CHAPTER 6

RESEARCH RESULTS AND FINDINGS

6.1 INTRODUCTION

In Chapter 6, the empirical data collected during the study will be analysed and reported. The research was executed to achieve the objectives mentioned in Section 1.1 and Section 5.2. This chapter first presents the realised sample compared to the planned sample, thus the response rate for the study. It then provides a socio-demographic profile of the respondents, followed by descriptive analysis of the data. Finally, the reliability and validity of the measurement scale is addressed, whereafter the research objectives and hypothesis testing results are presented.

6.2 RESPONSE RATE

From February to April 2006, questionnaires were distributed to each of the six higher education institutions that participated in the study. The total number of students that completed valid questionnaires as part of the survey was 1241. Table 6.1 depicts the breakdown between the six higher education institutions.

Table 6.1:   Response rate

INSTITUTION	PLANNED SAMPLE	REALISED SAMPLE	RESPONSE RATE
Tshwane University of Technology	250	240	96%
University of Pretoria	250	249	99%
University of Johannesburg	250	196	78%
University of the Free State	250	188	75%
North-West University	250	227	91%
University of KwaZulu Natal	250	141	56%
TOTAL RESPONSES	**1500**	**1241**	**83%**

From Table 6.1, it is clear that the overall response rate for the study was very high (83%), as 1241 of the distributed 1500 questionnaires were completed. As explained in Section 5.9.1.1, the 15 unusable questionnaires were eliminated from the study.

Once the fieldwork had been completed, the questionnaires were edited and coded. The coded data was captured and cleared of possible coding and data capturing errors. Section 6.3 provides an overview of the descriptive analysis of the dataset by reporting the findings of all the sections of the questionnaire.

6.3 DESCRIPTIVE DATA

The tables and figures in this section report the findings of the descriptive statistics undertaken in order to report the responses of all the questions in the questionnaire (refer to Appendix A for the questionnaire). The first section provides a profile of the respondents by reporting the socio-demographic results of Section C in the questionnaire. The second section reports on the results of the importance of different university characteristics or choice factors (Section A of the questionnaire). The final section of the descriptive data highlights the results of Section B of the questionnaire, namely the usefulness of information sources in the institution selection process. All percentages in the descriptive data section are rounded to a full number with no decimals. The missing responses are presented in the figures and tables to indicate respondents who did not answer the particular question (refer to pair-wise deletion, Section 5.9.1.1).

6.3.1 SOCIO-DEMOGRAPHIC PROFILE OF STUDENTS

Section C of the questionnaire (Questions 3 to 10) was devoted to respondents' personal details. This was done to gain insight into the demographic profile of the first year Economic and Management Sciences students of higher education institutions in South Africa. These details included information on gender, age, ethnic background, university attending, home language, distance from parents' homes to university, residents of the province and average grade in Grade 12. The results are presented in the figures and tables below.

Figure 6.1 indicates the gender distribution of the respondents.

Figure 6.1: Gender of respondents

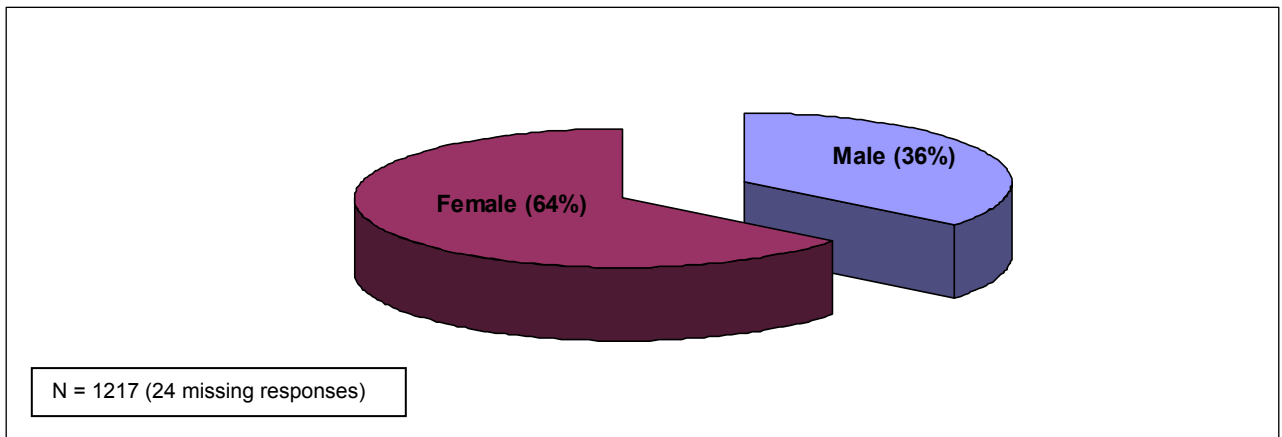Female (64%)   Male (36%)

N = 1217 (24 missing responses)

Figure 6.1 indicates that of the 1217 respondents, 36 percent (434) were male and 64 percent (783) female. More females may have participated in the study due to:

- A general higher class attendance by female students;
- Higher education institutions increasing female enrolments in an attempt to achieve gender equity; or
- More female students enrolled in the field of Economic and Management Sciences.

The age distribution of respondents, Question 4 in the questionnaire, is presented in Figure 6.2.

Figure 6.2: Age of respondents

N = 1213 (28 missing responses)
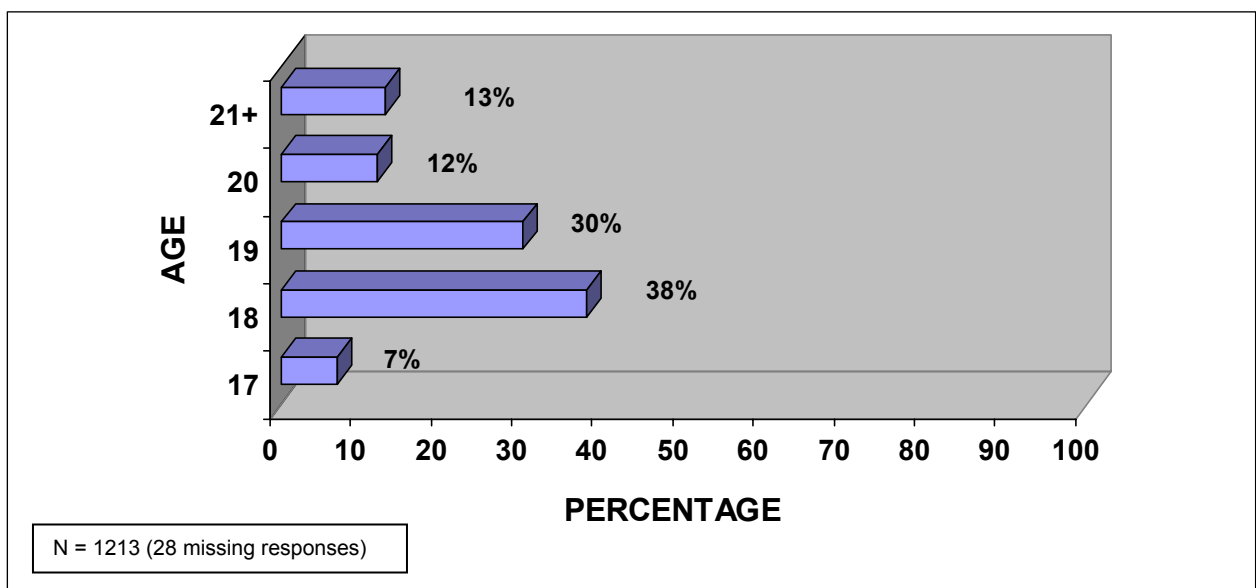
From Figure 6.2, it is evident that the majority of the respondents (75%) were younger than 20 years. The large percentage of students between the ages of 17 to 19 years correlates with a typical sample of first year students.

Figure 6.3 reflects the ethnic orientation of respondents (Question 5 in the questionnaire).
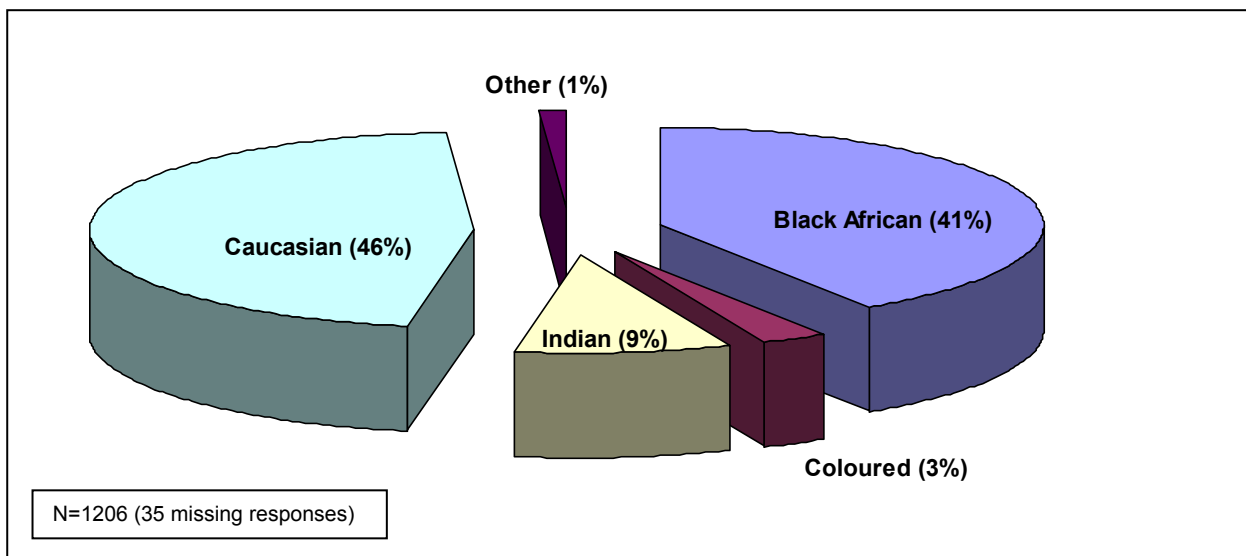
Figure 6.3:   Ethnic orientation

Figure 6.3 indicates that 46 percent (558) of the 1206 respondents were Caucasian, 41 percent (493) Black African, 9 percent (108) Indian, 3 percent (34) Coloured and 1 percent (13) of other ethnic groups. The majority of students were from the Caucasian and Black African ethnic groups. For the purpose of further statistical testing, a decision was made to collapse responses from the Indian, Coloured and other ethnic groups into one group namely "Other", as the small sample of each individual group would not allow for proper group comparisons during further statistical analyses.

The higher education institutions that respondents attended are reflected in Figure 6.4.

Figure 6.4: Higher education institution attended
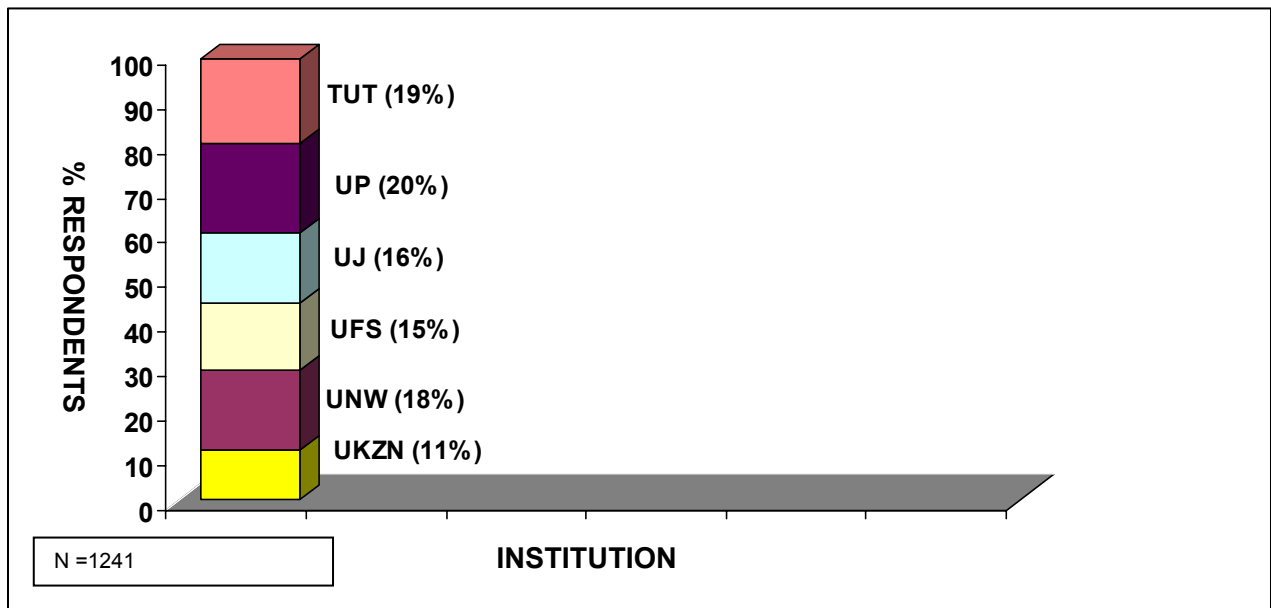
From Figure 6.4, it is evident that 21 percent (249) of the respondents were enrolled at the University of Pretoria (UP), 19 percent (227) at the Tshwane University of Technology-Witbank campus (TUT), 18 percent (227) at the University of North-West (UNW), 16 percent (196) at the University of Johannesburg (UJ), 15 percent (188) at the University of the Free State (UFS), and 11 percent (141) at the University of KwaZulu Natal (UKZN). Although each university received the same number of questionnaires (250), due to the convenience sampling method used, the sample sizes at the various institutions differ slightly.

The eleven official languages of South Africa were listed in Question 7 and respondents were asked to indicate their home language. Table 6.2 indicates the home language of respondents.

Table 6.2: Home Language

Language	Frequency	Percentage
Afrikaans	470	38
English	254	21
N-Sotho	101	8
S-Sotho	48	4
Ndebele	16	1
Tswana	47	4
Zulu	169	14
Venda	16	1
Tsonga	14	1
Swazi	36	3
Xhosa	39	3
Other	22	2
TOTAL	**1232**	**100**

* Missing responses = 9

Table 6.2 shows that Afrikaans, English and Zulu were the three most prominent home languages and that the majority (38%) of the respondents' home language was Afrikaans.

The proximity of students' permanent family home to the higher education institution that they were attending, was investigated in Question 8 and the findings are reported in Table 6.3.

Table 6.3: Proximity of permanent family home from the higher education institution

Distance	Frequency	Percentage
10 or less km	228	19
11-30 km	258	21
31-70 km	202	16
More than 70 km	543	44
TOTAL	**1231**	**100**

* Missing responses = 10

From Table 6.3, it can be concluded that the majority of respondents' permanent family homes (56%) were less than seventy kilometres from the institution they were attending. This could be due to urbanisation or the fact that students selected a higher education institution close to their home to avoid unnecessary cost of residence accommodation and travelling. For further statistical testing, two groups, "living further than 70 kilometres" and "living 70 kilometres or less from the higher education institution" were created by collapsing the "10 or less km", "11-30 km" and "31-70 km"

into one group, labelled as the "70 kilometres or less" group. These groups were formed based on the spread of data to ensure equal cell sizes for statistical comparisons.

Question 9 of the questionnaire investigated if respondents were residents in the province of the institutions they were attending. The findings are presented in Figure 6.5.

Figure 6.5:   Residents of the province in which the higher education institution is located

NO
40%
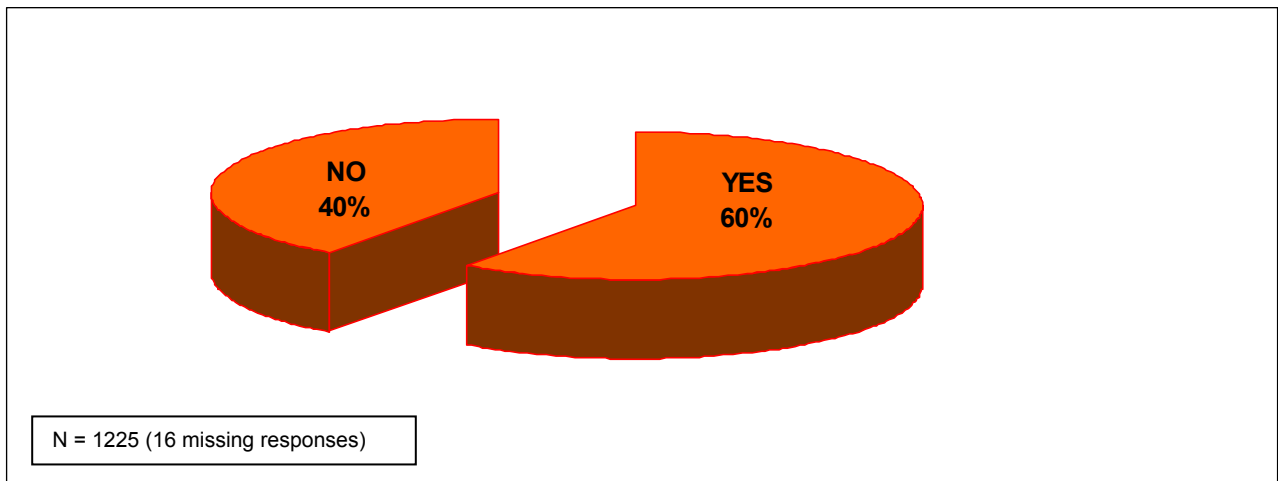
YES
60%

N = 1225 (16 missing responses)

Figure 6.5 illustrates that the majority of the respondents (60%) were residents in the province of the institution they were attending.

The last question of Section C of the questionnaire investigated the academic standing of respondents based on their final Grade 12 average, and the results are presented in Figure 6.6.

Figure 6.6: Academic ability
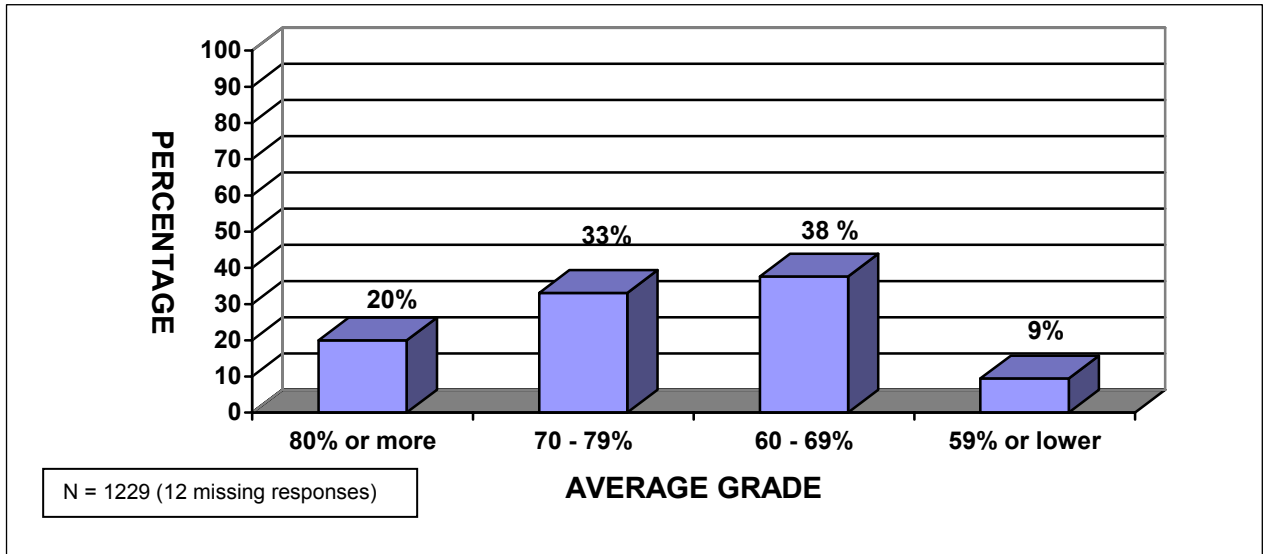
A few remarks on the above-mentioned percentages:

- More than half (53%) of the respondents had an average of 70 percent and higher, of which 20 percent of the respondents had an average grade of 80 percent or more.

- A total of 47 percent of the respondents had an average of less than 70 percent in Grade 12.

- Only 9 percent of the respondents had an average grade of less than 60 percent in their final Grade 12 exam. This low percentage may be due to the high admission requirements for most higher education institutions.

The next two sections of the descriptive analysis focus on the remaining questions in the questionnaire. Section 6.3.2 highlights the results of the importance of the 23 university characteristics/choice factors resulting from Section A (Question 1), while Section 6.3.3 presents the results of the usefulness of information sources, Section B (Question 2) of the questionnaire.

6.3.2 THE RELATIVE IMPORTANCE OF UNIVERSITY CHARACTERISTICS OR CHOICE FACTORS

Section A, Question 1 of the questionnaire dealt with the relative importance students attached to different university characteristics, mainly referred to as choice factors in this study. Respondents indicated the relative importance of each choice factor on a 5-point Likert scale ranging from not important to extremely important. For the discussion of the importance of choice factors, reference will be made to mean values and the corresponding level of importance (1 = not important at all, 2 = of little importance, 3 = moderately important, 4 = very important and 5 = extremely important). The mean, standard deviation and number of responses for each choice factor (variable) are depicted in Table 6.4.

Table 6.4: The importance of different university characteristics (choice factors)

University characteristic (choice factor)	Percentage of respondents in each cell					Number of respondents (N)	Mean	Standard Deviation
	Not important	Of little importance	Moderately important	Very important	Extremely important			
	1	2	3	4	5			
Wide choice of subjects/courses	3.89	5.84	18.33	33.17	38.77	1233	3.97	1.07
Quality of teaching	0.97	1.46	7.87	25.32	64.37	1232	4.51	0.78
Academic facilities	2.85	3.02	12.07	34.42	47.63	1226	4.21	0.97
Entry requirements	4.71	4.96	26.48	38.42	25.43	1231	3.75	1.04
Fees	6.34	8.61	25.43	27.86	31.76	1231	3.70	1.18
Location of university	7.87	9.33	22.30	26.85	33.66	1233	3.69	1.24
Sport programmes	22.39	21.82	30.21	15.07	10.50	1228	2.69	1.26
Social life on campus	16.26	15.70	25.40	20.31	22.33	1236	3.17	1.37
Attractiveness of campus	6.75	11.63	27.89	31.46	22.28	1230	3.51	1.15
Campus safety and security	2.35	2.84	11.11	26.85	56.85	1233	4.33	0.95
On campus housing	24.82	10.30	17.60	22.63	24.66	1233	3.12	1.52

Table 6.4   (continues)

University Characteristic (choice factor)	Percentage of respondents in each cell					Number of respondents (N)	Mean	Standard Deviation
	Not important	Of little importance	Moderately important	Very important	Extremely important			
	1	2	3	4	5			
Parents went there	58.35	15.57	15.32	6.19	4.56	1227	1.83	1.17
Brother/Sister went there	55.95	14.57	15.79	8.18	5.51	1235	1.93	1.24
Friends went there	38.34	17.47	22.91	13.81	7.47	1231	2.35	1.31
Academic reputation	3.75	4.56	18.57	35.59	37.54	1228	3.99	1.04
Financial assistance	12.37	7.40	16.35	26.12	37.75	1229	3.69	1.36
Language policy	6.00	3.73	16.30	27.66	46.31	1233	4.05	1.15
Links with the industry	4.47	7.80	28.05	31.95	27.72	1230	3.71	1.09
Multi-culturality	9.72	12.88	31.12	25.12	21.15	1234	3.35	1.22
International links	3.40	5.02	11.67	29.82	50.08	1234	4.18	1.05
Employment prospects	1.37	2.10	7.35	28.51	60.66	1238	4.45	0.83
Flexible study mode	3.57	5.35	16.38	34.55	40.15	1233	4.02	1.05
Image of university	3.55	4.52	16.87	34.06	41.00	1239	4.04	1.04

From Table 6.4, the following can be highlighted:

- Quality of teaching was indicated as the most important choice factor, as 64 percent of the respondents indicated it as extremely important. It has a very low standard deviation (0.78), indicating that most respondents had a high agreement on the importance of this item;

- The fact that respondent's parents attended the university, was indicated as not important at all by 58 percent of the respondents;

- Students attached the lowest importance to the fact that their parents and/or brothers/sisters attended a specific institution, as well as the fact that their friends attended the institution; and

- Responses differed the most with regard to the importance of on-campus housing/hostels, as the standard deviation is the highest (1.52) followed by social

life on campus with a standard deviation of 1.37. As standard deviation measures the spread of data about the mean, it implies that if the points are close to the mean, the standard deviation is small or low (indicating consistency or agreement) and if the points are far from the mean, the standard deviation is high or large (indicating inconsistency or differences). The high standard deviations thus suggest that there is a wider spread in the data, suggesting that there is not high agreement on these items. The high standard deviation might also be possible due to different responses from residence versus non-residence students.

The final section of the descriptive analysis presents the results of Section B, Question 2. The results pertain to the usefulness of different information sources as perceived by the respondents.

6.3.3 USEFULNESS OF INFORMATION SOURCES

Students rely on information they obtain about a higher education institution before they select an institution. Section B, Question 2 in the questionnaire, investigated the usefulness of different information sources on a 5-point Likert scale ranging from very poor to excellent. In the discussion of the usefulness of information sources, reference will be made to the mean values and corresponding usefulness (1 = very poor, 2 = poor, 3 = fair, 4 = good and 5 = excellent). Table 6.5 highlights the mean, standard deviation and number of responses for each information source.

Table 6.5:   Usefulness of information sources

Information source	Percentage of respondents in each cell						Number of respondents (N)	Mean	Standard deviation
	*Not Applicable	Very Poor	Poor	Fair	Good	Excellent			
	0	1	2	3	4	5			
School visits	21.00	8.12	7.38	18.54	26.58	18.38	1219	2.77	1.80
University publications	5.41	2.38	5.74	23.63	37.98	24.86	1219	3.61	1.28
University website	14.11	2.28	4.24	19.33	34.26	25.77	1226	3.35	1.63
Campus visits & open days	11.73	3.09	3.99	15.72	35.02	30.46	1228	3.51	1.59
Alumni	11.16	3.94	6.23	29.29	34.62	14.77	1219	3.17	1.46
Parents	13.37	5.62	7.74	30.32	28.93	14.02	1225	3.08	1.50
High school teachers	11.27	5.55	8.65	30.04	27.84	16.65	1087	3.47	1.09
Word-of-mouth	4.25	3.68	5.39	26.14	38.97	21.57	1224	3.57	1.23
Advertisements on radio	20.15	10.03	17.86	22.59	16.39	12.97	1226	2.44	1.66
Events on campus	17.32	7.35	8.74	21.00	25.00	20.59	1224	2.91	1.73
Advertise-ments in magazines/ newspaper	14.58	7.65	13.03	26.38	25.41	12.95	1228	2.79	1.57
Advertise-ments on TV	29.21	17.43	18.09	17.27	11.78	6.22	1222	1.84	1.59
Other	77.98	3.44	2.69	6.12	6.12	6.65	931	0.70	1.45

* Not applicable responses were eliminated from the data set for further analysis

The following can be deducted from Table 6.5:

- University publications were the most useful source of information with the highest mean of 3.61, followed by word-of-mouth with a mean of 3.57;

- The least useful source of information, except for the "other" sources category, was advertisements on television and radio;

- Responses for the usefulness of school visits by university staff differed the most, with a standard deviation of 1.80, suggesting that respondents had a low level of agreement on the usefulness of this information source;

- Campus visits and open days were rated by 30 percent of the respondents as excellent, followed by university websites, which was rated by 26 percent of the respondents as excellent;

- Almost 60 percent of the respondents rated the usefulness of university websites as good or excellent, suggesting that students had access to the Internet;

- A high percentage of respondents indicated school visits, and radio and television advertising as not being applicable, indicating that some of the higher education institutions are not currently making use of this medium to reach students.

- Although friends (word-of-mouth) were indicated by 60 percent of respondents as a good to excellent source of information, respondents did not necessarily choose an institution because their friends studied there (refer to Table 6.4);

- Compared to other reference groups such as friends or high school teachers, parents received the lowest percentage rating (13%) as an excellent source of information;

- High school teachers had the lowest standard deviation (1.09), indicating that most respondents had a high level of agreement on the usefulness of this information source.

- Almost 22 percent of students rated the usefulness of other sources. They did not however specify the other sources, although an opportunity was provided on the questionnaire to write down any other sources used.

The next section focuses on the reliability and validity of the measurement instrument.

6.4 RELIABILITY AND VALIDITY OF THE MEASURING INSTRUMENT

The level of measurement for the choice factors were interval data using a Likert scale. Such a measurement scale should be reliable and valid as discussed in Chapter 5. By calculating the Cronbach's alpha value of the choice factors, the researcher could determine the internal consistency reliability (Cronbach, 1951:298). Cronbach's alpha measures how well a set of items (variables) measure a single unidimensional latent construct. The widely accepted social science cut-off is that alpha should be 0.70 or higher, although some authors are as lenient as 0.60, especially for an exploratory

study (Nunnaly, 1978; Streiner and Norman, 2003). The higher the Cronbach alpha score, the more reliable the scale, thus the closer the Cronbach alpha coefficient is to one, the greater the internal consistency of the items in the scale (Gliem and Gliem, 2003:87). If the Cronbach alpha is greater than 0.70, it indicates that all the items in the scale tap into the same underlying construct. The Cronbach alpha reliability coefficient for the choice factors scale (Section A of the questionnaire) as a whole was 0.8509, indicating that the scale as a whole has acceptable internal consistency reliability and no items were deleted.

The questionnaire for the study was developed using choice factors from similar studies (refer to Section 5.7.1.2) and two widely used international instruments, the ASQ and CIRP, as a point of reference, which was then adapted to the South African context. The questionnaire used in this study was appropriate to the research problem and purpose and had been scrutinised by a panel of experts during November 2005 – February 2006, to evaluate whether the scale items in the questionnaires adequately covered the domain of choice factors. Thus, the content validity of the questionnaire was addressed.

Section 6.5 will highlight the findings of the study by showing the results of the research objectives and hypotheses testing.

6.5   RESEARCH OBJECTIVES AND HYPOTHESES RESULTS

The hypotheses flowed from the research objectives and literature review (refer to Chapter 1 and Chapter 5). The process of formulating the seven hypotheses for the study was as follows: Firstly, the null and alternative hypotheses were formulated. Next, the circumstances under which the null hypothesis would or could not be rejected was specified by choosing a level of significance. For the purpose of testing hypotheses in this study, the significance level for all hypotheses were set at a 5 percent significance level ($\alpha=0.05$). Then an appropriate statistical test was chosen. Finally, the values of the statistical test were calculated, the test results interpreted and a decision made to reject or not reject the null hypotheses.

Hypotheses 1, 2, 3 and 4 can be classified as non-directional hypotheses concerning the differences between two or more groups – these differences will be highlighted in Sections 6.5.1 to 6.5.4. The statistical test used for the afore-mentioned hypotheses was the MANOVA, which assesses the differences between groups collectively rather than individually, using univariate tests. The objective of MANOVA is to test for differences in the mean values of several dependent variables (Lattin *et al.,* 2003:389). Before a MANOVA test can be conducted, three assumptions about the nature of the data need to be addressed: the observations must be independent, the set of dependent variables must follow a multivariate normal distribution, and the variance-covariance matrices must be equal for all treatment groups (Hair *et al.,* 1998:347). Because violations of these assumptions have little impact on larger sample sizes (Tabachnick and Fidell, 2001:329; Hair *et al.*, 1998:349), as was the case in the current study with a sample size of 1241, it was decided to continue with the MANOVA, despite its violations of the assumptions.

The Wilks' lambda was the test statistic used to assess the overall significance of the MANOVA, as the Wilks' lambda is one of the tests that is most immune to violations of the assumptions underlying MANOVA without compromising on power (Hair *et al.*, 1988:35). The Wilks' lambda value indicates a significant difference ($p<0.05$) or no significant difference ($p>0.05$). If there is a significant difference, the null hypothesis is rejected, as there is support for the alternative hypothesis. If there is no significant difference, the null hypothesis is accepted, as there is no support for the alternative hypothesis.

Because the multivariate test of MANOVA shows only an overall significant difference and does not pinpoint where a significant Wilks' lambda result was found, it was followed by univariate analyses, where Scheffè *post hoc* tests were performed to reveal more specific differences between groups on each of the identified choice factors. Therefore, where a significant Wilks' lambda result was found, it was followed by a one-way analysis of variance (ANOVA). In the case of more than two groups, Scheffè *post hoc* tests were also conducted to reveal the groups that differed from one another. Significant results are indicated in bold print in the different tables.

Hypotheses 5, 6 and 7 involved comparisons between the mean scores of two independent groups and therefore t-tests were used. Two assumptions underlie the t-test (Diamantopoulos and Schlegelmilch, 2000:185). Firstly, the equality of variance assumption needs to be tested by using a Levene F-test for variability. If the F-test is significant, the t-test assuming unequal variance, also known as the separated variance t-test, is used. If the F-test is not significant, the t-test assuming equal variance, also known as the pooled variance t-test, will be used. The second assumption that needs to be tested is the assumption of normality. Fortunately, these tests are robust to violations of the normality assumption, especially if both groups are large (n>30) and more or less equal in size as is the case with the large sample (1241) of this study and the groups being more or less equal in size (StatSoft, 1983-2004).

For the remainder of Chapter 6, the objectives will be discussed in chronological order with the related hypotheses where applicable.

6.5.1   RESEARCH OBJECTIVE 1

Determine the relative importance of each of the 23 identified choice factors that first year Economic and Management Sciences students use to select a higher education institution.

Due to the changing higher education landscape (refer to Chapter 2), institutions are forced to become more market-oriented and it is essential that institutions know which factors students use to select an institution (refer to Chapter 4). It is also important to know which choice factors are more important than others, as resources are often limited and institutions cannot deliver on all the factors. Higher education institutions must also try and obtain a competitive advantage by focusing on the most important choice factors. Therefore, this study aimed to determine the relative importance of the choice factors that first year Economic and Management Sciences students use to select a higher education institution. The results reflecting the answer to the research question (refer to Question 1 of questionnaire) are depicted in Table 6.6.

Table 6.6:   Order of importance of choice factors

ORDER OF IMPORTANCE	VARIABLE NO	VARIABLE DESCRIPTION	MEAN
1	V 2	Quality of teaching	4.51
2	V 21	Employment prospects (possible job opportunities	4.45
3	V 10	Campus safety and security	4.33
4	V 3	Academic facilities (libraries & laboratories)	4.21
5	V 20	International links (study & job opportunities)	4.18
6	V 17	Language policy	4.05
7	V 23	Image of higher education institutions	4.04
8	V 22	Flexible study mode (evening classes & use of computers)	4.02
9	V 15	Academic reputation (prestige)	3.99
10	V 1	Wide choice of subjects/courses	3.97
11	V 4	Entry requirements	3.75
12	V 18	Links with the industry	3.71
13	V 5	Fees (cost)	3.70
14	V 16	Financial assistance (bursary & loans)	3.69
15	V 6	Location of higher education institutions	3.69
16	V 9	Attractiveness of campus	3.51
17	V 19	Multi-culturality/ diversity	3.35
18	V 8	Social life on campus (Rag, music festivals, campus dances)	3.17
19	V 11	On-campus housing / hostels	3.12
20	V 7	Sport programmes	2.69
21	V 14	Friends went there	2.35
22	V 13	Brother/sister went there	1.93
23	V 12	Parents went there (tradition)	1.83

From Table 6.6, it is evident that choice factors differ in their importance. Some of the differences are discussed below.

- The top ten choice factors respondents regarded as important in the selection of a higher education institution were: quality of teaching, employment prospects (possible job opportunities), campus safety and security, academic facilities (libraries and laboratories), international links (study and job opportunities), language policy, image of higher education institution, flexible study mode (evening classes and use of computers), academic reputation (prestige), and a wide choice of subjects/courses.

- Quality of teaching and employment prospects seem to play a very important role in students' decisions to choose an institution, as these variables had very high mean values and a low standard deviation (refer to Table 6.4), indicating that most respondents had a high level of agreement on the importance of this item.

- Respondents attached a very low importance to the fact that their family members (brothers, sisters or parents) attended a certain institution.

- Respondents attached a higher importance on academic aspects such as quality of teaching (mean = 4.5), facilities (mean = 4.2) and reputation (mean = 4.0) than on social factors such as social life (mean = 3.1) and sport programmes (mean = 2.7).

- Academic reputation was only ranked number nine out of 23 choice factors, which is in contrast with the study of Cosser and Du Toit (2002:95) and Coetzee and Liebenberg (2004:72), who found that reputation is the most important factor influencing decisions about an institution for choice of study. Another conflicting result is the importance of sporting facilities as a choice factor, which only ranked twentieth out of 23 choice factors, while Cosser and Du Toit (2002:95) and Coetzee and Liebenberg (2004:72) irrespectively found it to rank third and fourth. However, the fact that parents or relatives studied at the institution were ranked last in this study, echoes the findings of Coetzee and Liebenberg (2004:72), where it also ranked the lowest.

- Interesting is that although fees (cost) were indicated as relatively important (mean value = 3.7), it only ranked thirteenth on the list of 23 choice factors.

Thus, the above-discussed results answers the research question: What is the relative importance of each of the choice factors that first year Economic and Management Sciences students use to select a higher education institution?

6.5.2 RESEARCH OBJECTIVE 2

Investigate the usefulness of the sources of information considered by first year Economic and Management Sciences students as perceived by ethnic groups, gender groups and academic institutions attended.

In order to reach prospective students in their search for information when selecting a higher education institution, it is imperative that institutions make the necessary information available using appropriate sources to reach these students (refer to Chapter 4). It was therefore decided to investigate the usefulness of different information sources considered by first year Economic and Management Sciences students in the selection process as perceived by ethnic groups, gender groups and higher education institutions attended, to enable institutions to ensure an effective and efficient communication strategy.

Table 6.7 indicates the ranking of the information sources based on their mean values and will serve as a general indicator of which information sources in general are more useful than others. Table 6.8, Table 6.9 and Table 6.10 contain the usefulness of information sources as perceived by ethnic, gender and institutional groups.

Table 6.7: **The usefulness of information sources ranked in descending order by mean value**

ORDER OF IMPORTANCE	VARIABLE	DESCRIPTION	MEAN
1	V32	Campus visits & open days	3.97
2	V31	University websites	3.90
3	V30	University publications (newsletters & brochures)	3.82
4	V36	Word-of-mouth (friends & other people)	3.72
5	V33	Alumni	3.56
6	V38	Events on campus (music festivals, Rag, sports events	3.52
7	V29	School visits by university staff	3.50
8	V35	High school teachers	3.47
9	V34	Parents	3.44
10	V39	Advertisement in magazines / newspapers	3.27
11	V37	Advertisements on radio	3.06
12	V40	Advertisements on TV	2.59

As noted in Table 6.5, the non-applicable responses were not included in further data analysis; therefore the differences in the mean values between Table 6.5 and Table 6.7.

It is apparent from Table 6.7 that all the information sources investigated were useful to some extent to students. Below are some comments on Table 6.7.

- Campus visits and open days were the most useful information source, followed by websites and university publications. Interesting to note is that the top three information sources are all university related sources and it may be an indication that students prefer to receive information directly from the institution.

- The low ranking of high school teachers (eighth out of 12 information sources) may be due to the fact that not all schools have a designated guidance teacher, which could result in information not shared to learners at schools.

- Even though websites may be seen as a relatively new medium, respondents have indicated it as being very useful (mean=3.9).

- Respondents viewed advertisements on radio, in magazines/newspapers and on television as the least useful of the information sources investigated in the study. It is important to note that all these sources are marketing tools directed at the masses and part of mass media related information sources.

- Information sources directly linked to higher education institutions or sources that are more personal, such as reference groups, seem to be more useful to students than information from mass media.

For the discussion in the next three sections (Tables 6.8 to 6.10), the 12 information sources investigated were divided into three groups: **university related information sources** consisting of school visits, publications, websites and campus visits/open days; **reference group related information sources** consisting of alumni, parents, high school teachers and word-of-mouth; and **mass media related information sources** consisting of advertisements on radio and television and in magazines/newspapers, and campus events. The purpose of the discussion in Sections 6.5.2.1 to 6.5.2.3 is to identify trends – please note that no significant tests were conducted – and thus only provide a starting point to understand possible differences or similarities in the responses.

6.5.2.1 Usefulness of university related information sources

Table 6.8 indicates the percentages of respondents according to gender, ethnic and institutional group, and their rating of the usefulness of university related information sources such as school visits, open day/campus visits, websites and publications.

Table 6.8: Usefulness of university related information sources

Usefulness of information source	Gender		Ethnicity				Higher Education Institution					
	Male	Female	Black African	Col	Indian	Caucasian	TUT	UP	UJ	UFS	UNW	UKZN
School visits												
Very poor	15.23	7.38	12.31	19.23	17.50	5.97	10.76	8.42	17.48	6.62	2.91	23.30
Poor	9.77	8.56	10.51	15.38	16.25	7.00	7.59	11.88	9.79	9.93	2.91	18.45
Fair	22.99	23.49	21.32	23.08	20.00	26.54	17.09	30.69	22.38	27.81	22.82	15.53
Good	31.32	35.40	28.53	26.92	28.75	38.48	28.48	30.69	33.57	30.46	45.15	29.13
Excellent	20.69	25.17	27.33	15.38	17.50	22.02	36.08	18.32	16.78	25.17	26.21	13.59
University publications												
Very poor	2.71	2.48	2.96	0.00	5.71	1.51	1.92	0.84	6.11	1.74	0.00	6.67
Poor	7.64	4.82	4.33	3.23	13.33	5.27	2.88	7.14	7.22	4.65	4.09	12.59
Fair	27.34	23.83	19.13	25.81	31.43	28.81	18.27	31.51	25.56	26.16	19.55	30.37
Good	38.42	40.91	38.95	58.06	28.57	43.31	39.90	38.24	36.11	41.28	52.27	28.15
Excellent	23.89	27.96	34.62	12.90	20.95	21.09	37.02	22.27	25.00	26.16	24.09	22.22
Website												
Very poor	3.63	1.86	4.57	0.00	3.96	0.98	4.51	2.08	2.79	1.19	0.98	6.20
Poor	6.48	4.04	3.76	10.71	9.90	4.30	6.77	5.00	3.35	3.57	2.94	10.08
Fair	22.80	22.20	19.35	14.29	26.73	24.61	20.30	22.50	20.67	22.62	21.57	28.68
Good	39.90	40.22	32.80	60.71	41.58	44.53	30.83	45.00	40.22	38.10	44.12	34.88
Excellent	27.20	31.68	39.52	14.29	17.82	25.59	37.59	25.42	32.96	34.52	30.39	20.16
Campus visits and open days												
Very poor	5.13	2.53	5.35	3.57	4.00	1.58	5.73	1.72	3.39	4.58	0.99	6.30
Poor	5.38	3.87	4.38	14.29	8.00	3.56	3.65	4.31	3.39	7.19	0.49	11.02
Fair	18.72	17.29	17.03	14.29	27.00	16.44	12.50	18.97	20.90	24.84	8.37	25.98
Good	41.03	38.15	37.23	39.29	37.00	42.77	40.10	43.10	36.72	39.87	39.41	37.01
Excellent	29.74	38.15	36.01	28.57	24.00	35.64	38.02	31.90	35.59	23.53	50.74	19.69

When one investigates gender and the usefulness of university related information sources, Table 6.8 shows that female students tend to rate the usefulness of school visits, university publications, websites and campus visits higher than their male counterparts.

The data from Table 6.8 makes several suggestions with regard to ethnicity and the usefulness of university related information sources.

- Black African and Caucasian students tend to rate the usefulness of school visits much higher than Indian and Coloured students. Almost 35 percent of Coloured students rated school visits as poor to very poor.

- Black African and Coloured students tend to rate the usefulness of university publications and websites much higher than Caucasian or Indian students.

- Caucasian students tend to find campus visits and open days very useful, as almost 79 percent rated its usefulness as good or excellent, followed by 73 percent of the Black African students.

- Indian students tend to rank all four university related information sources lower than the other ethnic groups.

Table 6.8 also shows interesting results about the usefulness of university related information sources and the different higher education institutions.

- Students from UNW, UFS and TUT tend to rate the usefulness of school visits and university publications higher than the other universities. Almost 36 percent of TUT students rated the usefulness of school visits as excellent. The biggest difference seems to be between the students from UNW and UKZN, as only 6 percent of UNW students rated it as poor or very poor, while 44 percent of the students of UKZN rated the usefulness of school visits as poor or very poor. Almost 37 percent of the students of TUT rated the usefulness of university publications as excellent compared to the 22 percent of UKZN and UP students.

- Students of UNW rated websites' usefulness the highest, followed by students from UJ, UFS, UP, TUT and UKZN.

- UNW students tend to be very positive towards campus visits and open days, as 51 percent of the students rated its usefulness as excellent, while an overwhelming 90 percent rated it as good or excellent.

- UKZN students rated the usefulness of university related information sources lower in all situations as opposed to the respondents of other higher education institutions.

6.5.2.2   Usefulness of reference group related information sources

The usefulness of sources such as alumni, parents, word-of-mouth and high school teachers were grouped together as reference group related information sources and the results are depicted in Table 6.9.

Table 6.9:   Usefulness of reference group related information sources

Usefulness of information source	Gender		Ethnicity				Higher Education Institution					
	Male	Female	Black A	Col	Indian	Caucasian	TUT	UP	UJ	UFS	UNW	UKZN
Alumni												
Very poor	6.63	3.29	5.24	7.69	7.69	3.17	6.00	5.09	3.95	2.96	1.92	7.96
Poor	7.65	6.14	7.38	7.69	10.99	5.74	5.50	9.26	9.04	5.33	2.88	12.39
Fair	34.18	32.63	34.05	38.46	35.16	32.28	35.00	36.11	32.77	34.32	23.08	39.82
Good	35.20	40.87	34.76	30.77	32.97	43.37	28.00	37.50	44.63	39.05	51.92	28.32
Excellent	16.33	17.07	18.57	15.38	13.19	15.45	25.50	12.04	9.60	18.34	20.19	11.50
Parents												
Very poor	9.40	4.87	9.30	7.41	6.25	3.61	7.94	5.70	9.36	4.43	3.55	9.17
Poor	9.14	8.83	9.55	14.81	12.50	7.83	11.64	7.89	9.36	6.69	7.11	11.67
Fair	34.73	35.01	27.89	51.85	33.33	39.96	21.69	35.96	44.44	39.87	36.04	32.50
Good	33.42	33.33	31.66	22.22	36.46	35.34	31.22	35.09	26.90	32.91	38.07	35.83
Excellent	13.32	17.96	21.61	3.70	11.46	13.25	27.51	15.35	9.94	15.82	15.23	10.83
High school teachers												
Very poor	8.85	4.85	7.67	7.14	2.97	4.82	6.06	6.61	6.75	5.63	4.93	6.98
Poor	13.02	7.93	9.11	14.29	9.90	10.44	9.09	12.33	10.00	11.25	6.90	8.53
Fair	36.72	32.60	23.74	21.43	37.62	42.17	18.69	37.44	31.18	38.13	42.86	34.88
Good	28.13	32.60	32.61	42.86	31.68	30.32	28.28	29.07	39.41	29.37	32.02	31.01
Excellent	13.28	22.03	26.86	14.29	17.82	12.25	37.88	14.54	11.76	15.63	13.30	18.60
Word-of-mouth												
Very poor	5.33	2.85	6.11	3.33	4.72	1.69	5.16	2.50	3.72	4.49	1.36	7.52
Poor	6.54	5.28	6.99	10.00	6.60	3.94	5.63	6.67	6.91	5.62	1.82	8.27
Fair	27.36	27.51	25.11	40.00	32.08	27.39	24.41	28.75	26.60	29.21	24.09	33.08
Good	40.19	40.65	35.59	23.33	33.96	46.90	36.56	40.83	39.36	41.57	49.55	31.58
Excellent	20.58	23.71	26.20	23.33	22.64	20.08	27.23	21.25	23.40	19.10	23.18	19.55

From Table 6.9 it is evident that there tends to be differences between gender groups in terms of the usefulness of information sources, as females rated all four reference group related sources (parents, teachers, word-of-mouth and alumni) higher than their male counterparts.

Some deductions regarding ethnicity and the usefulness of reference group related information sources can be made, as summarised in Table 6.9.

- Black African students tend to view reference group related information sources as much more useful than the other ethnic groups.

- There seems to be differences between ethnic groups in terms of the usefulness of parents as a source of information, as only 26 percent Coloured students rated parents as a good or excellent source, while 53 percent Black African students and 48 percent Caucasian students rated it as good or excellent.

- If compared on the percentage of respondents rating alumni and word-of-mouth as good to excellent sources of information, Caucasian and Black African students tend to feel more positive towards the usefulness of alumni and word-of-mouth than Indian and Coloured students. Word-of-mouth are viewed the least useful by Coloured students.

- Black African and Coloured students differ from Indian and Caucasian students, as they rated high school teachers higher than the other two groups. Almost 58 percent Black African and 56 percent Coloured students rated high school teachers' usefulness as good or excellent compared to 48 percent Indian and 42 percent Caucasian students.

Table 6.9 further shows that in terms of higher education institutions:

- There tends to be a difference between students from UKZN and UNW regarding the usefulness of alumni, as 72 percent of the UNW students and only 39 percent of the UKZN students rated it as a good or excellent source of information;

- Students from UKZN rated the usefulness of parents the lowest of all six universities, with 21 percent of their students rating it as a poor or very poor source, while only 11 percent of UFS and UNW students rated it as poor or very poor;

- The usefulness of high school teachers was rated much higher by TUT students and students from UJ than the other universities; and

- UNW had the highest percentage (72%) of students rating the usefulness of word-of-mouth as good or excellent, compared to only 50 percent of the UKZN students.

6.5.2.3 Usefulness of mass media related information sources

The usefulness of television advertisements, magazine/newspaper advertisements, radio advertisements and campus events were grouped together as mass media related information sources. The results are shown in Table 6.10.

Table 6.10: Usefulness of mass media related information sources

Usefulness of information source	Gender		Ethnicity				Higher Education Institution					
	Male	Female	Black A	Col	Indian	Caucasian	TUT	UP	UJ	UFS	UNW	UKZN
Advertisement on radio												
Very poor	13.70	11.99	15.99	6.67	16.47	8.99	10.84	14.29	14.91	11.95	5.52	21.10
Poor	25.07	20.58	18.43	16.67	31.76	24.34	13.25	32.51	25.47	16.35	17.13	30.28
Fair	26.53	29.34	24.66	26.67	27.06	31.08	24.10	27.59	22.98	28.93	36.46	29.36
Good	20.41	21.07	20.60	26.67	12.94	21.93	18.07	14.29	26.09	25.16	25.41	12.84
Excellent	14.29	17.02	20.33	23.33	11.76	12.94	33.73	11.33	10.56	17.61	15.47	6.42
Campus events												
Very poor	10.19	8.08	13.61	11.11	17.05	3.21	13.67	6.06	8.88	6.75	2.02	24.11
Poor	12.12	9.03	13.06	11.11	26.14	6.01	15.11	7.79	11.83	10.43	3.03	22.32
Fair	25.62	25.67	24.17	33.33	25.00	25.85	25.90	25.11	28.99	26.38	22.73	23.21
Good	26.17	32.33	28.89	29.63	14.77	34.27	23.74	34.20	31.36	33.74	33.33	17.86
Excellent	25.90	24.88	20.28	14.81	17.05	30.66	21.58	26.84	18.93	22.70	38.89	12.50
Magazines/ newspapers advertisement												
Very poor	10.60	8.19	12.85	13.33	10.75	4.5	10.47	7.27	10.56	7.88	2.55	19.83
Poor	15.22	15.17	11.34	16.67	29.03	15.75	10.47	22.73	12.22	11.52	11.22	25.00
Fair	33.70	29.59	22.67	30.00	24.73	38.65	18.60	36.36	34.44	27.27	37.24	27.59
Good	26.09	31.11	31.49	30.00	22.58	30.06	30.81	27.27	28.89	36.36	34.18	17.24
Excellent	14.40	15.93	21.66	10.00	12.90	11.04	29.65	6.36	13.89	16.97	14.80	10.34
Television advertisement												
Very poor	28.80	21.85	26.50	20.83	26.92	22.36	22.83	30.05	24.20	25.76	11.59	37.25
Poor	26.27	25.05	22.08	29.17	32.05	26.54	17.32	34.43	26.75	27.27	17.07	29.41
Fair	22.47	25.99	20.19	20.83	23.08	28.01	22.83	18.03	19.75	28.03	37.20	19.61
Good	13.29	18.27	18.93	20.83	7.69	16.95	15.75	14.75	21.66	13.64	22.56	7.84
Excellent	9.18	8.85	12.30	8.33	10.26	6.14	21.26	2.73	7.64	5.30	11.59	5.88

Below are some remarks pertaining to higher education institutions and mass media related information sources.

- Students from different higher education institutions tend to differ in their perceptions of the usefulness of radio advertisements, campus visits, magazine advertisements and television advertisements.

- An overwhelming 46 percent of the UP students and 51 percent of the UKZN students found radio's usability to be poor or very poor, while only 23 percent of

the TUT students and 22 percent of the UNW students rated it as poor or very poor.

- Students from UNW tend to prefer campus events more than students from other institutions, as 72 percent of their students rated its usefulness as good or excellent, compared to only 29 percent of UKZN and 44 percent of TUT.

- There tends to be a difference between especially UKZN and UNW concerning magazine advertisements, as 45 percent of UKZN students rated its usefulness as poor to very poor, compared to only 13 percent of UNW students.

- The rating of the usefulness of television advertisements tends to differ according to institutions, as 21 percent of the TUT students rated it as an excellent information source compared to 11 percent of UNW, 7 percent of UJ, 6 percent of UKZN and 3 percent of UP students.

The following deductions can be made from Table 6.10 concerning ethnicity and the usefulness of mass media related information sources:

- Radio and television advertisements were rated useful by more Black African and Coloured students, while the Indian and Caucasian students did not find it very useful;

- There tends to be a difference in the usefulness of campus events and ethnicity, as 43 percent of Indian students found its usefulness as poor to very poor as opposed to only 9 percent Caucasian students who rated it as poor to very poor; and

- Black Africans rated magazine advertisements more useful than the other three ethnic groups, with Indian students providing the lowest rating.

Table 6.10 shows that there seem to be differences between males and females and their perceptions of the usefulness of mass media related information sources, with more females rating all four mass media sources more useful than their male counterparts.

Thus, the above-discussed tables addressed the research question: What is the usefulness of the sources of information considered by first year Economic and Management Sciences students in the selection process as perceived by ethnic groups, gender groups and academic institutions attended?

6.5.3   RESEARCH OBJECTIVE 3

Determine whether students from different ethnic backgrounds differ regarding the importance they attach to choice factors when selecting a higher education institution.

Previous studies (refer to Section 5.3.1 and Section 4.5.1) suggested possible differences in the importance different ethnic groups attach to choice factors. Due to these findings and the multi-cultural composition of students in South Africa, it is important for higher education institutions to determine whether students from different ethnic backgrounds differ regarding the importance they attach to choice factors when selecting a higher education institution. The results could be used to adapt or change institutions' marketing and communication strategies aimed at different ethnic groups. It was therefore hypothesised that:

H_1:   Students from different ethnic backgrounds differ regarding the importance they attach to choice factors.

The above-mentioned hypothesis involves a comparison between three ethnic groups, namely "Caucasian", "Black African" and "Other" on a construct labelled as "choice factors". As mentioned previously, due to the limited number of respondents in the Indian, Coloured and other categories, these groups were combined into one group and labelled as "other". As also previously mentioned (in Section 5.6), MANOVA testing was used to test Hypothesis 1. The means values of the three ethnic groups and the MANOVA results of the hypothesis test are shown in Table 6.11.

Table 6.11: Mean values and MANOVA results for different ethnic groups

CHOICE FACTORS	Black African	Other	Caucasian	Univariate Analyses	F value	p-value
Wide choice of subjects/courses (V1)	4.05	4.01	3.90	0.0890		
Quality of teaching (V2)	4.41 [a]	4.58 [b]	4.60 [a]	**0.0009**		
Academic facilities (V3)	4.15 [b]	4.46 [a b]	4.21 [a]	**0.0030**		
Entry requirements (V4)	3.86 [b]	3.92 [a]	3.62 [a b]	**0.0002**		
Fees (V5)	3.73 [a]	4.03 [a b]	3.58 [b]	**0.0002**		
Location of university (V6)	3.55 [a b]	3.95 [a]	3.76 [b]	**0.0011**		
Sport programmes (V7)	2.43 [a b]	2.76 [b]	2.95 [a]	**0.0000**		
Social life on campus (V8)	2.69 [a]	3.07 [a]	3.67 [a]	**0.0000**		
Attractiveness of campus (V9)	3.30 [a]	3.55 [b]	3.68 [a]	**0.0000**		
Campus safety and security (V10)	4.34	4.47	4.33	0.2480		
On-campus housing (V11)	3.05 [a]	2.33 [a]	3.48 [a]	**0.0000**		
Parents went there (V12)	1.83 [b]	1.55 [a b]	1.89 [a]	**0.0069**		
Brother/Sister went there (V13)	1.89 [b]	1.67 [a]	1.99 [a]	**0.0210**		
Friends went there (V14)	2.09 [a]	1.99 [b]	2.60 [a b]	**0.0000**		
Academic reputation (V15)	4.03	4.09	3.97	0.3904		
Financial assistance (V16)	3.78	3.77	3.65	0.3713		
Language policy (V17)	3.94 [a]	4.04 [b]	4.17 [a]	**0.0110**		
Links with the industry (V18)	3.86 [a]	3.83 [b]	3.57 [a b]	**0.0001**		
Multi-culturality (V19)	3.66 [b]	3.72 [a]	2.97 [a b]	**0.0000**		
International links (V20)	4.23	4.19	4.18	0.7330		
Employment prospects (V21)	4.49	4.50	4.40	0.1769		
Flexible study mode (V22)	4.10	4.12	3.96	0.0540		
Image of university (V23)	3.99	4.16	4.07	0.2031		
Wilks' lambda					11.85	**0.000**

The results of the Scheffé *post hoc* tests are indicated with [a] and/or [b]. All mean values containing the same letters (for example, [a]) indicate that the groups differ significantly from one another. All mean values containing different letters (for example, [a] or [b]) indicate that these groups do not differ significantly from one another.

The Wilks' lambda value indicates a significant difference (p=0.000) between ethnic groups in terms of the importance they attach to the different choice factors. The null hypothesis was thus rejected, as there is support for H$_1$. To determine where the differences between the three groups lay, univariate analyses were conducted on the different dependent variables (choice factors). This revealed that the difference between the ethnic groups were evident in the: quality of teaching

(V2), academic facilities (V3), entry requirements (V4), fees (V5), location of university (V6), sport programmes (V7), social life on campus (V8), attractiveness of campus (V9), on-campus housing (V11), parents went there (V12), brother/sister went there (V13), friends went there (V14), language policy (V17), links with the industry (V18), and multi-culturality (V19).

Scheffè *post hoc* tests were conducted to determine where the differences lie between the various groups and the respective mean values are indicated below:

- Caucasian students regard quality of teaching (mean value of 4.60 versus 4.41), campus attractiveness (mean value of 3.68 versus 3.30) and an institution's language policy (mean value of 4.17 versus 3.94) as more important than Black African students.

- Academic facilities as well as university fees are more important to other ethnic groups than Caucasian or Black African students.

- Caucasian students attach a lower importance to entry requirements, links with the industry and a multi-cultural institution, than Black African students or students from the other ethnic group.

- Black African students differ significantly from Caucasian and the other ethnic group students in terms of the lower importance attached to the location of a university.

- Caucasian students and students from the other ethnic groups differ significantly from Black African students, as they regard sport programmes and the location of an institution as more important.

- Students from all three ethnic groups differ significantly from each other in terms of social life on campus, with Caucasian students having the highest mean score (3.67) and Black African students the lowest mean score (2.69). All three groups also differ significantly in terms of on-campus housing, with Caucasian students attaching the highest importance (mean value of 3.48) and students from other ethnic groups attaching the lowest importance (mean value of 2.33) to on-campus accommodation.

- The fact that their brother/sister as well as their parents and friends attended an institution was the most important for Caucasian students.

6.5.4 RESEARCH OBJECTIVE 4

Determine whether students with different home languages differ regarding the importance they attach to choice factors when selecting a higher education institution.

Language is related to ethnic groups and as mentioned in Section 6.5.3, literature suggests differences between ethnic groups and the importance of choice factors. The assumption can thus be made that possible differences can be expected between different language groups as well. It was therefore decided to determine whether students with different home languages differ regarding the importance they attach to choice factors when selecting a higher education institution and Hypothesis 2 was formulated as follows:

H_2: **Students speaking different home languages differ regarding the importance they attach to choice factors.**

The above-mentioned hypothesis involves the comparison between three groups and because the multivariate test of MANOVA shows only an overall significant difference, univariate analyses and Scheffè *post hoc* tests were also performed to reveal more specific differences between groups on each of the identified choice factors. To simplify the results for statistical testing and analysis, a decision was made to collapse the responses for all nine African languages into one group namely, "African languages". Due to the small size of the respondents indicating other home languages (2%), this group was not included in further statistical analyses. The mean values for the three language groups and the MANOVA results of the hypothesis test, univariate analysis and *post hoc* comparisons are set out in Table 6.12.

Table 6.12: Mean values and MANOVA results for different language groups

CHOICE FACTORS	African	Afrikaans	English	Univariate Analyses	F value	p-value
Wide choice of subjects/courses (V1)	4.06	3.94	3.92	0.1430		
Quality of teaching (V2)	4.41 [a]	4.63 [a]	4.51 [b]	**0.0002**		
Academic facilities (V3)	4.16 [a]	4.21 [b]	4.35 [a]	**0.0488**		
Entry requirements (V4)	3.84	3.68	3.71	0.0787		
Fees (V5)	3.72	3.68	3.68	0.8657		
Location of university (V6)	3.55 [a b]	3.77 [a]	3.83 [b]	**0.0050**		
Sport programmes (V7)	2.45 [a b]	2.97 [a]	2.78 [b]	**0.0000**		
Social life on campus (V8)	2.69 [a]	3.74 [a]	3.17 [a]	**0.0000**		
Attractiveness of campus (V9)	3.33 [b]	3.77 [a b]	3.39 [a]	**0.0000**		
Campus safety and security (V10)	4.34	4.39	4.30	0.4388		
On-campus housing (V11)	3.07 [a]	3.66 [a]	2.40 [a]	**0.0000**		
Parents went there (V12)	1.85 [b]	1.94 [a]	1.52 [a b]	**0.0000**		
Brother/Sister went there (V13)	1.92 [b]	2.03 [a]	1.66 [a b]	**0.0008**		
Friends went there (V14)	2.12 [b]	2.65 [a b]	2.15 [a]	**0.0000**		
Academic reputation (V15)	4.02 [b]	3.93 [a]	4.15 [a]	**0.0192**		
Financial assistance (V16)	3.82 [b]	3.82 [a]	3.39 [a b]	**0.0000**		
Language policy (V17)	3.93 [a]	4.32 [a b]	3.77 [b]	**0.0000**		
Links with the industry (V18)	3.85 [a]	3.57 [a b]	3.80 [b]	**0.0004**		
Multi-culturality (V19)	3.66 [a]	3.04 [a]	3.38 [a]	**0.0000**		
International links (V20)	4.20	4.24	4.06	0.0641		
Employment prospects (V21)	4.49	4.44	4.38	0.2871		
Flexible study mode (V22)	4.10	3.98	3.97	0.1715		
Image of university (V23)	3.99 [a]	4.18 [a b]	3.91 [a]	**0.0018**		
Wilks' lambda					12.44	**0.000**

The results of the Scheffé *post hoc* tests are indicated with [a] and/or [b]. All mean values containing the same letters (for example, [a]) indicate that the groups differ significantly from one another. All mean values containing different letters (for example, an [a] or [b]) indicate that these groups do not differ significantly from one another.

The Wilks' lambda value indicates a significant difference (p=0.000) between different language groups in terms of the importance they attach to the different choice factors. The null hypothesis was thus rejected, as there is support for H$_2$.

The follow-up univariate analyses showed that these differences were significant for the following choice factors: quality of teaching (V2), academic facilities (V3), location of university (V6), sport programmes (V7), academic reputation, social life on campus

(V8), attractiveness of campus (V9), on-campus housing (V11), parents went there (V12), brother/sister went there (V13), friends went there (V14), academic reputation (V15), financial assistance (V16), language policy (V17), links with the industry (V18), multi-culturality (V19), and the image of the university (V23).

The Scheffè *post hoc* tests revealed interesting differences briefly discussed below.

- A significant difference can be seen between Afrikaans and African speaking students in terms of the importance they attach to quality of teaching, as Afrikaans speaking students attach a higher importance (mean value of 4.63) to quality of teaching than African speaking students (mean value of 4.41).

- English speaking students attach a higher importance to academic facilities than African or Afrikaans speaking students.

- English and Afrikaans speaking students differ from African speaking students, as they attach a higher importance to the location of a university and sport programmes than African speaking students.

- Afrikaans speaking students attach a higher importance to the attractiveness of a campus, the image of a university and the fact that their friends attended an institution, than English and African speaking students.

- All three groups differ from one another regarding social life on campus and on-campus housing. African speaking students attach the lowest importance (mean value of 2.69) to social life, while Afrikaans speaking students attach the highest importance (mean value of 3.74). English speaking students indicated the lowest importance (mean value of 2.40) and the Afrikaans speaking students the highest importance (mean value of 3.66) to on-campus housing.

- Afrikaans speaking students differ from the other two groups on the importance of links with the industry, with Afrikaans speaking students having the lowest mean value (3.57) compared to English speaking students (3.8) and African speaking students. African speaking students attach the highest importance with a mean value of 3.85.

- English speaking students differ significantly with the students from the other two language groups on the importance of the fact that parents attended the institution, brothers/sisters attended the institution and the importance of financial

assistance. English speaking students attach a lower importance (mean value of 1.5) to the fact that their parents attended an institution than African (mean value of 1.8) and Afrikaans (mean value of 1.9) speaking students. English speaking students also attach a lower importance to the fact that their brothers and/or sisters attended an institution and the importance of financial assistance than African and Afrikaans speaking students.

- English speaking students had a mean value of 4.15, while Afrikaans speaking students had a mean value of only 3.93 with regards to the importance of an institution's academic reputation. Thus, an institution's academic reputation is more important to English speaking students.

- Afrikaans speaking students attach a lower importance to an institution's language policy than students from the other two language groups.

6.5.5 RESEARCH OBJECTIVE 5

Determine whether there are gender differences regarding the importance students attach to choice factors when selecting a higher education institution.

As suggested in Section 4.5.1 and Section 5.3.1, gender could influence the importance of choice factors. Higher education institutions need to be aware of these differences, if any, to ensure that they reach and influence male as well as female students. It was decided to investigate whether there are gender differences regarding the importance students attach to choice factors when selecting a higher education institution. Hypothesis 3 was formulated and is listed below.

H$_3$: Male and female students differ regarding the importance they attach to choice factors.

The above-mentioned hypothesis involves the comparison between two groups namely "female" and "male" on a construct labelled as "choice factors". The mean values of the two gender groups and the MANOVA result of the hypothesis test are shown in Table 6.13.

Table 6.13:   Mean values and MANOVA results for different gender groups

CHOICE FACTORS	Male	Female	Univariate Analyses	F value	p-value
Wide choice of subjects/courses (V1)	3.88	4.03	**0.0207**		
Quality of teaching (V2)	4.46	4.57	**0.0209**		
Academic facilities (V3)	4.19	4.24	0.4102		
Entry requirements (V4)	3.62	3.82	**0.0025**		
Fees (V5)	3.59	3.76	**0.0264**		
Location of university (V6)	3.75	3.64	0.1465		
Sport programmes (V7)	2.86	2.65	**0.0092**		
Social life on campus (V8)	3.34	3.17	**0.0428**		
Attractiveness of campus (V9)	3.52	3.54	0.7612		
Campus safety and security (V10)	4.11	4.50	**0.0000**		
On-campus housing (V11)	3.00	3.25	**0.0073**		
Parents went there (V12)	1.86	1.81	0.4448		
Brother/Sister went there (V13)	2.01	1.86	**0.0494**		
Friends went there (V14)	2.52	2.24	**0.0007**		
Academic reputation (V15)	4.00	4.02	0.7024		
Financial assistance (V16)	3.63	3.77	0.1164		
Language policy (V17)	4.03	4.09	0.3947		
Links with the industry (V18)	3.68	3.73	0.4588		
Multi-culturality (V19)	3.20	3.42	**0.0053**		
International links (V20)	4.11	4.24	**0.0436**		
Employment prospects (V21)	4.36	4.50	**0.0046**		
Flexible study mode (V22)	3.97	4.06	0.1748		
Image of university (V23)	4.01	4.08	0.2311		
Wilks' lambda				4.51	**0.0001**

The Wilks' lambda value indicates a significant difference (p=0.0001) between males and females in terms of the importance they attach to the different choice factors. The null hypothesis was thus rejected, as there is support for H$_3$.

The follow-up univariate analyses revealed that these differences were significant for 13 of the 23 choice factors, namely: wide choice of subjects/courses (V1), quality of teaching (V2), entry requirements (V4), fees (V5), sport programmes (V7), social life on campus (V8), campus safety and security (V10), on-campus housing (V11), brother/sister went there (V13), friends went there (V14), multi-culturality (V19), international links (V20), and employment prospects (V21).

Females attach a higher importance than males to the wide choice of subjects/courses, quality of teaching, entry requirements, fees, campus safety and security, on-campus housing, multi-culturality, international links, and employment

prospects. Males attach a higher importance to sport programmes, social life on campus, brother/sister went there, and friends went there, than females.

6.5.6   RESEARCH OBJECTIVE 6

Determine whether students from different higher education institutions differ regarding the importance they attach to choice factors when selecting a higher education institution.

Due to the conflicting results about the importance of different choice factors investigated at different higher education institutions (refer to Section 5.3.1), it was decided to determine whether students from different higher education institutions differ regarding the importance they attach to choice factors when selecting a higher education institution and to test the following hypothesis:

H_4:   **Students from different academic institutions differ regarding the importance they attach to choice factors.**

The above-mentioned hypothesis involves the comparison between six groups, namely "the University of Pretoria (UP)", "Tshwane University of Technology (TUT)", "University of North-West (UNW)", "University of Johannesburg (UJ)", "University of the Free State (UFS)" and "University of KwaZulu Natal (UKZN)" on a construct labelled as "choice factors". MANOVA testing was used to assess the differences between the groups in terms of the importance of the different choice factors. The mean values, MANOVA results of the hypothesis test, univariate analysis and *post hoc* comparisons for the six higher education institutions are presented in Table 6.14.

Table 6.14: Mean values and MANOVA results for higher education institutions

CHOICE FACTORS	UJ	UKZN	UNW	UP	TUT	UFS	Univariate Analysis	F-value	p-value
Wide choice of subjects/courses (V1)	4.05 [c]	4.03 [e]	3.82 [bcd]	4.04 [b]	3.83 [a]	4.10 [ad]	**0.0301**		
Quality of teaching (V2)	4.53 [e]	4.65 [b]	4.69 [a]	4.56 [d]	4.18 [abcd]	4.56 [c]	**0.0000**		
Academic facilities (V3)	4.34 [c]	4.48 [a]	4.21 [e]	4.25 [d]	3.72 [abcd]	4.44 [b]	**0.0000**		
Entry requirements (V4)	3.81 [e]	4.06 [abc]	3.64 [b]	3.67 [a]	3.59 [c]	3.87 [d]	**0.0004**		
Fees (V5)	3.63 [f]	4.05 [ab]	3.71 [e]	3.50 [ac]	3.43 [bd]	3.98 [cd]	**0.0000**		
Location of university (V6)	3.58 [d]	3.90 [c]	3.66 [b]	3.90 [a]	3.45 [a]	3.78 [e]	**0.0015**		
Sport programmes (V7)	2.76 [a]	2.76 [b]	3.00 [e]	2.88 [d]	2.06 [abcde]	2.87 [c]	**0.0000**		
Social life on campus (V8)	3.08 [bei]	3.04 [cfj]	3.91 [abcd]	3.59 [efg]	2.29 [dghij]	3.17 [ah]	**0.0000**		
Attractiveness of campus (V9)	3.23 [de]	3.46 [a]	3.94 [abcd]	3.63 [e]	3.36 [c]	3.39 [b]	**0.0000**		
Campus safety and security (V10)	4.28 [e]	4.57 [a]	4.41 [d]	4.28 [c]	4.15 [ab]	4.53 [b]	**0.0000**		
On-campus housing (V11)	2.77 [behk]	2.49 [cfi]	4.02 [abcd]	3.33 [ahij]	2.24 [dgjk]	3.72 [efg]	**0.0000**		
Parents went there (V12)	1.62 [a]	1.57 [b]	1.89 [c]	1.90 [d]	1.81 [e]	2.03 [ab]	**0.0021**		
Brother/Sister went there (V13)	1.66 [a]	1.71 [b]	2.04 [c]	1.93 [d]	1.87 [e]	2.12 [a]	**0.0020**		
Friends went there (V14)	2.18 [a]	1.92 [cef]	2.61 [abc]	2.56 [fg]	1.94 [bdf]	2.59 [de]	**0.0000**		
Academic reputation (V15)	4.24 [a]	4.19 [b]	4.00 [d]	3.96 [e]	3.60 [abcd]	4.15 [c]	**0.0000**		
Financial assistance (V16)	3.60 [ad]	4.02 [gh]	4.05 [def]	3.46 [beg]	3.21 [cfh]	4.07 [abc]	**0.0000**		
Language policy (V17)	3.80 [c]	3.90 [a]	4.44 [abc]	4.12 [d]	3.85 [b]	4.12 [e]	**0.0000**		
Links with the industry (V18)	3.86 [b]	3.97 [a]	3.53 [a]	3.75 [c]	3.57 [d]	3.73 [e]	**0.0008**		
Multi-culturality (V19)	3.52 [b]	3.69 [a]	2.95 [abc]	3.27 [d]	3.34 [e]	3.47 [c]	**0.0000**		
International links (V20)	4.17 [b]	4.18 [c]	4.34 [a]	4.22 [d]	3.95 [a]	4.27 [e]	**0.0053**		
Employment prospects (V21)	4.36	4.56	4.45	4.41	4.43	4.50	0.3754		
Flexible study mode (V22)	4.09 [e]	4.20 [d]	3.95 [a]	3.94 [b]	3.76 [cd]	4.32 [abc]	**0.0000**		
Image of university (V23)	3.87 [a]	4.21 [c]	4.31 [ab]	4.04 [e]	3.74 [bcd]	4.16 [d]	**0.0000**		
Wilks' lambda								7.59	0.000

The results of the Scheffé *post hoc* tests are indicated with [a] to [k]. All mean values containing the same letters (for example, [a]) indicate that the groups differ significantly from one another. All mean values containing different letters (for example, an [a] or [b]) indicate that these groups do not differ significantly from one another.

The Wilks' lambda value indicates a significant difference (p = 0.000) between higher education institutions in terms of the importance they attach to the 23 choice factors. The null hypothesis was thus rejected, as there is support for H$_4$.

The follow-up univariate analyses revealed that these differences were significant for 22 of the 23 choice factors, with the only exception that the responses from all six institutions rated employment prospect as very important. The Scheffè *post hoc* tests revealed that there are significant differences, with some of them addressed below.

- Students from UFS attach a higher importance to a wide choice of subjects/courses than students from TUT and UNW, while students from UP and UJ also attach a higher importance than students from UNW.

- Students from TUT rank the importance of quality of teaching, academic facilities, entry requirements, fees, location of an institution, sport programmes, social life, campus safety and security, on-campus housing, academic reputation, financial assistance, international links, flexible study mode and the image of a institution, the lowest of all six the institutions. TUT 's mean value for quality of teaching was 4.18, while all the other higher education institutions ranked it as more important, with means ranging from 4.53 to 4.69. Students from TUT differ significantly from the students of all the other institutions, except the students from UNW, on the importance of academic facilities. Students from TUT also differ significantly from all the other higher education institutions on the importance of social life on campus. Social life is the most important to students from UNW and UP, while it is the least important to students of TUT. There is also a significant difference between students from TUT on the importance of academic reputation with students from UJ, UKZN, UNW and UFS.

- Entry requirements were ranked the most important by students of UKZN (mean of 4.06) and therefore differ significantly from students from UP, UNW and TUT with mean values ranging from 3.59 to 3.81.

- UKZN and UFS have the highest mean values, while UP and TUT have the lowest mean values for the choice factor referring to fees. Thus, there is a significant difference in the importance attached to fees between students from UKZN and UFS versus students from UP and TUT.

- The location of an institution is more important to students from UP than students from TUT.

- There are significant differences in the importance of the attractiveness of a campus between students from UNW and students from UKZN, UFS, TUT and UJ. This choice factor was more important to students from UNW (mean of 3.94) and UP (mean of 3.63), but of less importance to students from the other 4 institutions (means raging from 3.23 to 3.46).

- There is a significant difference between the mean scores of the six higher education institutions and the importance of on-campus housing. UNW has a mean score of 4.02, indicating that it is very important, while the mean score of TUT, UKZN and UJ ranged between 2.24 and 2.77, indicating that it is of little importance to them.

- Students from UFS ranked the importance of parents and brothers/sisters attending an institution the highest of all the higher education institutions. It should be noted that the fact that parents and brothers/sisters attended an institution, was of low importance to the respondents from all the higher education institutions. UFS differed significantly from students from UJ and UKZN on importance of parents attending a higher education institution. Students from UFS also differed significantly from students from UJ on the importance of the fact that brothers/sisters attended an institution.

- Students from UNW, UFS and UP attach higher importance to the fact that their friends attended a university than the remaining higher education institutions.

- There is a significant difference between the respondents from the different higher education institutions on the importance they attach to financial assistance. UKZN, UNW and UFS have the highest mean values (ranging from 4.02 to 4.07) for financial assistance while TUT, UJ and UP have lower mean values (ranging from 3.21 to 3.60), indicating that financial assistance is less important.

- The language policy is of lesser importance to students from TUT, UJ and UKZN, with mean values ranging from 3.85 to 3.90, but of great concern to students of UNW, with a mean value of 4.44. Students from UNW also ranked the image of an institution as very important with a mean value of 4.31, while for the students of TUT, it is less important (mean value of 3.74).

- Although links with the industry are moderately important (mean values between 3.53 and 3.86) to all six higher education institutions, students from UKZN ranked it more important than students from UNW.

- The fact that an institution is multi-cultural is more important to students from UKZN, UJ and UFS than for students of UNW.

- Although international links are moderately important (mean values between 3.95 and 4.34) to all six higher education institutions, students from UNW ranked it more important than students from TUT.

- A flexible study mode was the most important to students of UFS and UKZN, while especially TUT students rated its importance as low. There is a significant difference between students from TUT and students from UKZN and UFS as well as between students from UFS and UNW, UP and TUT.

6.5.7 RESEARCH OBJECTIVE 7

Determine if students that live seventy kilometres or further from a higher education institution make more use of campus visits or open days as a source of information than students living close-by.

Several studies on information sources suggested a relationship between the distance of students' permanent homes and the higher education institutions they are attending, as well as the use of open days and campus visits as information sources (refer to Section 5.3). The majority of these studies found that students living further from an institution tend to make more use of campus visits and open days than students whose permanent homes are closer to the institution. Research objective 7 aimed to determine if students that live further than seventy kilometres from a higher education institution make more use of campus visits/open days as a source of information, than students living close-by. The following hypothesis was formulated to address the research objective:

H$_5$ **Students that live further than seventy kilometres from the higher education institution attach more value to campus visits or open days as a source of information than students living close-by.**

The above-mentioned hypothesis involves the comparison between two groups namely "students whose permanent home is more than seventy kilometres from the university they are attending" and "students whose permanent home is seventy kilometres or less from the university they are attending" on a construct labelled as "open days and campus visits". As previously mentioned (Section 5.3.5), for the purpose for equal cell size the groups "10 km or less", "11-30km" and "31-70km" were combined to form the new group of "70 kilometres or less". The mean values of the two groups and the t-test results of the hypothesis test are shown in Table 6.15.

Table 6.15: Mean values and t-test results for distance from an institution and use of campus visits and open days

Distance from university	≤ 70 km N = 688	> 70 km N = 543	F value	p- value
Campus visits and open days	3.9291	4.0419	0.61	0.0676

Since the p-value was larger than the specified significance level of 5 percent, the null hypothesis could not be rejected. There was therefore not enough support for H_5, since the t-test results did not show a significant difference between the distance from students' permanent homes in terms of the higher education institution they attended and the use of open days and campus visits as an information source. This suggests that campus visits and open days are useful sources of information for students, regardless of how far they stay from an institution.

6.5.8 RESEARCH OBJECTIVE 8

Determine if students that are resident in the province in which the higher education institution is located make more use of word-of-mouth as a source of information.

Previous studies on information sources implied a relationship between students' residence in a province in which the higher education institution is located, and the use of word-of-mouth as an information source (refer to Section 5.3). Therefore, it was decided to determine if students that are residents of the province in which the higher

education institution is located, make more use of word-of-mouth as a source of information and the following hypothesis was formulated:

H$_6$:   **Students that are residents of the province in which the chosen higher education institution is located, value word-of-mouth (friends and other people) more as a source of information than students from other provinces.**

The above-mentioned hypothesis involves the comparison between two groups, namely "residents" and "non-residents" on a construct labelled as "word-of-mouth". The mean values of the two groups and the t-test results of the hypothesis test are shown in Table 6.16.

Table 6.16:   Mean values and t-test results for residents of the province and use of word-of-mouth

Resident of the province	Yes N = 734	No N = 491	F value	p- value
Word-of-mouth	3.6985	3.7581	2.33	0.3206

Since the p-value was larger than the specified significance level of 5 percent, the null hypothesis could not be rejected. There was therefore not enough support for H$_6$, since the t-test result did not show a significant difference between students residing in the province in which the higher education institution are located and those not residing in the province for the use of word-of-mouth as an information source. This suggests that regardless of where students stay, they do find word-of-mouth a very useful information source.

6.5.9   RESEARCH OBJECTIVE 9

Determine if students with an average of seventy percent or more in Grade 12 make more use of higher education institutions' websites than students with a lower average in Grade 12.

Several studies on information sources have found a relationship between students' academic ability and the use of websites (refer to Section 5.3). The majority of these studies suggested that students with a higher academic standing tend to make more use of websites. Thus, Objective 9 focused on determining if students with an average of seventy percent or more in Grade 12 make more use of higher education institutions websites than students with a lower average in Grade 12. The following hypothesis was formulated:

H_7: Students with a Grade 12 average of seventy percent or more rely significantly more on higher education institutions' websites as a source of information than students with a lower Grade 12 average.

The above-mentioned hypothesis involves the comparison between two groups, namely "70 percent and above" and "less than 70 percent" on a construct labelled as "websites". The group "59 percent or lower" and the group "60-69 percent" were collapsed to form the new group "less than 70 percent", while the groups "70-79 percent" and "80 percent or more" were collapsed to form the group "70 percent and above". This was done to ensure equal cell sizes as well as deemed to be an appropriate split for academic performance. The mean values of the two groups and the t-test result of the hypothesis test are shown in Table 6.17.

Table 6.17: Mean values and t-test results for Grade 12 average and use of websites

Grade 12 average	70% and above N = 651	Less than 70% N = 578	F value	p- value
Word-of-mouth	3.8870	3.9057	1.08	0.7595

Since the p-value was larger than the specified significance level of 5 percent, the null hypothesis could not be rejected. There was therefore not enough support for H_7, since the t-test results did not show a significant difference between students of different academic standing and the use of websites as an information source. This suggests that websites are a useful information source for students, irrespective of their academic standing.

A summary of all the discussed hypotheses in this chapter is presented in Table 6.18, indicating whether support was found for the hypothesis or not.

Table 6.18: Summary of hypotheses tested

	Alternative hypotheses	Supported or not supported
H_1	Students from different ethnic backgrounds differ regarding the importance they attach to choice factors.	Supported
H_2	Students speaking different home languages differ regarding the importance they attach to choice factors.	Supported
H_3	Male and female students differ regarding the importance they attach to choice factors.	Supported
H_4	Students from different academic institutions differ regarding the importance they attach to choice factors.	Supported
H_5	Students that live further than seventy kilometres from the higher education institution attach more value to campus visits or open days as a source of information than students living close-by.	Not supported
H_6	Students that are residents of the province in which the chosen higher education institution is located, value word-of-mouth (friends and other people) more as a source of information than students from other provinces.	Not supported
H_7	Students with a Grade 12 average of seventy percent or more rely significantly more on higher education institutions' websites as a source of information, than students with a Grade 12 average of less than seventy percent.	Not supported

6.6 SUMMARY

This chapter analysed and reported the results from the empirical study. Firstly, the response rate was presented and then the descriptive statistics were explained. The results of all the questions in the questionnaire were reported by focussing on the socio-demographic profile of respondents, university characteristics (choice factors) and the usefulness of information sources.

The empirical analysis indicated that the choice factor scale used in the study was reliable. The empirical results were also assessed to address the formulated hypotheses and research objectives. The chapter concluded with a summary of the outcome of each hypothesis. The results found in this chapter may be of importance to marketing managers of higher education institutions when planning their recruitment, communication, and marketing strategies. The next and final chapter, Chapter 7, will draw conclusions and make recommendations based on the main findings presented in this chapter.