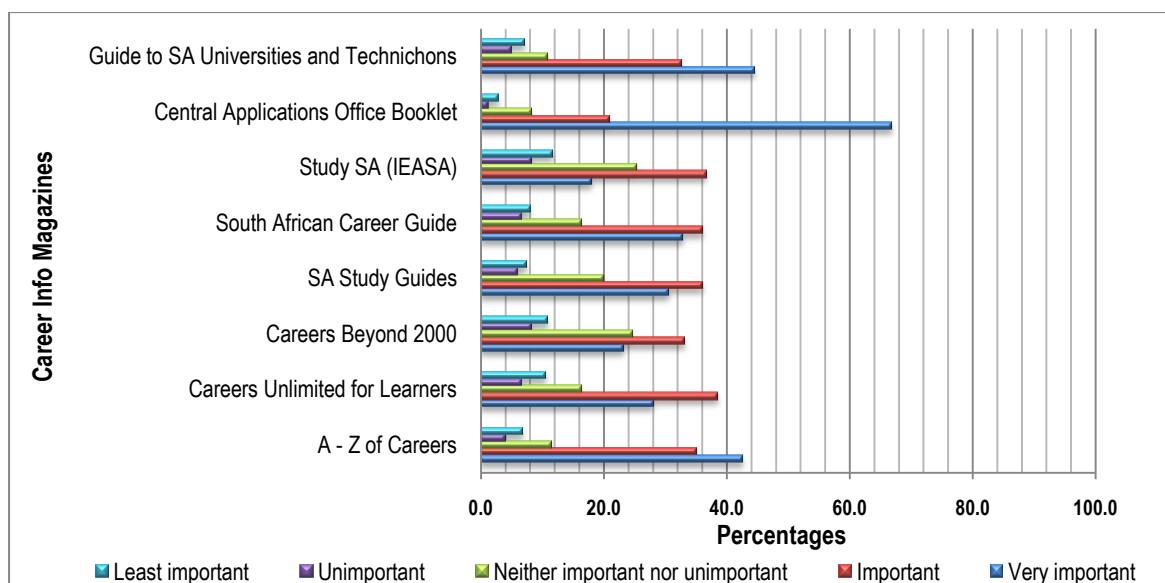
5.2.4.1 Communication media and their effectiveness

In determining the effectiveness of the various media used, this section will examine respondents' influential resources in career publications, newspapers, radio stations, internet and word of mouth applications used to advertise DUT.

a. Career Publications

The current strategic marketing communication plan uses eight career information publications to disseminate programme information, and advise prospective students of the DUT's location and bursary availability. In Question 5 (described in Figure 5.6) 66.9% of respondents show a Very Important response for the Central Applications Office Booklet. The Guide to SA Universities and Technikons indicates a 44.6% Very Important response and the A to Z of Careers reports a 42.6% Very Important response.

Figure 5.6 Publications used in strategic plan from Very Important to least important



Five publications all show a high range of Important responses in the following order; Study SA (IEASA): 36.6%, SA Study Guides and SA Career Guides both report 36%, A-Z Careers: 35.1%, Careers Beyond 2000: 33.1% and Careers Unlimited shows 32.6%.

The outcome of this question would appear to indicate that the CAO Booklet is the most influential media along with the Guide to SA Universities and Technikons and the A-Z of Careers, supporting the print media result of source of information for HEI choice. DUT places Career information adverts and editorial into all eight magazines indicated in Figure 5.6.

b. Newspapers

The marketing plan also utilises nine newspaper publications to disseminate information relating to marketing DUT to prospective students. Table 5.4 (Question 6) shows that 88 respondents indicated (in blue) that they found the Daily News a Very Important influence in their decision to study at DUT.

Table 5.4 Newspapers used in the DUT marketing strategy

	Daily News	Isolezwe	Ilanga	Mercury	Natal Witness	Sunday Tribune	Sunday Times	Saturday Independent	Weekend Witness
Very Important	88	50	50	44	22	50	78	26	23
Important	86	73	60	88	46	78	76	57	39
Neither Important Nor Unimportant	77	83	95	93	125	95	80	113	113
Unimportant	36	56	53	47	58	54	41	61	69
Least Important	63	88	92	78	99	73	75	93	106

This appears to signify that the best newspaper sources in this study would be the Daily News, Isolezwe, The Mercury and The Sunday Times (indicated in yellow in Table 5.4).

Isolezwe which reports 88 respondents who found this publication to be Least Important (indicated in red in Table 5.4).

As the Neutral responses indicated in green in Table 5.4 may contradict the outcome from Very Important and Important responses, further analysis of the data was conducted, using the newspaper readership of the respondents in this study, (see questionnaire Appendix A), which were ranked and given a weighted average ratio illustrated in Table 5.5.

The weighting was calculated for each factor by summing the product of the number of responses with the scale value of 5 through 1, for Very Important through Least Important, where Daily News is ranked most important and Weekend Witness is least important.

Table 5.5 Newspapers ranked in order of importance

Ranking	1	2	3	4	5	6	7	8	9
Newspapers	Daily News	Sunday Times	Sunday Tribune	Natal Mercury	Isolezwe	Ilanga	Saturday Independent	Natal Witness	Weekend Witness
Weighted responses	1150	1091	1028	1023	991	973	912	884	854
Weighted Ratio	0.1291	0.1225	0.1154	0.1149	0.1113	0.1093	0.1024	0.0993	0.0959

c. Radio stations

Question 7 focussed the study on the radio stations used in the DUT marketing strategy. In Table 5.6 the frequencies of the study are indicated for the six radio stations DUT uses. The most respondents per radio station are indicated in blue.

Table 5.6 Radio stations used in the DUT marketing strategy

	Metro	Umhlobo	Lotus	Ukozi	East Coast Radio	5FM
Very Important	62	5	23	137	109	51
Important	69	31	31	54	79	68
Neither Important Nor Unimportant	100	126	114	55	78	95
Unimportant	39	65	64	29	25	48
Least Important	80	123	117	74	58	88

Very Important responses are indicated by 137 responses for Ukozi fm and 109 responses for East Coast Radio. The least important radio station was indicated as Lotus fm with 117 responses.

In Question 7.7 the opportunity for respondents to suggest other radio stations was provided and 72 respondents made comment thereon. Sixty-six of these were for Gagasi fm. The balance was Lesedi fm (3 responses), Youth fm (2 responses), Radio 2000 and Inanda fm with 1 response each.

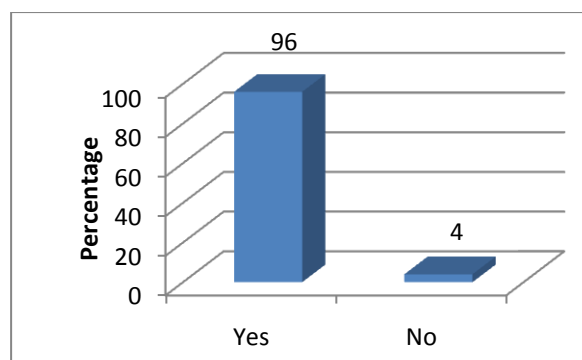
It is noted that although Gagasi FM represents 18.9% of the respondents it cannot be included in the table with the other radio stations as it was not in the original list and is therefore disadvantaged compared to the other stations. Thus, they cannot be compared. However, this is an indicator for marketing initiatives in the future to consider using this radio station in order to communicate with our target audience.

d. The Internet

The study focussed on the respondents' awareness of the internet, their usage of the internet and the evaluation by respondents of the DUT website. In Questions 8, 9, 10 and 11 the respondents are required to indicate yes or no to the first two questions in this sector. In Question 10 the respondents are to comment on how they rate the DUT website and in Question 11 they are asked to indicate one of five options as to the influence the DUT website had on their decision to study at DUT.

In Figure 5.7 the responses of the respondents indicate that almost all of them use the internet n = 336 or 96%.

Figure 5.7 Internet usage



Results from Question 8 indicate internet usage whereby 336 respondents specify they used the medium and 14 indicated they did not use the internet.

Although the DUT website was visited by 301 respondents (according to the responses to Question 9), 36 (10.3%) of the respondents indicated that they had not been on the website and were therefore not able to evaluate it (see Table 5.7).

Table 5.7 DUT Website Evaluation

	Frequency	Valid Percent %	Rank 1 - High	Weighted responses	Weighted ratio
Excellent	85	24.3%	2	425	35.39%
Good	141	40.3%	1	564	46.96%
Average	52	14.9%	3	156	12.99%
Fair	20	5.7%	5	40	3.33%
Bad	16	4.6%	6	16	1.33%
No response	36	10.3%	4	0	0.00%

Question 10 produced the responses indicated in Table 5.7 in which 141 respondents (40.3%) rate the DUT website as good (indicated in blue). The ranked responses show that the second highest percentage rating the website as excellent and the third highest percentage rate it as average.

In further analysis was conducted where the weighted responses and weighted average ratio, give a clearer evaluation of the DUT website evaluation. A positive response of 82.35% would appear to signify that the website is viewed very favourably. Conversely 4.66% responded negatively with non-comment from 10.3% of those surveyed.

In Table 5.8 the influence that the website impacted on the respondents as prospective students is illustrated in observed values, percentages and then ranked, indicating that respondents felt that the DUT website had made a fair amount of impact (indicated in blue) on their choice to study at DUT.

Table 5.8 Website influence to study at DUT

	Frequency	Percent	Rank 1-Hi
A great deal	99	28.3%	2
A fair amount	117	33.4%	1
A little	34	9.7%	4
Not much	29	8.3%	5
Not at all	71	20.3%	3

DUT website influenced second highest ranked respondents a great deal with third highest number of respondents indicating that they were not influenced at all by the DUT website.

The marketing communication strategy is currently using the DUT website and print media to run the sms campaign. Determining the respondents' use of the internet and messaging services could provide information for recommendations.

Question 12 focussed on the respondents' usage of networking sites and internet messaging services. Respondents indicated that MiXit was the most frequently used media specified in the questionnaire.

In Table 5.9 the blue highlight indicates that the highest number of respondents found MiXit a Very Important networking media which they used everyday. Twitter and Windows Live Space both show equally that the highest number of respondents never used these mediums. Collectively, My Space, the Grid, You Tube and FaceBook indicate that respondents never used these media and are highlighted in yellow on the bottom row of Table 5.9.

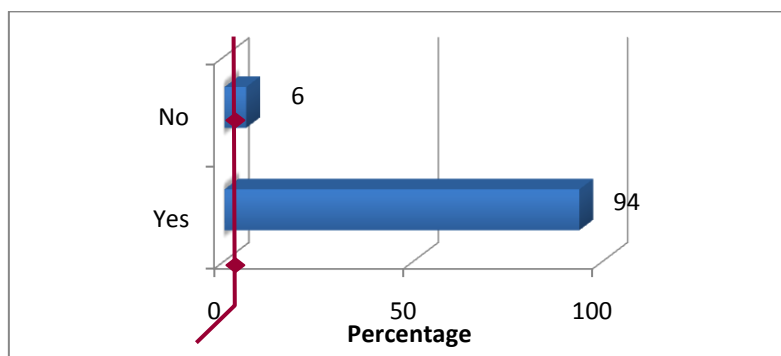
Table 5.9 Networking sites and internet messaging services

	FaceBook	MiXit	My Space	The Grid	Twitter	Windows Live Space	You Tube
Every day	87	148	10	11	12	12	19
A few times a week	90	54	21	12	19	22	40
A few times a month	60	26	22	29	16	17	45
a few times a year	17	28	15	17	14	10	34
Never	96	94	282	281	289	289	212

The inferential analysis shows that FaceBook is selected as used a few times a year by significantly fewer respondents than expected.

e. Family and Friends influence via word of mouth

Question 13 enquires of the respondents whether they would recommend DUT to Family and/or Friends with a Yes or No response. In Figure 5.8 it can be seen that n = 328 respondents replied that they would recommend DUT to family and or friends.

Figure 5.8 Recommendation of respondents to study at DUT

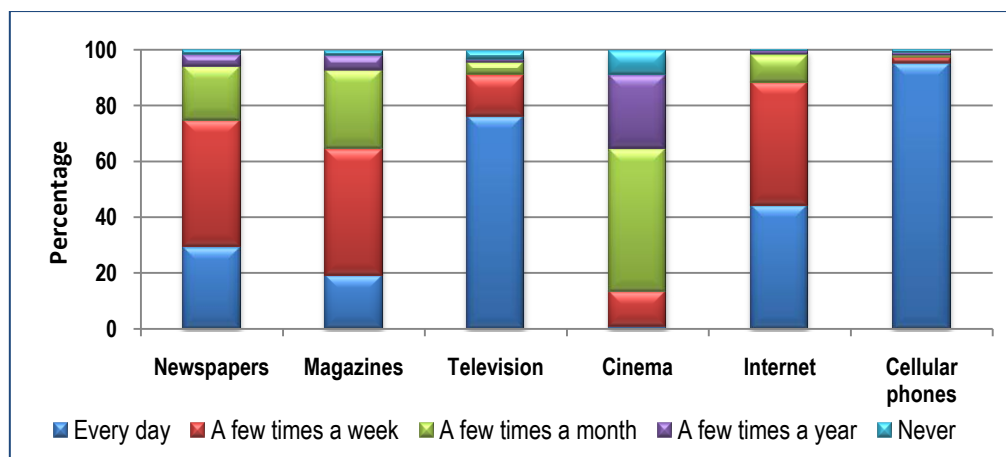
In Question 13 respondents' indicate that significantly more ($p < .0005$) than expected selected a yes response to recommending DUT to friends and family. In the analysis this could indicate that they are content consumers and they may therefore be repeat buyers i.e. they complete a national diploma level and return to enter as a Bachelor of Technology student and therefore return loyally to DUT to continue studies.

f. Access to multiple media sources

In Question 14 respondents were asked if they had access to a variety of media. Results showed that 85% of respondents advised that had access to multiple media sources.

In Figure 5.9, six sources of media were compiled to assess the respondents' affinity to one or more of these media and the extent to which these media were used was determined in a 5 point scale from Everyday through to Never.

Figure 5.9 Exposure to multiple media sources



Significantly more ($p < 0.005$) respondents than expected selected access to television and cellular phones everyday, with newspapers and magazines being selected a few times a week. Furthermore, significantly more respondents selected the cinema as visited a few times a month.

Table 5.10 Respondents' indication of media usage

	Newspapers	Magazines	Television	Cinema	Internet	Cellular Phones
Everyday	103	67	267	3	154	333
A few times a week	159	159	51	44	155	7
A few times a month	67	99	16	179	35	3
A few times a year	15	17	4	92	4	3
Never	6	6	10	31	2	4

In Table 5.10 analysis of the results of media usage were measured against the frequency of use indicated by the respondents. The highest number of respondents indicated they used cellular phones everyday and the second highest number of respondents indicated they watched television everyday and are highlighted in blue in Figure 5.10.

The following usage rating was set as a few times a week and shows that both newspapers and magazines were read by approximately half the respondents, with the internet being used by approximately half the respondents. These three results are indicated in green on Figure 5.10. Results show that the largest number of respondents attended the cinema a few times a month indicated in red and conversely, the highest number of respondents showed they never attend the cinema indicated in dark blue in Figure 5.10.

5.3 BIVARIATE ANALYSIS OF VARIABLES

5.3.1 Introduction

A bivariate analysis is a statistical method designed to detect and describe the relationship between two variables. Cross-tabulation is one technique used for analysing the relationship between two (ordinal or nominal) variables and the Chi-square statistic indicates the significance of the relationship. It is reported as a p value. If this p-value is less than .05 then the association between the two variables is considered to be statistically significant. For example, higher income may positively associate with higher educational levels. The direction of the relationship is not always implied. It is not always possible to know which came first, higher income or higher education. However, when independent variables such as gender (nominal variable) or race are used, it is assumed that changes in the dependent variable are affected by the independent variable. So, if gender is associated with income, then it is assumed that gender affects income rather than income affecting gender (Mutchler, 2009).

5.3.2 Chi-square test of independence

The Chi-squared test of independence or association analyses the comparison of two variables in sample data, determining if there is any relationship between them.

The intention of this test is finding a comparison between the observed frequencies and the frequencies that would be expected if the null hypothesis (ie, no association or statistical independence) existed. If the value of the test statistic for the chi-squared test of independence is too large, it indicates a poor association between the observed and expected frequencies and the null hypothesis of independence is then rejected (Easton and McColl, 2010).

This test for independence tests for any kind of functional relationship and was carried out on the cross-tabulations of two variables to ascertain whether any significant relationship exists between those variables. Under the null hypothesis, if no relationship exists between the variables, then they are independent (Mutchler, 2009).

Each question was cross-tabulated with the demographic variables faculty, home language, gender, age group, race and income. In order to satisfy conditions of the test and thus ensure validity of results, categories in some questions were combined in such a way that sensible meaning was retained.

For example:

- The last two categories in the Income variable were combined to create a category Over R20000.00;
- Home language categories were combined as follows: Zulu + Xhosa + Sotho + Other (all African languages) => Black languages; English and Afrikaans were combined into one group;
- Race variable was transformed to have categories Black and White/Coloured/Indian.

It was also necessary, in some cases, to combine Unimportant with Least important. In one case neither important nor Unimportant was added to this grouping just mentioned. At no time was the meaning of the categories lost.

Specific relevant demographic variables were also cross-tabulated with other demographic variables to ascertain whether a significant relationship exists. Results are reported in section 5.3.13 of this chapter.

At this point in the chapter, the structure as indicated in the introduction to bivariate analysis is followed. The results of the cross-tabulation analysis sets out the influence factor variables cross-tabulated with demographic variables significant results, being reported. Following this, the marketing initiative variables and most helpful sources of assistance in making a choice of where to study were cross-tabulated with demographic variables. The reporting process will then deal with the analysis of the various media used cross-tabulated with demographic variables. Finally, the outcome of demographic variables being cross-tabulated with other demographic variables where the results are statistically significant will be reported.

5.3.3 Cross-tabulation of demographic variables and influence criteria

The analysis of demographic variables (gender, race, income, home language and age) cross-tabulated with variables of influence such as price, standard of education, bursary availability, company sponsorship and whether friends or family studied at DUT, resulted in significantly more than expected outcomes as summarised in Table 5.11. Displayed in Figure 5.10, section 5.3.4, a bar chart represents respondents' age groups cross-tabulated with location, and similarly in Figure 5.11 the bar chart represents cross-tabulated variables of age and friends/relatives studied at DUT.

Table 5.11: Demographic cross-tabulation with Influence factors

Interpretation				
Influence factors	Demographic variable	p-value	Significantly more than expected...	...selected the response option...
Price	Race	0.02	White/Coloured/Indian	Unimportant
Price	Income	0.027	Over R20000	Unimportant
Price	Language	0.011	English/Afrikaans	Unimportant
Standard of Education provided	Gender	0.001	Male	Important
Bursary availability	Income	<.0005	<= R10000	Very Important
			Over R20000	Neutral/Unimportant
Bursary availability	Race	<.0005	Black	Very Important
			White/Coloured/Indian	Neutral/Unimportant
Bursary availability	Language	<.0005	Black languages	Very Important
			English/Afrikaans	Neutral/Unimportant
Company Sponsorship	Languages	0.027	English/Afrikaans	Neutral
Company Sponsorship	Income	0.002	R10001 - R20000	Neutral
			Over R20000	Neutral/Unimportant
Friend/relative studied at DUT	Income	0.025	Over R10000	Neutral

a. Price and Race, Income and Home Language

A cross-tabulation analysis was performed on the influence of the price variable with race variable with significantly more ($p = 0.02$) than expected White/Coloured/Indian respondents selecting price as an Unimportant influence when choosing a HEI at which to study.

Analysis of cross-tabulations of price variable with household income variable indicated a significantly more ($p = 0.027$) than expected number of respondents with a household income of over R20 000.00 pm found the influence Unimportant in their choice of where to study.

In the cross-tabulation of language speaking variable with price variable the English/Afrikaans speaking respondents were found to be significantly more ($p = 0.011$) than expected indicating responses to price as an Unimportant in the factor of choosing where to study.

b. Standard of Education and Gender

In this cross-tabulation the result indicates that significantly more ($p = 0.001$) than expected males selected the standard of education as Important as a response to an influence of choice of HEI at which to study.

c. Bursary availability and Income, Race and Language

Respondents in the $\leq R10000.00$ income bracket indicated significantly more ($p < .0005$) than expected that they found bursary availability to be Very Important, whereas respondents of the Over R20000.00 income bracket indicated with the same statistical significance that bursary availability was 'Neutral to Unimportant' in their decision of where to study.

This would appear to be a logical finding since those students from the lower income group are inclined to require bursary assistance in order to study at a HEI.

In the Black race group significantly ($p < .0005$) more than expected respondents showed that bursary availability was Very Important and Whites/Coloured/Indians were equally significantly disposed that the bursary availability was Neutral to Unimportant. Similarly, in the Black language respondents chose Very Important significantly more than expected with the English/Afrikaans respondents' responding

Neutral to Unimportant responses where both were significantly more ($p < .0005$) than expected responses.

This too is indicative of the socio-economic status of a majority of the student population at DUT.

d. Company Sponsorship and Language and Income

The variable language was cross-tabulated with the influence variable of company sponsorship as a determinate which influences the choice of where to study.

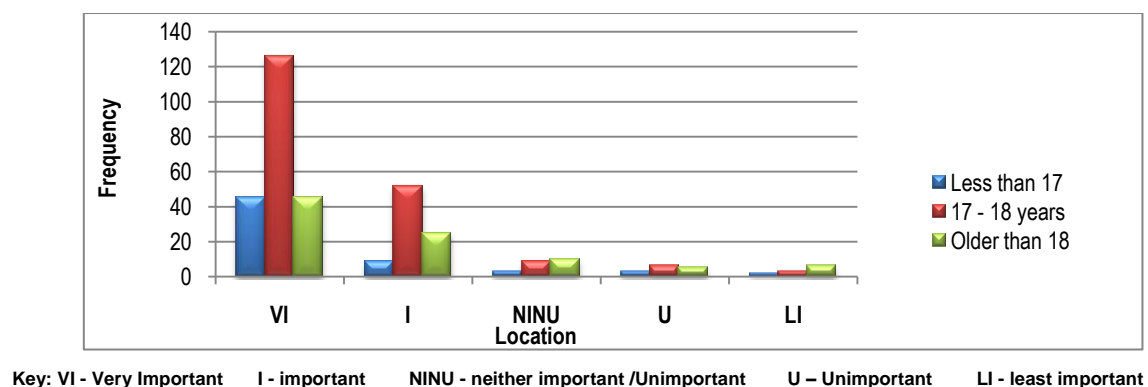
Significantly ($p = 0.027$) more English/Afrikaans speaking respondents were Neutral as to the influence this may have on them.

The respondents with an income group per household of R10 001.00 - R20 000.00 selected Neutral to a significantly ($p = 0.002$) more than expected rate and similarly those respondents from the Over R20 000.00 income group per household of were indicating Neutral or Unimportant more than statistical significance ($p = 0.002$) rates of response.

5.3.4 Cross-tabulation of Location with Age

In this analysis the age data from both Question 1b and the demographic detail of how old the respondents were when deciding when to study at an undergraduate level were grouped prior to the cross-tabulation taking place.

Figure 5.10: Age groups cross-tabulation with location

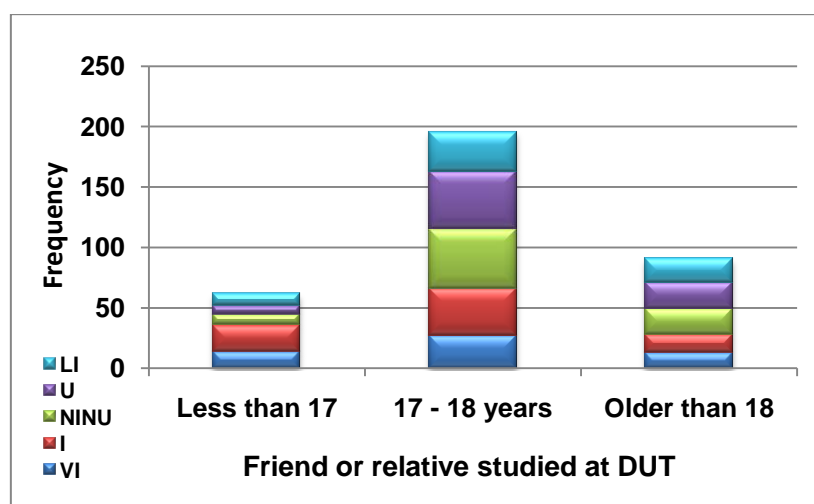


In Figure 5.10 significantly more ($p = .021$) than expected of respondents whose deciding Age is Older than 18 years, indicated that Location (Question 4.1) was

Least Important or Neither Important nor Unimportant, while significantly fewer than expected of the less than 17 Age Group found Location Important.

Figure 5.11 shows the bar chart representation of respondents' age groups and their friends and or relatives influence on the choice to study at DUT.

Figure 5.11: Cross-tabulation of age groups with Friend/relative studied at DUT



Key: VI - Very Important I - important NINU - neither important /Unimportant U – Unimportant LI - least important

In Figure 5.11 significantly more ($p=.034$) than expected respondents of the less than 17 Age Group rated the fact that a Friend or Relative Studied at DUT (Question 4.8) as Very Important or Important to their decision to study at DUT.

5.3.5 Cross-tabulation of communication initiatives and demographics

In this section, the cross-tabulation analysis with the influence factors of Question 2 provided significant results with Question 2.4 (radio) and race, income, language and age (Table 5.12). Significance shows with Question 2.6 (TV) and gender, race and language, as seen in Table 5.13. Posters displayed at school (Question 2.7) with faculty, race and language (Table 5.14). The results in Questions 2.8 (Open Day at schools) and 2.9 (DUT Open Day) both indicated that there was significance with faculties, as seen in Table 5.15. Finally, the last significant result was 2.10 (Word of mouth) with faculty, race and language (Table 5.16). Question 3 (print, electronic media or personal interaction) shows only a significant cross-tabulation with income reported in Table 5.17.

a. Radio results

In Table 5.12, it can be seen that in this study respondents from the Black ($p=.001$) race group, in the income bracket of less than R10 000.00 pm ($p=0.007$), and whose home language are Black languages significantly more ($p=<.0005$) than expected said that radio station communications had influenced their decision making process in choosing to study at DUT.

Table 5.12: Cross-tabulation of radio with race, income, language and age

			Interpretation	
Question 2.4	Demographic variable	p-value	Significantly more than expected...	...selected the response option...
Radio	Race	.001	Black	Yes
	Income	0.007	\leq R10000	Yes
	Language	$<.0005$	Black languages	Yes
	Age	0.024	Older than 28	Yes
Question 2.4	Demographic variable	p-value	Significantly fewer than expected...	...selected the response option...
Radio	Language	$<.0005$	English/Afrikaans	Yes

b. Television results

Television, as an influence cross-tabulated with gender, race and language of respondents' demographic variables in Table 5.13, shows the following outcomes: male ($p=0.045$), and African speaking ($p=0.041$) respondents more than significantly agreed that television was a positive influence in choosing to study at DUT, where significantly fewer White/Coloured/Indian ($p=0.041$), and English/Afrikaans speaking respondents said that television was an influence in enrolling at DUT.

Table 5.13: Cross-tabulation of Television with gender, race and language

			Interpretation	
Question 2.6	Demographic variable	p-value	Significantly more than expected...	...selected the response option...
Television	Gender	0.045	Male	Yes
	Language	0.041	Black languages	Yes
Question 2.6	Demographic variable	p-value	Significantly fewer than expected...	...selected the response option...
Television	Language	0.041	English/Afrikaans	Yes
	Race	0.041	White/Coloured/Indian	Yes

c. School posters results

Where the analysis of cross-tabulation of school posters' influence on respondents, with race groups a significantly more than expected Black ($p=0.005$) racial group, speaking African languages ($p=0.004$) response were that the school posters did influence their decision to study at DUT, and White/Coloured/Indian ($p=0.005$) racial groups, speaking English/Afrikaans ($p=0.004$) response that they were not influenced by posters in their choice to study at DUT as indicated in Table 5.14.

Respondents in the Faculties of Arts and Design and Engineering and the Built Environment indicated significantly fewer ($p=0.038$) than expected respondents selected that the school posters had influenced their decision to study at DUT.

Table 5.14: Cross-tabulation of Posters at School with faculty, race and language

Question 2.7	Demographic variable	p-value	Interpretation	
			Significantly more than expected...	...selected the response option...
School posters	Race	0.005	Black	Yes
			White/Coloured/Indian	No
	Language	0.004	English/Afrikaans	No
			Black languages	Yes
Question 2.7	Demographic variable	p-value	Significantly fewer than expected...	...selected the response option...
School posters	Faculty	0.038	A&D, EBE	Yes

Key: Faculty names, Acc & Info – Accounting & Informatics, A&D – Arts & Design, App Sc – Applied Sciences, EBE – Engineering & the Built Environment, H Sc – Health Sciences and Mgt Sc – Management Sciences

d. Open Day results

For both Question 2.8 (Open Day at Schools) and 2.9 (Open week at DUT) the only significant demographic variable in the analysis was with respondents of various faculties. In the case of School Open day, significantly more Health Sciences ($p=0.014$) responded yes and Arts and Design responded no with the same p value as to whether the school visit had assisted their decision to study at DUT as in Table 5.15.

In the case of the DUT Open Week respondents in the Faculties of Applied Sciences and Engineering and the Built Environment indicated significantly ($p=0.034$) more than expected a yes response to this influence, whereas significantly ($p=0.034$)

fewer than expected respondents in Faculties of Arts and Design and Management Sciences indicated that DUT Open Days had influenced their decision of choice.

Table 5.15: Open Day at schools and DUT Open Week with Faculties

Question 2.8 & 2.9	Demographic variable	p-value	Interpretation	
			Significantly more than expected...	...selected the response option...
School Open Day	Faculty	0.014	HS	Yes
			A&D	No
DUT Open Week	Faculty	0.034	App Sc; EBE	Yes
Question 2.9	Demographic variable	p-value	Significantly fewer than expected...	...selected the response option...
DUT Open Week	Faculty	0.034	A&D; Mgt Sc	Yes

Key: Faculty names, Acc & Info – Accounting & Informatics, A&D – Arts & Design, App Sc – Applied Sciences, EBE – Engineering & the Built Environment, H Sc – Health Sciences and Mgt Sc – Management Sciences

e. Word of mouth results

Word of mouth is cross-tabulated with the demographic variables to see if a relationship exists between them as indicated in Table 5.16. Significant results are:

- Word of Mouth by Race - Significantly ($p=.04$) more Coloured/Indian/White grouping than expected indicated yes for WoM;
- Word of Mouth by language - Significantly ($p=.025$) more English/Afrikaans than expected respondents indicated yes to WoM;
- Word of Mouth by faculty - Significantly ($p=.003$) more Arts and Design respondents than expected indicated yes to WoM and significantly more Applied Science respondents than expected indicated no.

Table 5.16: Cross-tabulation analysis of Word of Mouth with faculty, race and language

Question 2.10	Demographic variable	p-value	Interpretation	
			Significantly more than expected...	...selected the response option...
Word of mouth	Faculty	<.0005	Arts and Design	Yes
			Applied Sciences	No
	Race	0.016	White/Coloured/Indian	Yes
	Language	0.007	English/Afrikaans	Yes

f. Source of assistance with income

In this analysis, the results indicate that significantly more ($p=0.005$) than expected of the less than R10 000.00 income bracket selected electronic media and fewer

($p=0.005$) than expected of the R10 000.00 – R20 000.00 income bracket selected personal interaction as seen in Table 5.17.

Table 5.17: Cross-tabulation of print, electronic media or personal interaction with income

Question 3	Demographic variable	p-value	Interpretation	
			Significantly more than expected...	...selected the response option...
Helpful media sources	Income	0.005	< = R10 000	Electronic media
			R10 000 – R20 000	Personal interaction

5.3.6 Cross-tabulation of various media and demographics

Analysis was conducted with Questions 5, 6, 7, 8, 10 and 11 in which the demographics of age, gender, language group and race group were cross-tabulated with career information and career guide publications.

5.3.6.1 Career guide magazines

A selection of eight Career Guidance Magazines were identified in the DUT marketing strategy as the method of influencing prospective students to choose to study at the DUT. In Table 5.18 the results of the significant analysis are indicated.

Table 5.18: Cross-tabulation of publications with language, gender, faculty, income and race

Question 5	Demographic variable	p-value	Interpretation	
			Significantly more than expected...	...selected the response option...
A-Z of careers	Language	0.04	English/Afrikaans	Neutral/Unimportant
Careers Unlimited	Gender	0.013	Male	Least important
SA Study Guide	Gender	0.023	Male	Least important
SA Career Guide	Gender	0.022	Male	Least important
SA Career Guide	Language	0.018	English/Afrikaans	Least important
Study SA	Gender	0.003	Male	Least important
CAO Booklet	Faculty	<.0005	A&D	Neutral/Unimportant
CAO Booklet	Income	0.011	Over R10000	Neutral/Unimportant
CAO Booklet	Race	0.016	White/Coloured/Indian	Neutral
CAO Booklet	Language	0.012	English/Afrikaans	Neutral/Unimportant
Guide to SA U&T	Race	0.005	White/Coloured/Indian	Least important
Guide to SA U&T	Language	0.004	English/Afrikaans	Least important
Guide to SA U&T	Income	0.006	Over R10000	Unimportant/ Least important

Key: Faculty names, Acc & Info – Accounting and Informatics, A&D – Arts and Design, App Sc – Applied Sciences, EBE – Engineering and the Built Environment, H Sc – Health Sciences and Mgt Sc – Management Sciences

In Table 5.18 significantly more than expected English/Afrikaans speaking respondents found the A-Z of Careers ($p=0.04$), and CAO Booklet ($p=0.012$) Neutral or Unimportant, with least important option being chosen for the Guide to SA Universities and Technikons ($p=0.004$) and SA Career Guide ($p=0.018$) influence of choice to study at DUT.

More males found the following publications, Careers Unlimited ($p=0.013$), SA Study Guide ($p=0.023$), Study SA ($p=0.003$) and SA Career Guide ($p=0.022$) significantly less important in their choice to study at DUT.

In this analysis the CAO Booklet produced significant results with the Arts and Design Faculty ($p<.0005$) with respondents showing more than expected responses in the Neutral/Unimportant category. Similarly, the income group Over R10000.00 ($p=0.011$) responded in the Neutral or Unimportant influence declared. Further to the CAO Booklet producing the above two outcomes, it also indicated a ($p=0.016$) significance in the White/Coloured/Indian race groups to a Neutral selection of influence by this Career Information booklet to assist their choice to study at DUT.

The Guide to SA Universities & Technikons provided a significant outcome when cross-tabulated with income ($p= 0.006$) of this particular income group Over R10000.00 selecting more than expected the option of Unimportant or Least Important influence on decision at which HEI to study. This publication also showed a significantly more ($p=0.005$) than expected least important influence for the White/Coloured/Indian race groups.

5.3.6.2 Newspaper career information, advertising and supplements

A selection of nine newspapers is used to disseminate career information to prospective students encouraging them to study at DUT. These are determined in the DUT marketing strategy and were used in this study to analyse whether they significantly influenced the respondents by race, language, income group or faculty when they chose to study at DUT.

The nine newspapers were The Daily News, Isolezwe, The Ilanga, The Mercury, The Natal Witness, The Weekend Witness, The Sunday Times, The Sunday Tribune and

The Saturday Independent. In Table 5.19 the results of the cross-tabulation analysis are displayed.

Table 5.19: Cross-tabulation of newspapers with race, language, income and faculty

Question 6.2	Demographic variable	p-value	Interpretation	
			Significantly more than expected...	...selected the response option...
Isolezwe	Race	<.0005	Black	Very Important
			White/Coloured/Indian	Least important
Isolezwe	Language	<.0005	Black languages	Very Important
			English/Afrikaans	Least important
Isolezwe	Income	0.004	<= R10000.00	Very Important
			Over R20000.00	Least important
Isolezwe	Faculty	0.023	Accounting and Informatics	Very Important
Question 6.2	Demographic variable	p-value	Significantly fewer than expected...	...selected the response option...
Isolezwe	Faculty	0.023	Health Sc and Arts & Design	Least important
Questions 6.3 & 6.4	Demographic variable	p-value	Significantly more than expected...	...selected the response option...
Ilanga	Race	<.0005	Black	Least important
			White/Coloured/Indian	Very Important
Ilanga	Language	<.0005	Black languages	Least important
			English/Afrikaans	Very Important
Ilanga	Faculty	0.002	Health Sciences	Least important
Ilanga	Gender	0.015	Male	Unimportant
			Female	Very Important
Ilanga	Income	0.006	<= R10000.00	Least important
			Over R20000.00	Very Important
Mercury	Race	0.05	Black	Least important
			White/Coloured/Indian	Very Important
Mercury	Language	0.031	Black languages	Least important
			English/Afrikaans	Very Important
Mercury	Faculty	0.008	Management Sciences	Unimportant
Mercury	Faculty	0.008	Applied Sciences	Least important
Question 6.4	Demographic variable	p-value	Significantly fewer than expected...	...selected the response option...
Mercury	Faculty	0.008	Health Sciences	Least important
Questions 6.5, 6.6, 6.7 & 6.9	Demographic variable	p-value	Significantly more than expected...	...selected the response option...
Natal Witness	Race	0.037	White/Coloured/Indian	Least important
	Language	0.031	English/Afrikaans	Least important
Sunday Tribune	Race	0.002	White/Coloured/Indian	Very important
	Language	0.001	English/Afrikaans	Very important
Sunday Times	Race	0.005	White/Coloured/Indian	Very important
			Black	Neutral
Sunday Times	Language	0.005	English/Afrikaans	Very important
			Engineering Built Environment	Important
Weekend Witness	Faculty	0.016	Health Sciences	Very important

Key: Faculty names, Acc & Info – Accounting and Informatics, A&D – Arts and Design, App Sc – Applied Sciences, EBE – Engineering and the Built Environment, H Sc – Health Sciences and Mgt Sc – Management Sciences

a. Isolezwe analysed with Race, Language, Income and Faculty

In Table 5.19, the cross-tabulation analysis of newspapers, Isolezwe was selected significantly more ($p < .0005$) often by Black respondents' who found this paper Very Important in influencing their choice. White/Coloured/Indian on the other hand significantly more ($p < .0005$) than selected this newspaper as Least Important in the decision making process. In the language demographic significantly more

($p < .0005$) African language speaking respondents found that Isolezwe was Very Important, whereas English/Afrikaans speaking respondents found significantly more ($p < .0005$) respondents selected Isolezwe as Least Important. Respondents in the income group \leq R10 000.00 found Isolezwe Very Important and significantly more ($p = 0.004$) than expected in the Over R20 000.00 income bracket found the newspaper Least Important in their choice of HEI at which to study. Lastly, in the demographic of Faculty significantly more ($p = 0.023$) respondents from Accounting and Informatics found this newspaper Very Important and those respondents Health Sciences and Arts and Design significantly more ($p = 0.023$) than selected Least Important where the Isolezwe was an influential criteria.

b. The Ilanga with Race, Language, Income, Gender and Faculty

In the responses for The Ilanga, the significantly more ($p < .0005$) than expected Black respondents found this newspaper Very Important whereas significantly more ($p < .0005$) than expected White/Coloured/Indian found it to be Least Important. The language demographic found that significantly more ($p < .0005$) than expected respondents who speak African languages found this newspaper Very Important whereas significantly more ($p < .0005$) English/Afrikaans speaking respondents found it Least Important. In the demographic of faculties, significantly more ($p = 0.002$) than expected Health Sciences respondents found this newspaper Very Important in their choice. In the demographic gender significantly more ($p = 0.015$) male respondents found it Least Important whereas significantly more ($p = 0.015$) than expected females found The Ilanga Unimportant. In the \leq R10 000.00 income group significantly more ($p = 0.006$) than expected respondents selected Very Important in their influence where significantly more ($p = 0.006$) respondents in the Over R20 000.00 income group selected Least Important for the influence of this newspaper.

c. Mercury with Race, Language and Faculty

In the case of The Mercury, significantly more ($p = 0.05$) than expected Black respondents found this newspaper Least Important and White/Coloured/Indian found it Very Important in influencing their choice to study at DUT. Respondents of African languages significantly more ($p = 0.031$) than expected found this newspaper Least Important and English/Afrikaans respondents found it Very Important as an influential

criteria in choosing where to study. Those respondents' of the Faculty of Management Sciences found significantly ($p=0.008$) that this newspaper was Unimportant and those of Applied Sciences ($p=0.008$) selected this newspaper as Least Important in their choice of where to study. The cross-tabulation analysis reported significantly fewer ($p=0.008$) respondents in the faculty of Health Sciences selected Least Important for The Mercury as an influence to study at DUT.

The four newspapers which resulted in significantly more than expected p-values when cross-tabulated with the variables race group, language, income group and faculty were The Natal Witness, Weekend Witness, Sunday Times and Sunday Tribune.

d. Natal Witness with Race and Language

Analysis of The Natal Witness with race significantly more than ($p=0.037$) expected White/Coloured/Indian selected this newspaper as the Least Important criteria of influence. Those respondents of English/Afrikaans language group significantly more than ($p=0.031$) expected selected Least Important for this newspaper as an influence to their choice of where to study.

e. Sunday Tribune with Race and Language

Significantly more than expected ($p=0.002$) White/Coloured/Indian respondents selected Sunday Tribune as a Very Important influence, with ($p=0.001$) English/Afrikaans speaking respondents' selecting Very Important influence in their decision to study at DUT.

f. Sunday Times with Race and Language

In the cross-tabulation of Sunday Times with race significantly more ($p=0.005$) White/Coloured/Indian selected Very Important and significantly more than expected ($p=0.005$) Black respondents selected 'Neutral'. In the analysis of this newspaper with language ($p=0.005$) English/Afrikaans speaking respondents in this study selected Very Important.

g. Weekend Witness with Faculty

Cross-tabulation of The Weekend Witness with Faculty reported significantly more than expected ($p=0.016$) Engineering and the Built Environment respondents

selected Important and more than expected ($p=0.016$) Health Sciences selected Very Important.

5.3.6.3 Cross-tabulation of Age with Newspapers

An analysis of the variable of age groups were cross-tabulated with the nine various newspapers to determine those newspapers which influenced the respondents' choice to study at DUT.

Figure 5.12: Results charted for cross-tabulation of age groups with Isolezwe newspaper

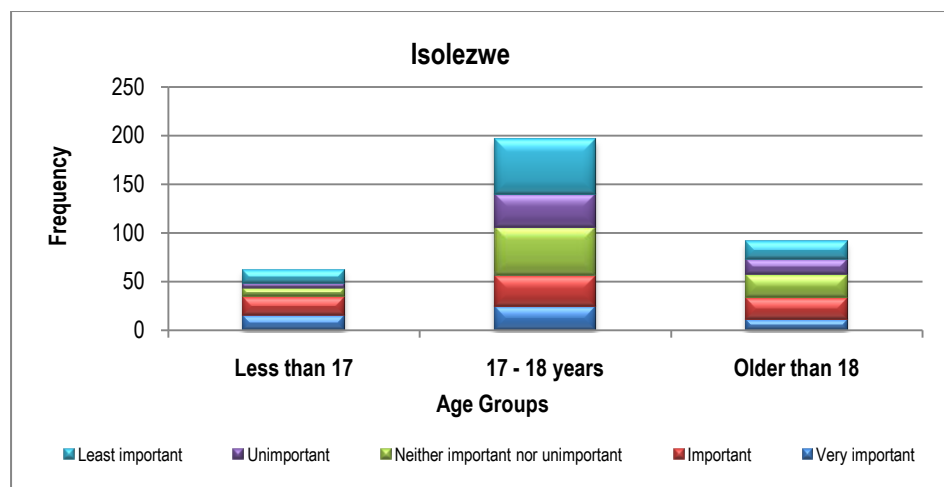
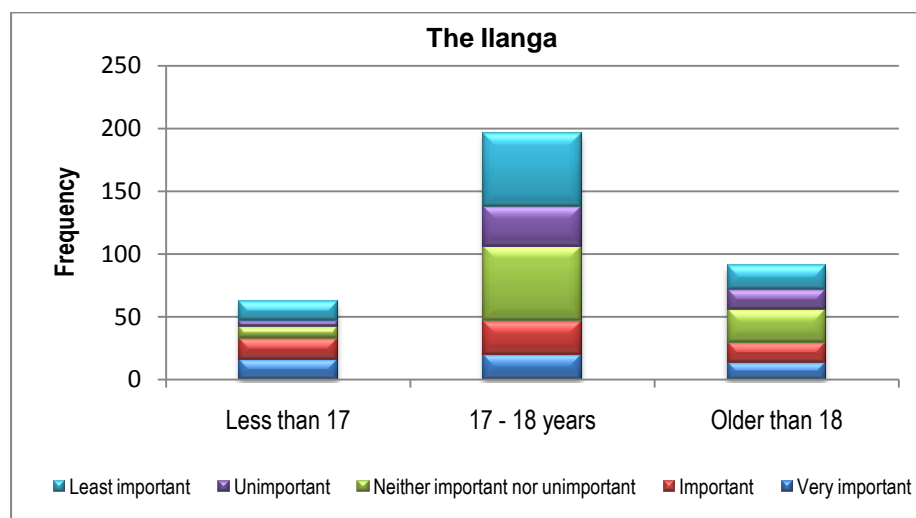


Figure 5.12 above depicts the Age Groups as categorised into three groups where the less than 17 age group responded significantly more ($p=.020$) than expected that Isolezwe was rated a Very Important or Important influence.

Figure 5.13: Results charted for cross-tabulation of age groups with the Ilanga newspaper



In Table 5.13 further results in this analysis reported that the same age group significantly more ($p=.005$) than expected responded that The Ilanga was a Very

Important or Important influence, whilst a fewer than expected of the 17-18 age group rated it as a Very Important influence.

Lastly, in cross-tabulation analysis the less than 17 age group significantly more ($p=.030$) than expected rated Natal Witness as a Very Important or Important influence, and more than expected of the over 18 age group rated it Neither Important nor Unimportant.

5.3.7 Demographic Variable of Age Group Cross-Tabulated with Career Information/Guidance Publications

There were no significant relationships in this analysis and therefore this cross-tabulation is not discussed further.

5.3.8 Radio stations Used in DUT Marketing Communications

In the analysis of the six radio stations used in the DUT marketing communication strategy cross-tabulated with demographic variables produced significant results with Metro FM, Lotus FM, Ukhozi FM and ECR. These results are shown in Table 5.20.

Table 5.20: Cross-tabulation of radio stations with race, language, income and faculty

Question 7	Demographic variable	p-value	Interpretation	
			Significantly more than expected...	...selected the response option...
Metro FM	Race	<.0005	Black	Important
			White/Coloured/Indian	Least important
	Language	<.0005	Black languages	Important
			English/Afrikaans	Least important
Lotus FM	Faculty	0.012	EBE	Very Important/Important
			HS	Neutral
	Race	<.0005	White/Coloured/Indian	Very Important/Important
	Language	<.0005	English/Afrikaans	Very Important/Important
Ukhozi FM	Faculty	<.0005	HS/Acc	Very Important
			App Sc	Important
			A&D	Unimportant
			EBE	Least important
	Gender	0.05	Male	Least important
			Female	Unimportant
	Race	<.0005	Black	Very Important
			White/Coloured/Indian	Least important
	Income	<.0005	<R10000	Very Important
			R10001 - R20000	Neutral/Least important
			>=R20000	Unimportant
	Language	<.0005	Black languages	Very Important
			English/Afrikaans	Least important
East Coast Radio	Race	0.009	White/Coloured/Indian	Very Important
	Language	0.012	English/Afrikaans	Very Important

Key: Faculty names, Acc & Info – Accounting and Informatics, A&D – Arts and Design, App Sc – Applied Sciences, EBE – Engineering and the Built Environment, H Sc – Health Sciences and Mgt Sc – Management Sciences

The demographic variables which produced significant results with Metro FM, Lotus FM, Ukhozi FM and East Coast Radio (ECR) were language, race, income group, gender and faculty.

a. Metro FM with language and race

Metro FM cross-tabulated with race, produced significantly more responses ($p=<.0005$) than expected by Black respondents, who selected the Important option, whereas White/Coloured/Indian respondents significantly more than expected ($p=<.0005$) responded Least Important, as an indicator of the influence level of this

radio station when choosing to study at DUT. Similarly, to the same significance ($p < .0005$) both African languages found it Important and English/Afrikaans speaking respondents found it Least Important.

b. Lotus FM with faculty, race and language

The demographic variables, faculty, race and language in this analysis were found to be significant. The Faculty of Engineering and the Built Environment respondents results showed a significantly more than expected ($p = 0.012$) selection of the 'Very Important/important' options and to the same significance level Faculty of Health Sciences respondents selected 'Neutral' as their opinion of the degree this radio station influenced their choice of where to study.

c. East Coast Radio (ECR) with race and language

For the cross-tabulation results of ECR there are significant results with race and language demographic variables. Racially, White/Coloured/Indian reported significance ($p = 0.009$) in the selection of the Very Important option and English/Afrikaans speaking respondents significantly ($p = 0.012$) selected the Very Important option in indicating this radio station's DUT marketing communication broadcast's influence on their choice.

d. Ukhozi FM with faculty, gender, race, income and language

The demographic variables, faculty, gender, race, income and language in this analysis were found to be significant. In the results of faculty analysis with this radio station, five faculties reported significantly more than expected ($p < .0005$) respondents from Health Sciences and Accounting and Informatics responses were Very Important, Applied Sciences selecting Important, Arts and Design opting for Unimportant and Engineering and the Built Environment selecting the Least Important option.

In the cross-tabulation results of this radio station with gender, both genders responded more significantly than expected ($p = 0.05$) with males selecting the Least Important option and females selecting Unimportant.

The results of race with Ukhozi FM, Black respondents selected Very Important and White/Coloured/Indian respondents selected Least Important where both racial categories reporting significantly more ($p < .0005$) than expected responses to this

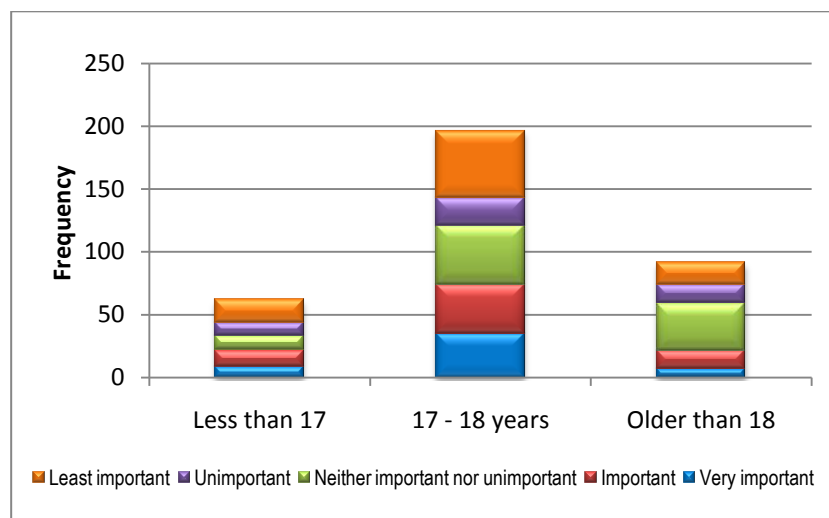
radio's influence in their decision of where to study. Equally, the African language speaking respondents found it a Very Important influence on their choice of where to study whilst the English/Afrikaans speaking respondents selected it as a Least Important influence, where the significance p-value results are identical.

Significantly more ($p < .0005$) respondents than were expected from the following income groups <R10000.00 selected Very Important, R10001.00 - R20000.00 selected Neutral or Least Important and \geq R20000.00 selected Unimportant.

5.3.8.1 Radio stations cross-tabulated with Age groups

Analysis of age and the significant influence each radio station had on the respondents, where the results are summarised in this section.

Figure 5.14: Graphic chart of cross-tabulation analysis of radio stations with age



a. Radio 5 influence on Age Groups

In Figure 5.14, the ratio of 37.8% of the respondents in the 17 to 18 age group indicated collectively (Very Important to Important) that this Age Group were influenced by the DUT slots on Radio 5, with 27% of the same Age Group indicating that they were Least influenced by Radio 5.

Analysis resulted in significantly more ($p = .021$) than expected respondents of the 17 to 18 Age Group rated Radio 5 as a Very Important influence and more than expected respondents of the over 18 Age Group rated it Neither Important nor Unimportant.

b. Umhlobo FM influence on Age Groups

Umhlobo FM recorded significantly more ($p=.023$) than expected of the less than 17 Age Group, who selected it as an Important influence, and more than expected of the over 18 Age Group rated it Neither Important nor Unimportant.

c. Lotus FM influence on age groups

In the cross-tabulation analysis of Lotus FM it was significantly more ($p=.030$) than expected of the less than 17 age group recorded an Important influence, more than expected of the 17 to 18 age group recording it Very Important and more than expected of the over 18 group selected it as Neither Important nor Unimportant.

d. Ukhozi FM influence on age groups

Finally, the influence of Ukhozi FM resulted in significantly more ($p=.001$) than expected of the less than 17 Age Group indicated that they found this radio station a Very Important influence and more than expected of the 17 to 18 Age Group chose this radio station as an Unimportant influence when establishing if this medias influence in their choice to study at DUT.

5.3.9 Internet

Cross-tabulation analysis of was carried out on Questions 8, 10 and 11, where the use of the internet was investigated. The respondents were asked if they had been on the DUT website, and whether this had influenced their decision to study at DUT. They were also asked to rate the DUT website on a 5 point scale from Excellent through Bad. Statistical results are explained followed by a discussion paragraph.

Table 5.21: Cross-tabulation of Internet with race, language, gender, income and faculty

			Interpretation	
Question 8,10& 11	Demographic variable	p-value	Significantly more than expected...	...selected the response option...
Internet use	Race	0.023	Black	No
	Language	0.024	Black languages	No
Rate DUT website	Race	0.006	Black	Excellent
			White/Coloured/Indian	Good
	Language	0.002	Black languages	Excellent
			English/Afrikaans	Good
DUT website influence on choice to study at DUT	Faculty	0.001	HS	A great deal
			EBE	Not at all
			App Sc	A fair amount
			A&D	Not much
	Gender	0.008	Male	A fair amount
			Female	A great deal
	Race	0.009	Black	A great deal
	Income	0.003	<R10000	A fair amount
			R10001 - R20000	Not much
			>=R20000	A great deal
	Language	0.008	Black languages	A great deal
Questions 8, & 11	Demographic variable	p-value	Significantly fewer than expected...	...selected the response option...
Internet use	Race	0.023	White/coloured/Indian	No
	Language	0.024	English/Afrikaans	No
Rate DUT website	Race	0.009	White/coloured/Indian	A great deal
	Language	0.008	English/Afrikaans	A great deal

Key: Faculty names, Acc & Info – Accounting & Informatics, A&D – Arts & Design, App Sc – Applied Sciences, EBE – Engineering & the Built Environment, H Sc – Health Sciences and Mgt Sc – Management Sciences

a. Internet usage influence on race groups and language groups

From results indicated in Table 5.21, Internet use cross-tabulated with race reported a significantly more than expected ($p=0.023$) of Black respondents selected the No option and with the language variable African languages reported significantly more than expected ($p=0.024$) respondents selecting the No option to their using the internet.

Conversely, significantly fewer respondents ($p=0.023$) in the White/Coloured/Indian race group selected 'no' to internet use than was expected and similarly significantly fewer ($p=0.024$) English/Afrikaans speaking respondents selected 'no' to internet usage than was expected.

b. DUT website rating by race groups and language groups

In rating DUT's website, cross-tabulated with race variable reported the same p-value to both race groups of ($p=0.006$) where Black respondents selected the

Excellent option and the White/Coloured/Indian Race Group selected the Good option.

c. DUT's website rating with language groups

Analysis of rating DUT's website with the language variable, both significant variables reported the same p-values of significance ($p=0.002$) and where African language speaking respondents selected Excellent and English/Afrikaans speaking respondents' selected Good.

d. DUT website influence on race groups

Analysis was conducted on the DUT website influence on choice to study at DUT and the race group variable, where significantly more than expected ($p=0.009$) Black respondents selected the option, A Great Deal when valuing the influence the DUT website played in their choice to study at DUT.

With the analysis of rating DUT's website cross-tabulated with race group variable the results reported significantly fewer responses ($p=0.009$) than expected from White/Coloured/Indian respondents who selected A Great Deal and with the language variable indicated significance of fewer responses ($p=0.008$) of English/Afrikaans speaking respondents selected A Great Deal than were expected.

e. DUT website influence on choice to study at DUT and language groups

Similarly, in the analysis of DUT website influence on choice to study at DUT and the language variable significantly more ($p=0.008$) than expected African language speaking respondents selected A Great Deal influencing their choice.

f. Faculty representation with DUT website influence on choice to study at DUT

In this analysis, the faculty variable indicates four faculties all demonstrating significantly more ($p=0.001$) than expected responses: Health Sciences respondents selected A Great Deal; Engineering and the Built Environment respondents' indicated that there was No Influence at All; Applied Sciences respondents' showed A Fair Amount and Arts and Design respondents selected that the website Had Not Much influence on their choice to study at DUT.

g. DUT website influence on choice to study at DUT with gender

Gender variable cross-tabulated with DUT website influence on choice to study at DUT reports the same significance of ($p=0.008$) for both genders, where the male

respondents selected A Fair Amount option and the female respondents selected A Great Deal of influence was provided by this medium on their choice to study at DUT.

h. DUT website influence on choice to study at DUT and Income groups

Significantly more than expected ($p= 0.003$) of the respondents from the following income groups; <R10000.00 selected A Fair Amount, R10001.00 - R20000.00 Not Much and \geq R20000.00, A Great Deal as their responses to how the DUT website influenced their choice to study there.

There is logic to the results in the demographic variables race and language where Black, African speaking respondents indicated their Lack of Internet Use. Similarly White/Coloured/Indian, English/Afrikaans speaking respondents indicated they rated the DUT website as Good.

The logic is defied however, where the Black, African speaking respondents indicate that they rate the DUT website as Excellent as this would appear to contradict their answer to Question 8, of No Internet Use.

Further to this, the results indicate that Black, African speaking respondents felt they were influenced A Great Deal by the DUT website in their decision to study at DUT. This too would appear to contradict the results in Question 8. This may well lead to further study being necessary.

5.3.10 Messaging services

The media indicated in Question 12; Facebook, MXit, My Space, The Grid, You Tube and Twitter influence the prospective students. The researcher was interested to establish to extent to which the respondents in this study used the identified media. The results may well influence further research and inform future DUT Marketing Communication strategy.

Table 5.22 Frequency of use of internet/cellular messaging and social network systems

Question 12	Demographic variable	p-value	Interpretation	
			Significantly more than expected...	...selected the response option...
Facebook	Faculty	0.032	Arts & Design	Every day
			Applied Sciences	A few times a year
			Health Sciences	Never
	Race	<.0005	White/coloured/Indian	Every day
	Income	0.005	<R10 000	Never
			>=R20 000	Every day
	Language	<.0005	English/Afrikaans	Every day
MXit	Race	<.0005	Black	Never
			White/coloured/Indian	Every day
	Income	0.001	<R10 000	Never
			R10 001 - R20 000	Every day
			>=R20000	A few times a month
	Language	<.0005	Black languages	Never
			English/Afrikaans	Every day
	Age	<.0005	<=20	Every day
			>20	A few times a year
	Gender	0.032	Male	A few times a year
	Income	0.012	<=R10 000	A few times a year
			>R10 000	A few times a week
My Space	Gender	0.032	Male	A few times a year
The Grid	Income	0.012	<=R10 000	A few times a year
			>R10 000	A few times a week
You Tube	Gender	0.011	Male	A few times a week/month
	Race	<.0005	White/coloured/Indian	A few times a week
	Language	<.0005	English/Afrikaans	A few times a month/year
	Income	0.008	<=R10 000	A few times a year
			>R10 000	A few times a year
Question 12	Demographic variable	p-value	Significantly fewer than expected...	...selected the response option...
Facebook	Race	<.0005	Black	Every day
	Language	<.0005	Black languages	Every day
Twitter	Age	0.015	>20	A few times a week/month

Key: Faculty names, Acc & Info – Accounting & Informatics, A&D – Arts & Design, App Sc – Applied Sciences, EBE – Engineering & the Built Environment, H Sc – Health Sciences and Mgt Sc – Management Sciences

In Table 5.22 the cross-tabulation analysis reported the respondents who used Facebook significantly more $p < .0005$ than expected were from the White/Coloured/Indian race group who indicated they used this resource Every Day. The demographic variable indicated that English/Afrikaans respondents significantly more ($p < .0005$) than expected reported their using this media Every Day.

- Facebook cross-tabulated with the Faculty variable showed a significantly more ($p = 0.032$) than expected response of respondents from the faculty of Arts and Design used this interactive network Every Day, whereas respondents' from the Faculty of Applied Sciences use this facility A Few Times a Year and the Faculty of Health Sciences respondents reported that They Never Use This Facility. Respondents' in the Income group $< R10\ 000.00$ indicated they Never used this facility whereas the income group $> R20\ 000.00$ use Facebook Every Day. These income groups showed that their usage of this interactive network both reported significantly more than expected responses ($p = 0.005$) than was expected.

Conversely, significantly fewer respondents than expected in the cross-tabulation of Facebook with race groups reported a significance of $p < .0005$, Black respondents selected every day and with language significantly more $p < .0005$ than expected African language speaking respondents selected Every Day.
- My Space cross-tabulated with Gender reported a significantly more than expected ($p = 0.032$) male respondents selected they use this facility A Few Times a Year.
- In the reported significance ($p = 0.012$) more than expected The Grid cross-tabulation with Income group $\leq R10\ 000.00$ selected A Few Times a Year and income group $> R10\ 000.00$ selected A Few Times a Week.
- You Tube cross-tabulated with Gender showed significantly more than expected ($p = 0.011$) male respondents selected A Few Times a Week/Month and with the Race variable significantly more than expected ($p < .0005$) White/Coloured/Indian selected A Few Times a Week. You Tube with Language reported significantly more $p < .0005$ than expected English/Afrikaans speaking respondents selected A Few Times a Month/Year. Finally in You Tube cross-

tabulated with Income groups, the significance $p=0.008$ for both income groups $\leq R10\,000.00$ and $>R10\,000.00$ selected A Few Times a Year.

- MXit cross-tabulated with Race reported significantly more than expected ($p<.0005$) Black respondents selected Never and White/Coloured/Indian selected Every Day to the same significance result.

MXit cross-tabulated with Income showed significantly ($p=0.001$) more than expected in all three income groups $<R10\,000.00$ selected Never, $R10\,001.00 - R20\,000.00$ selected Every Day and $\geq R20\,000.00$ selected A Few Times a Month.

MXit cross-tabulated with language showed significantly more than expected ($p<.0005$) African language speaking respondents selected Never and English/Afrikaans selected Every Day.

MXit cross-tabulated with Age reported a significantly more than expected under 20 year old respondents ($p<.0005$) age group used MXit Every Day whereas those respondents older than 20 selected A Few Times a Year.

MXit cross-tabulated with gender indicated significantly more than expected ($p=0.032$) male respondents selected A Few Times a Year. Finally MXit cross tabulated with income groups reported significantly more than expected ($p=0.012$) $\leq R10\,000.00$ selected A Few Times a Year and $>R10\,000.00$ selected A Few Times a Week. The significance value is the same for both income groups.

- Fewer than expected >20 age group respondents indicated significance ($p=0.015$) for the variable Twitter selected A Few Times a Week/Month.

5.3.11 Media access

In media access, the researcher was interested in establishing the extent to which the respondents in this study viewed the four media in Question 14, as in Table 5.23.

Table 5.23 Cross-tabulation significance of media access with demographic variables

Question 14	Demographic variable	p-value	Interpretation	
			Significantly more than expected...	...selected the response option...
Magazines	Gender	<.0005	Male	A few times a year
Television	Faculty	0.002	Accounting & Informatics	Every day
			A&D, App Sc, HS	A few times a week
			Management Sciences	A few times a month or less
Cinema	Gender	0.003	Male	Never
	Race	0.005	Black	Never
	Language	0.003	Black languages	Never
	Income	0.016	<=R10000	Never
			>R10000	A few times a month
Internet	Gender	0.036	Male	A few times a week/month
Question 14	Demographic variable	p-value	Significantly fewer than expected...	...selected the response option...
Magazines	Gender	<.0005	Females	A few times a year
Cinema	Gender	0.003	Females	Never
	Language	0.003	White/Coloured/Indian	Never
	Language	0.003	English/Afrikaans	Never

Key: Faculty names, Acc & Info – Accounting & Informatics, A&D – Arts & Design, App Sc – Applied Sciences, EBE – Engineering & the Built Environment, H Sc – Health Sciences and Mgt Sc – Management Sciences

From Table 5.23 the following summary of the analysis is drawn.

- Magazines cross-tabulated with Gender reports significantly more ($p < .0005$) than expected male respondents selected they read magazines A Few Times a Year.
- Television cross-tabulated with Faculty shows that all results in this analysis are significantly more ($p = 0.002$) than expected where Accounting and Informatics respondents' selected Every Day, Arts and Design, Applied Sciences, Health Sciences selected A Few Times a Week and Management Sciences respondents selected A Few Times a Month or Less.
- Cinema cross-tabulated with gender indicated significantly more ($p = 0.003$) than expected male respondents selected Never whereas with race groups significantly more ($p = 0.005$) than expected Black respondents selected Never and with language ($p = 0.003$) African speaking respondents' selected Never. Cinema cross-tabulated with Gross Monthly Income reflects a significantly more ($p = .016$) than expected result in the category of those with a family income of

less than R10 000.00 indicated that they Never went to the cinema, while more than expected of those from the >R10 000.00 income bracket indicated that they went to the cinema A Few Times a Month.

- Internet usage cross-tabulated with gender reported significantly more ($p=0.036$) than expected male respondents selected A Few Times a Week/Month.
- Magazines cross-tabulated with Gender reported fewer than expected ($p<.0005$) female respondents who selected A Few Times a Year.
- Cinema cross-tabulated with Gender analysis showed significantly fewer than expected ($p=0.003$) female respondents selected Never, and in the cross-tabulated analysis with Language significantly fewer ($p=0.003$) White/Coloured/Indian respondents' selected Never. The same p-value is reported for English/Afrikaans respondents who selecting Never for attending the Cinema.

5.4 Conclusion

The analysis of the data collected in this study has been explained in this chapter. In the analysis a number of different statistical methods were used to determine the descriptive and inferential results.

In the first section the descriptive nature of the analysis was profiled. Chi-squares goodness-of-fit testing was conducted on all questions in order to establish significance, where the p-value 0.05 level of significance was used.

The second section was intended to establish the respondents' awareness of DUT's marketing communication strategies and whether they felt these influenced their choice to enrol at DUT. The demographic variables provided by respondents allowed the researcher to investigate if the factors influencing students' choice of DUT are related to Race, Age, Language and Income. The Chi-squared test of independence was used to these questions to establish their significance.

In Chapter five the discussion of results obtained and the implications thereof will be considered.

CHAPTER 6

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This study set out to assess DUT's marketing communication strategies and their effectiveness in attracting students to enrol at the institution. The objectives were:

- to establish which key criteria influenced the choice of first time, first year students to study at DUT;
- to establish which forms of marketing communications used by DUT informed the respondents' choice;
- to establish the effectiveness of different marketing media in influencing respondents' choice to enrol at DUT;
- to identify the extent to which the influencing factors differ according to demographic factors.

In this chapter the conclusions from the analysis will be presented with the implications thereof. The extent to which the objectives of this study are met will be detailed herein and areas which support, or differ, from studies referenced in the literature review of Chapters 2 and 3 will be discussed.

6.2 CONCLUSIONS ABOUT RESEARCH QUESTIONS

In this section the conclusions of the study are addressed in accordance with the objectives.

6.2.1 Key Criteria Influencing Choice

In the first objective, first time, first year students indicated which criteria influenced their choice of where to study. (Questionnaire Appendix A, Questions 2 and 4).

Fill (2002: 80) suggests that cognitive theory provides an insight into the manner in which prospective students, in this study or prospective buyers use a variety of influences to determine choice. The current study modified Fill's criteria of influence and integrated those of Gray, Fam and Llanes (2003: 115), to determine the respondents' perception of the media used in DUT's marketing communications. Influential factors such as financial implications, aspects pertinent to the wider

environment, such as programme offerings, standard of education, location and prospects of employment upon successful completion of their studies were itemised.

Although Gray, Fam and Llanes (2003) in their study did not rank their criteria of influence, as they deemed all communication strategy criteria as important when influencing choice.

Helgesen, (2006: 245) held that positively related performance and brand reputation strongly influence choice, as corroborated in this study. The respondents' need for a recognised quality or standard of education as paramount in their influence of which Higher Education Institution at which to study. This supports Helgesen's view of an institution which is recognised (reputed) as providing the high standard of education puts that brand on the 'map of choice' for prospective students.

Vrontis, Thrassou, and Melanthiou, (2007: 986) identified the ability of HEI's to create value through building positive brand image as a 'transferable' commodity to the student, as is implied by the importance placed on receiving quality education which transfers as being employable upon successful completion of studies. The majority of respondents (98.6%) of this study indicated that Standard of Education was their 'most important' influencing factor as shown in Table 5.2.

Although studies by Gatfield, Barker and Graham (1999: 73) and Hesketh and Knight (1999: 115), revealed that the content of print communications provided by HEIs to applicants was limited, this study shows that prospective students still prefer to acquire their career guidance information via print media, and thereafter are more directly influenced by word of mouth interactions.

These key influencing criteria in their choice to study at DUT are indicated in Table 5.3 (print media) and Figure 5.5 (word of mouth) respectively. The respondents' opinion about the DUT is influenced by the word of mouth interactions with friends, family members, teachers and counsellors and DUT staff who visit the schools of prospective student.

6.2.2 Marketing Communication Initiatives Influences of Student Choices

This objective questioned which forms of media led the respondents to choose DUT as the HEI at which to study.

From the analysis in this study it can be seen that where traditional use of print media was used, such as Career Guidance Magazines 87.7% of the study group indicated that the CAO Booklet was the Most Important influence in this category of media identified.

In newspaper campaigns, the most widely read, identified in order of importance were; The Daily News, The Sunday Times, The Sunday Tribune, The Mercury and Isolezwe which influenced the student's decision to study at DUT, thus (supporting the respondents' selection of print media as the most helpful source of assistance (Table 5.3).

However, Figure 5.5 shows the only print media selected by 25.4% of respondents' were posters marketing DUT that were displayed at schools. This media provides a resulting influence stronger than nine other marketing criteria indicated in Question 2 of this study.

An initiative which can be collectively defined as word of mouth is identified as, the visits by lecturers and Student Liaison staff to schools, Open Day's at a particular school, the respondents' visits to DUT for Open Week, and the friends or relatives providing information which convinced them to study at DUT. These criteria are shown in Figure 5.5 as Word of Mouth where 59.4% responded positively that this criterion influenced their choice to study at DUT. For the Open Day at School criterion 30.6% of the respondents were influenced to study at DUT, and for the Open Week criterion 21.4% of the respondents indicated that this influenced them to study at DUT.

6.2.3 The Most Effective Media

The variety of media which were provided as examples of the marketing communication strategy were Career Guidance Magazines, Newspaper Advertisements informing prospective students of the programmes offered at DUT,

Radio stations broadcasting DUT programme information and the Internet provision of career information directly from the DUT website.

The study identified that the most effective career guidance magazine was the Central Applications Office Booklet, as 66.7% of the respondents indicated that this was their most important source of career information as depicted in Figure 5.3.

The respondents identified that the most important newspaper influences, were The Daily News and The Sunday Times as illustrated in Table 5.5. This result is provided by 68.6% African speaking respondents who form 72.8% of the study-group. Their use of these newspapers as a career guidance and information of programmes available at DUT provides interesting insight into the use of newspaper media. Prospective African language speakers do not necessarily use African language newspapers to source their Career Information and Guidance.

The trend to maintain the use of traditional methods of marketing communication via print media is supported by the results of this study. This suggests that although a new strategy is sought for communicating to prospective students effectively, historically used methods such as various print media for informing these targeted students should be reviewed carefully and a new the balance of media sought to effectively capture the awareness of the prospective student as suggested by McGrath (2002: 3). He states that in higher education, evolution has seen a move away from the more ritualistic manner of communicating within and outside the Higher Education Institution towards a more aggressive transmission model which uses marketing communications tools that include advertising (both in traditional and electronic media), direct marketing, and public relations.

Although print media was indicated by the respondents as being the most helpful source of media, results in the radio broadcast and internet and website media warrant further discussion.

In Table 5.6, both Ukozi FM (39.7%) and East Coast Radio (31.2%) reported that these two radio stations provide a very important influence to prospective students when choosing to study at DUT. The study does not give the racial listenership for

these radio stations; however it should be noted that Whites, Coloureds and Indians form 27.2% of the study group indicating that this medium should be analysed in more detail.

The results of this study in the area of the internet and website media identify areas of interest which will determine the fine tuning of the marketing communication strategy at DUT. In responding to questions related to Internet usage and the DUT website, 96% of the study group indicated that they use the internet, however only 89.7% of the study group has been on the DUT Website. In Table 5.7 the DUT website was rated by 24.3% of the respondents as excellent and by 40.3% as good with the weighted ratio of these being 82.35% which appears to signify that the website is viewed very favourably.

In Chapter 5, Section 5.3.10 show results of how messaging services influenced the study group were highlighted. Of the seven options, only Facebook and MXit show any relevance to the study group. Facebook shows a 51% usage by respondents and MXit shows 58% usage.

Although these technologically developed messaging services are only now being utilised as part of the marketing communication initiatives in business practice, Higher Education Institutions are realising the need to utilise these media to capture the awareness of the prospective student target audience. Since universities are exposed to consumer choice via prospective students' utilisation of a more mobile and better informed judgement about Higher Education Institutions, use of these media could ensure that a competitive edge is gained by DUT (Briggs, 2006: 707). Mortimer (1997: 225) believes that universities could achieve this competitive advantage if they became aware of prospective students' needs and provided this information both in traditional print communications as well as other communication media by establishing market orientation and customer focus.

The results shown in Table 5.10 indicate that television (76.7%) and cellular phones (95.1%) are used daily by most of the respondents. The table also shows that 309 respondents collectively use the Internet either everyday or at least a few times a week. DUT currently does not utilise its marketing strategy to communicate via

television due to financial constraints limiting this programme of action, however 'sms' communication is being utilised to communicate with prospective and current students. The initiative of advertising where the interested prospective student sees the printed item and uses their cellular phone to 'sms' DUT their request code (which tally's with the programme information which they are interested in receiving) so that this particular programme information may be communicated to them.

6.2.4 Influencing Factors for Various Demographic Variables

In the study the demographic variables of age group, gross household monthly income, home language, race group and gender were requested of the study group. Using these demographic variables the following conclusions were attained.

Standard of education is considered Important by the male respondents in this study and was ranked as an Important influence when deciding where to study, as indicated in Table 5.11. Further analysis shows that 69.8% of the respondents were Black male respondents' and 30.2% were White, Coloured and Indian Male respondents.

Fees or cost of education (Price reference in Question 4), would appear to be a definite influencing factor for the Black, African speaking respondents whose household monthly gross income is less than R10 000.00 as illustrated in Table 5.11. This opinion is supported by their selecting Very Important in response to questions relating to for bursary availability.

It appears that 72.5% of Black respondents' come from homes where the gross monthly income is less than R10 000.00 which leads to a logical conclusion that the economic status of a large number of respondents in this study group would require financial assistance via the National Student Financial Aid Scheme, commercial student loans or company sponsorship.

6.3 CONCLUSIONS ABOUT THE RESEARCH PROBLEM

The research problem was identified as a need for a better understanding of the influence and effectiveness of marketing communication and brand strategies on student decisions regarding their choice of HEI at which to study.

The study findings indicate that prospective students are using traditional print media, word of mouth and radio promotional activities to inform their choice of which higher education institution to enrol at. This was supported by Binsardi and Ekwulugo (2003: 325) who claim that the marketing mix (promotional activities) must be geared to the customer who is becoming increasingly critical and analytical when choosing their educational institution.

In the results from this study, the Word of Mouth influence which the respondents indicated was very significant, was not profiled to determine the percentage the parents played in forming the basis of this choice, recognising that many parents of prospective students did not have Higher Education opportunities. The researcher believes that further study may be prudent here. In a higher education marketing study conducted for Rhodes University, it was determined that 82% of the respondents from the study made the choice themselves with only 10% of their respondents being influenced by their parents (Pillay 2010: 73).

Due to the fact that 67 respondents or 19.1% of the study group indicated that Gagasi FM was a radio station which they listened to, this radio station should be considered as one of the radio stations DUT should use to broadcast career and programme information.

There is a need for a better understanding of the influence and effectiveness of marketing communication and brand strategies on student decisions regarding their choice of place to study. A focussed marketing approach would ensure that Higher Education Institutions are sustainable and grow in an ever competitive market. As the prospective student, the purchaser of tertiary education becomes better informed, so the role of marketing becomes imperative to steering the prospective toward a choice decision made for your Higher Education Institution (Foskett and Hemsley-Brown, 2001: 32).

Due to the results of this study, it might be argued that brand-based marketing communication is identified as a positive influence upon the respondents choice, but this fact does not reinforce the concept that prospective students' perceptions are or always will be influenced positively thus ensuring DUT's market share.

Effectively informed marketing communications strategies would not only influence the decision-making process of the prospective students, but may well positively influence the choices made. This suggests the implementation of informed, focussed marketing strategies, through reliable marketing intelligence would allow DUT a prediction of prospective student choice patterns.

Furthermore, the response from this study group to the question about whether they would refer the DUT to friends and or family members indicated that 94.9% of the respondents would recommend the DUT to their friends and family. This suggests that they have developed a brand loyalty towards DUT and thus does not corroborate Ehrenberg's (1972) ideas of repeat buying, as this only speaks to satisfaction of this study group and indicates their experience of DUT.

6.4 IMPLICATIONS FOR THEORY

The implications of this study for marketing theory at the DUT, suggest that although the strategy addresses the prospective students' need to attain information at the right time in their choice cycle fairly well, the spread of media used is not necessarily addressing the requirements of the entire target population and would therefore require refinement.

The main objective of the DUT Marketing strategy strives to project and improve the profile and image of a University of Technology in the form of advertising in newspapers, magazines, national career publications and guides as well as radio, television and cinema advertising. Further media employed are strategically positioned billboards, banner signage and street pole advertising which are placed in specifically chosen locations both in Durban and Pietermaritzburg. Two major airports show the DUT banners on a rotating electronic banner (DUT 2008).

The executive deans and student liaison staff have employed initiatives promoting branded corporate items which are distributed to those schools known, traditionally, to be feeder schools for prospective students to DUT. This practice is also maintained at careers exhibitions. Marketing initiatives are implemented annually in accordance with the annual budget allocation which normally restricted and does not

seek to focus on marketing specific programme offerings or for targeting specialised groups of learners.

Ward (2010:1) defines segmentation as the requirement to determine the various subgroups. The DUT should determine which of these to target, to project their marketing communication initiatives. In light of this fact, a strategy is required which should include the results of this study, such as the listenership of Gagasi FM, the frequency television and internet usage as well as the wide number of prospective students who use cellular phones.

When Briggs (2006: 707) suggests that universities are currently exposed to consumer choice she draws attention to the fact that prospective students are becoming well informed, more mobile and are in a position to make more informed judgements about where to study. This would be of particular interest to marketing practitioners within the Higher Education sector.

Factors which marketing communications practitioners must take into account are preferred sources of media and information needs, as well as the subgroups within their target markets, in order to determine an integrated marketing communication plan. Mortimer (1997: 225) cites that competitive advantage may be attained by universities becoming aware of the prospective students' needs. He recommends that marketing communication practitioners provide the information required by these prospective students in traditional print forms as well as using other communication media thus establishing market orientation and customer focus.

6.5 IMPLICATIONS FOR POLICY AND PRACTICE

In this section, the study indicates traditional communication methods as well as the developing changes in marketing strategy at DUT which may form a change in practice when recruiting prospective students.

6.5.1 Traditional Means of Communication

The traditional means of communication were covered in the questions about career guidance magazines, newspapers and radio stations marketing programme offerings of the DUT.

Results indicate that the CAO Handbook, the Guide to SA Universities and Technikons and the A-Z of Careers, were the most influential magazines. The Daily News, The Sunday Times, The Sunday Tribune, The Mercury and Isolezwe were the most influential newspapers. These media supported the finding that the print media was an important source of information for HEI choice and therefore, the implication would be for DUT to continue using these channels.

Radio stations which are traditionally used are Ukozi FM and East Coast Radio which have been indicated as the most influential radio stations in this study. With further indications by 19.1% of respondents that Gagasi FM was a radio station which they listened to. The fact that Ukozi FM and East Coast Radio are considered influential by respondents would imply that these are radio stations which should be kept within the DUT marketing communication mix. The indication that Gagasi FM may be of importance, suggests that it may be necessary to add it to the mix. However, as this is not a proven outcome, it still requires further research and therefore it is not implied that it should simply be added to the marketing communication strategy.

6.5.2 Word of Mouth

Traditionally, word of mouth advertising has not been given a key value in the DUT marketing communication strategy. The Student Recruitment Department is assigned the responsibility to inform prospective students at the schools they visit and in the career weeks and exhibitions in which they participate.

More recently, the Executive Deans of some of the Faculties have initiated visits to certain schools which they have targeted. Where respondents were asked who influenced them to study at DUT, 5% indicated that DUT staff had assisted their choice whereas 62% indicated that a family member had influenced their choice. This implies that the above mentioned word of mouth presentations are not yet as effective as they may be in influencing the target audience in enrolling at DUT. Although 59.4% of respondents indicated that they were influenced by word of mouth communications this result cannot be corroborated by the results from the later variables in this study and as such implies that the understanding of word of mouth may need to be defined in future research.

6.5.3 New Territory in the Existing Strategy

It is noted from Chapter 4 that 19.2% of the respondents indicated their other listenership as Gagasi FM. Due to the fact that this response was provided under the 'other' category and so did not form part of the marketing communication strategy utilised to brief this study these results would require further analysis.

However, this provides an indication for future marketing initiatives to consider incorporating this radio station within the current broadcast channels in order to ensure DUT communicates with their target audience of prospective students.

The implication of the outcomes such as usage of cellular phones, television and the internet suggests that DUT should investigate the extent to which their prospective student audience has access to these media. On the basis of the outcome of this research, DUT should then apply adaptations to the marketing strategy to include influencing prospective students to enrol at DUT via these media.

6.5.4 Website and Print Media

Results of this study established the respondents use of DUT's website (86% responded that they used the DUT website) and the 190 respondents that indicated print media was the favoured form of receiving career guidance information would imply that the DUT perform a more detailed study of prospective student use of the internet and messaging services. This information would steer changes to the marketing communication strategy.

6.6 LIMITATIONS

This section identifies those areas of issue which a future researcher may be able to correct and, thereby, more effectively attain the objectives at hand.

6.6.1 Infancy Stages of Electronic Questionnaire Usage at DUT

The first limitation experienced with the electronic questionnaire was that proper research facilities to run electronic surveys were not available, i.e. where the submission of the completed questionnaires may be sent directly to the researcher electronically.

Upon establishing these limitations the researcher arranged for a number of laboratory venues to be utilised at specific times and arranged the help of assistants to identify first year students in the population of these laboratories and invite them to complete the electronic questionnaire. Each questionnaire was then checked for completeness and accuracy by the researcher prior to being saved onto an external hard drive. This facilitated both an accuracy of completed questionnaires as well as circumventing the Information Technology Support Services policy issue of emailing XLM files.

6.6.2 Questionnaire Development and testing

In the initial pre-run of the questionnaire the respondents were able to advise the researcher of areas of concern. The questionnaire was then revised as a result of the feedback from these respondents.

The data collection process allowed the researcher to check each questionnaire with the respondent and was therefore able to assist any student who had concerns or misunderstandings. This ensured the questions were clearly understood and questionnaire completed accurately.

During each session the researcher explained the purpose of the study and invited the respondents to ask questions if they had any concerns. This allowed respondents to get clarity on those questions which were unclear.

By selecting the laboratories which were available on most campuses, the researcher attempted to make sure that a wider and more representative range of respondents from each of the faculties at DUT were questioned.

An element of the questionnaire which should be omitted if this study is re-run is that of trying to determine if the category of school may determine the sub-group into which a prospective student may fall.

6.6.3 Representative of Faculty Proportion

In this study, the faculty representation has respondents from all faculties with the highest representation from Accounting and Informatics and Management Sciences

and the lowest representation from Applied Sciences. The study may well have produced different results had the population been more evenly representative of the faculties. The fact that it was conducted in faculty and library laboratories led to certain faculties being less represented.

Dedicated post-graduate laboratories should be available for the processing of electronic questionnaires. This would facilitate a determined number of first year respondents being given a specific time slot in which to complete the electronic questionnaire. The nature of this more specific, scheduled process would determine a proportionate representation of each faculty.

6.7 RECOMMENDATIONS FOR FURTHER RESEARCH

The nature of this study, the strategic marketing communication initiatives of the DUT, the wider range of information channels and the larger scope of competitors, all pre-determine constant revisiting of the research.

Budgetary limitations force DUT marketing practitioners to refine their communication initiatives in order that they achieve the most effective dissemination of the brand message. What this means is that prospective students would be subjected to a different range of communication initiatives, all requiring effectiveness testing on the target audience.

A more detailed study of the use of the internet and messaging services would provide information for further changes in the current marketing communications strategy. Differing communication channels, now available to prospective students owning cellular phones, such as MXit, Facebook and Twitter, necessitate research into the utilisation of these media by the target audience. This would include subgroups identified within DUT's prospective students. Greater implementation of low cost, high yield marketing projects such as Facebook (55% visit > weekly) and MXit (57% visit > weekly) and less emphasis of high cost /low yield campaigns such as Cinema advertising(13% view more than weekly). Facebook and MXit media are not costly campaigns in setup or maintain.

In conclusion, the researcher suggests there are a number of areas which require further investigation and more detailed research. As a result of DUT's limited

marketing communication budget, it is imperative the marketing strategy be refined. This will best promote DUT by making prospective students aware of the brand and programme offerings available, using appropriate media. Marketing communication initiatives must capture the awareness of prospective students to coincide with strategic recruitment deadlines within the academic year.

The results of the study will be useful for DUT and if management could implement the recommendations, their marketing strategy could be more focused, leading to higher student numbers.

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Appendix A: Questionnaire



QUESTIONNAIRE

My name is Portia Redmond from Durban University of Technology and I am conducting research for my Master's degree in Technology: Marketing. The title of my research project is "The influence of marketing communications on students' decisions to enrol at a specific University of Technology." In order to collect representative data, I would like you to complete the following questionnaire.

The data provided will be treated confidentially and your co-operation is highly appreciated. This information will remain anonymous and your identification is not recorded within the study.

Please be advised that **upon return of a successfully completed questionnaire** your response will be entered into a lucky draw where prizes will be won - the draw takes place in November 2009. Prize winners will be notified via email. The completed questionnaire must be submitted by clicking on the "Submit by Email" button at the top right of the first page or the bottom right of last page.

1a. Was the DUT your first choice of tertiary institution at which to study? ☐ Yes ☐ No

1b. How old were you when you decided to study at DUT?

2. Which, if any, of the following DUT marketing communication initiatives were directly responsible for you deciding to study at DUT? (You may select more than one option))

- ☐ Billboards
- ☐ Street Pole advertising
- ☐ Bus advertisements
- ☐ Radio
- ☐ Cinema
- ☐ Newspaper - please specify:
- ☐ Magazines - please specify:
- ☐ Other - please specify:

- ☐ Television
- ☐ Posters at school
- ☐ Open day at school
- ☐ Open week at DUT
- ☐ Word of mouth

3. Identify the most helpful source of assistance when choosing a tertiary institution at which to study? (Indicate source)

☐ Print media ☐ Electronic Media ☐ Personal interaction

4. How important were each of the following criteria in influencing you on where you wished to study?

		Very important	Important	Neither important nor unimportant	Unimportant	Least Important
4.1	Location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.2	Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.3	Standard of Education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.4	Bursary availability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.5	Work integrated Learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.6	Courses offered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.7	Company sponsorship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.8	Friend/Relative Studied at DUT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.9	Likely employment once graduated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. How much influence did the following publications have on your choice to study at DUT? (Indicate all influences)

		Very important	Important	Neither important nor unimportant	Unimportant	Least Important
5.1	A - Z of Careers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.2	Careers Unlimited for Learners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.3	Careers Beyond 2000	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.4	SA Study Guides	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.5	South African Career Guide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.6	Study SA (IEASA)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.7	Central Applications Office Booklet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.8	Guide to SA Universities and Technichons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.9	Other specify: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Which may have influenced your decision to study at DUT? (Indicate all influences)

		Very important	Important	Neither important nor unimportant	Unimportant	Least Important
6.1	Daily News	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.2	Isolezwe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.3	Ilanga	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.4	Mercury	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.5	Natal Witness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.6	Sunday Tribune	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.7	Sunday Times	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.8	Saturday Independent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.9	Weekend Witness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.10	Other specify: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Which radio station may have influenced your decision to study at DUT? (Indicate all influences)

		Very important	Important	Neither important nor unimportant	Unimportant	Least Important
7.1	Metro FM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.2	Umhlobo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.3	Lotus FM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.4	Ukhozi FM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.5	East Coast Radio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.6	5 FM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.7	Other specify: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8.	Do you use the Internet?	<input type="radio"/> Yes	<input type="radio"/> No				
9.	Have you been on the DUT Website?	<input type="radio"/> Yes	<input type="radio"/> No				
10.	If Yes to Q9, how would you rate this Website?	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Average	<input type="radio"/> Fair	<input type="radio"/> Bad	
11.	How did the DUT website influence your decision to study at DUT?	<input type="radio"/> A great deal	<input type="radio"/> A fair amount	<input type="radio"/> A little	<input type="radio"/> Not Much	<input type="radio"/> Not at all	
12.	Indicate how frequently you visit/use the following websites / Instant Messaging Services:						
		Every day	A few times a week	A few times a month	A few times a year	Never	
12.1	Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
12.2	Mxit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
12.3	My Space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
12.4	The Grid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
12.5	Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
12.6	Windows Live Spaces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
12.7	YouTube	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
13.	Would you recommend DUT to Family and/or Friends?	<input type="radio"/> Yes	<input type="radio"/> No				
If No, Please State Why: <input type="text"/>							
14a.	Do you have access to a variety of Media?	<input type="radio"/> Yes	<input type="radio"/> No				
14b.	Indicate how frequently you use/view the following media:						
		Every day	A few times a week	A few times a month	A few times a year	Never	
14.1	Newspapers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
14.2	Magazines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
14.3	Television	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
14.4	Cinema	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
14.5	Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
14.6	Cellular phones	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
PERSONAL DETAILS - please complete all items below							
In which faculty are you registered? <input type="radio"/> Acc & Inform <input type="radio"/> Arts & Desgn <input type="radio"/> Applied Sc <input type="radio"/> EBE <input type="radio"/> Health Sc <input type="radio"/> Mgt Sceinces							
Home Language		<input type="radio"/> Zulu	<input type="radio"/> Xhosa	<input type="radio"/> Sotho	<input type="radio"/> English	<input type="radio"/> Afrikaans	<input type="radio"/> Other <input type="text"/>
Gender		<input type="radio"/> Male	<input type="radio"/> Female				
Age Group		<input type="radio"/> 17 - 20	<input type="radio"/> 21 - 24	<input type="radio"/> 25 - 28	<input type="radio"/> Older than 28		
Race		<input type="radio"/> Black	<input type="radio"/> Coloured	<input type="radio"/> Indian	<input type="radio"/> White	<input type="radio"/> Other	<input type="text"/>
Which School did You Attend?		<input type="text"/>					
Where is your family home? (Name of Town/City).		<input type="text"/>					
How old were you when you decided to undertake tertiary study?		<input type="text"/>					
Which of the following people most influenced you to study at DUT?		<input type="radio"/> Family member	<input type="radio"/> Friend	<input type="radio"/> Teacher / Counsellor	<input type="radio"/> DUT Staff		
Did your family income influence your decision to study at DUT?		<input type="radio"/> Yes	<input type="radio"/> No				
My household's total gross monthly income before taxes and other deductions is appoximately:							
<input type="radio"/> Less then R10 000		<input type="radio"/> R10 001 - R20 000		<input type="radio"/> R 20 001 - R30 000		<input type="radio"/> Over R30 001	



LETTER OF INFORMATION AND CONSENT.

Title of Study: The influence of marketing activities on students' decisions to enrol at a specific University of Technology.

Dear participant,

I am currently undertaking a research project that aims to identify the influence of DUT marketing activities had on your decisions to enrol and study at DUT (Durban University of Technology).

Would you agree to be interviewed for the study? The interview will take approximately 15 minutes.

Participation is voluntary and you are free to withdraw from the study at any time. The information you give will only be used for research purposes only, and your identity and individual answers will be kept totally confidential. Should you wish to discuss this further please feel free to contact me or my supervisor (Professor R.B. Mason 031-373 5385).

Your assistance will be much appreciated,
Yours faithfully,

P H Redmond (Ms.)
Contact: 031-373-2520
031-764 2102

Please complete the following as confirmation of your willingness to participate in this research project:

I, Student number:
understand that I may withdraw from participating in this survey at any time without giving reasons, and voluntarily agree to participate therein by returning this email, I accordingly give my consent.

Date Email address for notification of winners.

[Submit by Email](#)

APPENDIX B – Additional Tables and Figures

Table B1: Headcount of First-time Entering Students per Race and Gender for 2009

Race	Female	Male	Total
African	2113	1888	4001
Coloured	49	55	104
Indian	387	543	930
Other	3	3	6
White	89	92	181
Unknown	462	340	802
Total	3103	2921	6024

(Provided by DUT Management Information Systems: 24/03/09)

Reliability

Reliability analysis of all variables from question 1 through 14.

Case Processing Summary

		N	%
Cases	Valid	298	85.1
	Excluded ^a	52	14.9
	Total	350	100.0

Reliability Statistics

Cronbach's	
Alpha	N of Items
.870	71

a. List wise analysis based on all variables in the procedure.

Influential Factors

Question 2

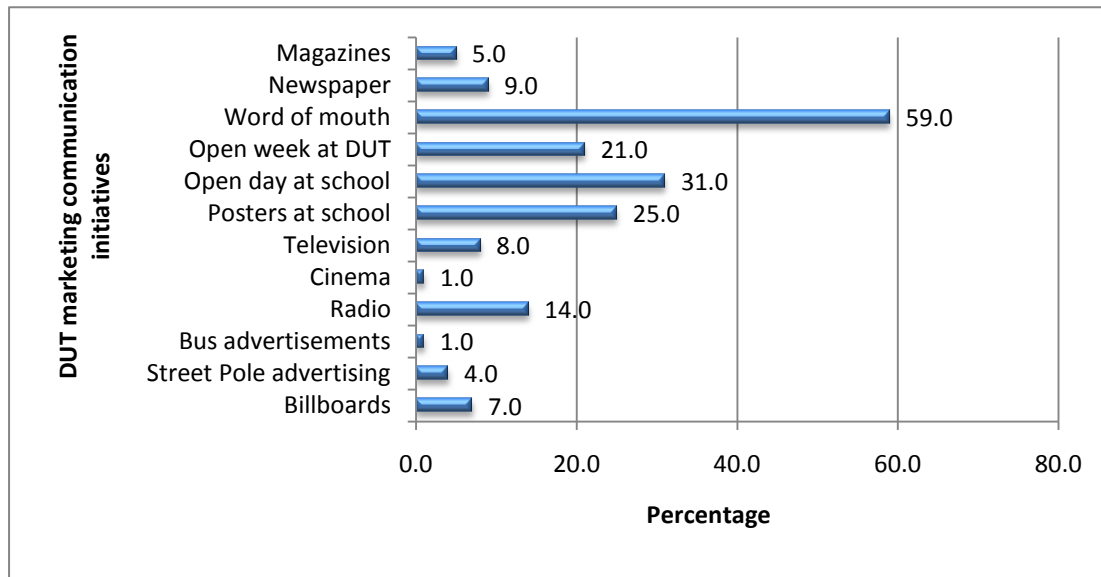


Figure B1: 2008 DUT Marketing initiatives utilised to communicate to prospective students.

Table B2: Analysis of question 4 (factors influencing choice), ranked and weighted

Ranked	5	4	3	2	1		Weighted response	Weighted ranking	Weighted Ratio
	VI	I	NINU	U	LI				
Location	217	86	22	14	11	350	1534	4	0.115
Price	188	105	39	10	8	350	1505	6	0.113
Standard of Education	292	53	2	2	1	350	1683	1	0.126
Bursary Availability	162	108	56	10	14	350	1444	7	0.108
Work Integrated Learning	174	138	28	4	6	350	1520	5	0.114
Courses offered	260	75	13	1	1	350	1642	2	0.123
Company Sponsorship	114	115	79	27	15	350	1336	8	0.100
Friend/relative studied here	55	76	79	77	63	350	1033	9	0.078
Likely employment upon graduation	265	63	14	5	3	350	1632	3	0.122
Sum of ranked	1727	819	332	150	122	3150			
	1727	819	332	150	122				

Key: VI – Very Important, I – Important, NINU – Neither important nor unimportant, U – Unimportant, LI – Least Important

Table B3: Analysis of Career Guidance Publications

	Very important	Important	Neither important nor unimportant	Unimportant	Least important
A - Z of Careers	42.6	35.1	11.4	4.0	6.9
Careers Unlimited for Learners	28.0	38.6	16.3	6.6	10.6
Careers Beyond 2000	23.1	33.1	24.6	8.3	10.9
SA Study Guides	30.6	36.0	20.0	6.0	7.4
South African Career Guide	32.9	36.0	16.3	6.6	8.0
Study SA (IEASA)	18.0	36.6	25.4	8.3	11.7
Central Applications Office Booklet	66.9	20.9	8.3	1.1	2.9
Guide to SA Universities and Technikons	44.6	32.6	10.9	4.9	7.1

Table B4: Analysis of Newspaper ratios, rankings and weighted outcomes

Ranked 5 hi			Daily News	Isolezwe	Ilanga	Mercury	Natal Witness	Sunday Tribune	Sunday Times	Saturday Independent	Weekend Witness
5	VI	Weighted	1150	991	973	1023	884	1028	1091	912	854
4	I	Ranked	1	5	6	4	8	3	2	7	9
3	NINU	Weighted Ratio	0.1291	0.1113	0.1093	0.1149	0.0993	0.1154	0.1225	0.1024	0.0959
2	U	Percentage	12.9%	11.1%	10.9%	11.5%	9.9%	11.5%	12.3%	10.2%	9.6%
1	LI										

Key: VI – Very Important, I – Important, NINU – Neither important nor unimportant, U – Unimportant, LI – Least Important

Table B5: Analysis of Radio stations

	Metro	Umhlobo	Lotus	Ukozi	ECR	5FM	# Radio	%
VI	62	5	23	137	109	51	387	18%
I	69	31	31	54	79	68	332	16%
NINU	100	126	114	55	78	95	568	27%
U	39	65	64	29	25	48	270	13%
LI	80	123	117	74	58	88	540	26%

Key: VI – Very Important, I – Important, NINU – Neither important nor unimportant, U – Unimportant, LI – Least Important

Table B6: DUT website influenced choice

	Frequency
A great deal	99
A fair amount	117
A little	34
Not much	29
Not at all	71

Table B7: People who influenced choice

	%
Family member/s	62
Friend	17
Teacher/counsellor	15
DUT Staff	5

Table B8: Family Income influencing choice

	%
Yes	52
No	48

Exposure Factors

Table B9: Exposure to marketing initiatives responses yes or no

DUT Marketing Initiatives	No	Yes
	Billboards	325 25
	Street Pole Ads	337 13
	Bus Ads	346 4
	Radio	300 50
	Cinema	347 3
	Television	322 28
	Posters at school	261 89
	Open day at school	243 107
	Open week at DUT	275 75
	Word of mouth	142 208
	Newspaper	318 32
	Magazine	334 16

Question 9

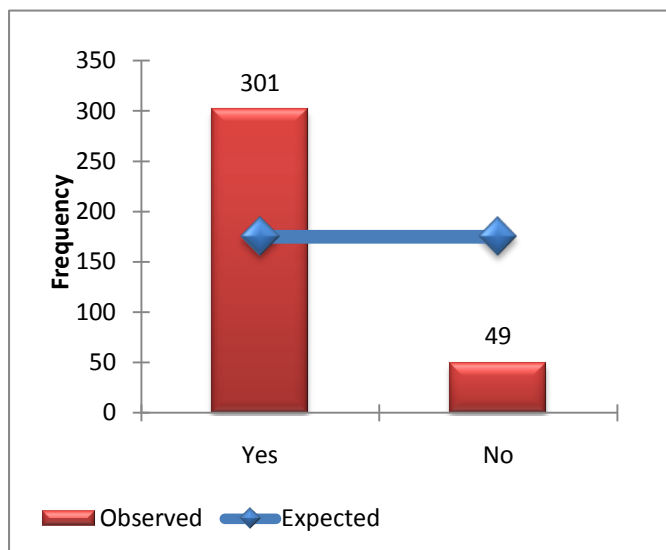


Figure B2: DUT website exposure